



14<sup>th</sup> March 2023

Ref No: 1322\_Level 1\_Aurora Stage 4

# **REPORT ON LEVEL 1 EARTHWORKS INSPECTION AND TESTING**



**PROJECT: AURORA STAGE 4 - DALEYS ROAD RIPLEY**

**CONTRACTOR: BMD URBAN PTY LTD**

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## 1 INTRODUCTION

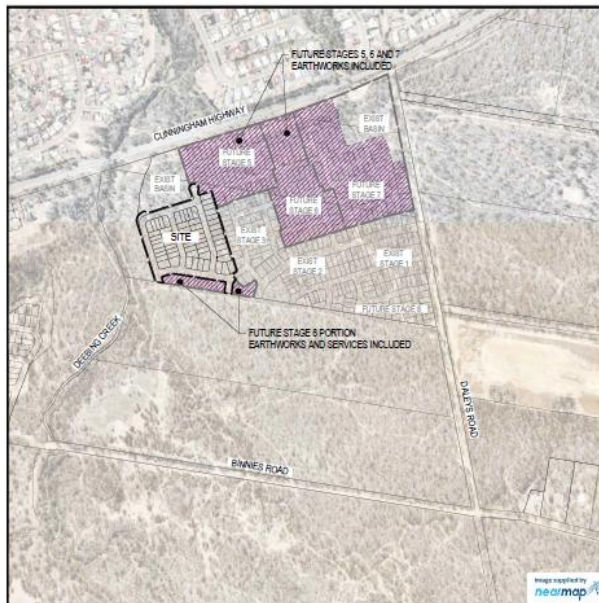
### 1.0 GENERAL

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with Clause 8.2 of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

The fill placed on the development between 14/11/22 and 20/12/22 as detailed in this report is considered to be controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

### 1.1 SITE DESCRIPTION

The site is located Daleys Road, Ripley in Queensland. Shown below.



Stage 4

## 2 WORKS AND SPECIFICATIONS

The earthworks generally comprised of Level 1 filling placed on the site. Filling was conducted by using site won materials. The fill materials were placed in layers not exceeding 150mm and moisture conditioned as required to achieve an appropriate placement Moisture Content. Padfoot Compactors were then utilised to compact the fill until the required density specifications were achieved.

Filling was carried out in accordance with AS3798-2007 '*Guidelines on earthworks for commercial and residential developments*' and with the project specification prepared for the project.

The specification requirements were that all fill was to be placed and compacted in layers to a density ratio of not less than 95% of the maximum dry density as determined by AS1289.5.7.1 (standard compaction).

### 3 PREVIOUS FILLING

No previous filling has been conducted on the site.

### 4 FILL FOUNDATION

The stripped surfaces of proposed fill areas were inspected, and proof rolled prior to placement of fill. In general, the proof rolling was carried out with the equipment used to compact the fill and a water truck. Compliance of the fill foundation and approval to commence filling was on the basis of:

- adequate removal of topsoil and organics
- soundness (minimum deflection) under proof rolling
- Suitable Benching/keying into slopes

### 5 COMPLIANCE TESTING

Test locations were randomly selected by the Geotechnical Testing Authority (GTA) Australian Soil and Concrete Testing. Compaction control tests were carried out at regular intervals throughout the placement of fill in accordance with the minimum test frequency recommendations included in the specifications. The table below summarises the test results. The test locations were not professionally surveyed and should be considered approximate.

All field density tests carried out on the structural fill meet the minimum specification requirements of 95% Standard Compaction (AS 1289 5.8.1, 5.7.1 & 2.1.1).

Test No	Test Date	Test Location			Test Level	Density Ratio %
74758	17/11/2022	Bulk Earthworks	E:5296.6	N:13273.8	RL:42.04	99.0
74759	17/11/2022	Bulk Earthworks	E:5224.2	N:13163.2	RL:43.0	99.5
74760	17/11/2022	Bulk Earthworks	6m off W Bdy	3m off Nth Bdy	F/L of Pad	98.5
74761	17/11/2022	Bulk Earthworks	2m off W Bdy	8m off Nth Bdy	F/L of Pad	98.5
74948	18/11/2022	Bulk Earthworks	E:5181.8	N:13194.4	RL:42.56	100.5
74949	18/11/2022	Bulk Earthworks	E:5202.9	N:13969.1	RL:42.68	101.0
74950	18/11/2022	Bulk Earthworks	E:5224.2	N:13165.2	RL:43.30	101.5
74972	21/11/2022	Bulk Earthworks	E:5187.7	N:13180.3	RL:42.9	95.5
74973	21/11/2022	Bulk Earthworks	E:5203.4	N:13172.6	RL:43.30	96.0
74974	21/11/2022	Bulk Earthworks	E:5226.9	N:13157.8	RL:43.6	97.5
75161	22/11/2022	Bulk Earthworks	E:5227.3	N:13016.1	RL:44.3	95.5
75162	22/11/2022	Bulk Earthworks	E:5252.8	N:13153.9	RL:44.6	97.5
75163	22/11/2022	Bulk Earthworks	E:5271.2	N:13514.8	RL:44.9	99.0
75196	23/11/2022	Bulk Earthworks	E:5282.34	N:13166.62	RL:44.60	98.5
75197	23/11/2022	Bulk Earthworks	E:5266.24	N:13151.42	RL:46.10	98.0
75198	23/11/2022	Bulk Earthworks	E:5254.68	N:13174.96	RL:45.83	96.0
75199	23/11/2022	Bulk Earthworks	E:5279.31	N:13169.34	RL:44.26	98.0
75200	23/11/2022	Bulk Earthworks	E:5247.62	N:13182.22	RL:45.34	96.5

75536	24/11/2022	Bulk Earthworks	E:5234.36	N:13170.77	RL:45.29	97.0
75537	24/11/2022	Bulk Earthworks	E:5262.33	N:13131.76	RL:46.71	100.0
75538	24/11/2022	Bulk Earthworks	E:5296.93	N:13170.87	RL:48.07	95.5
75539	24/11/2022	Bulk Earthworks	E:5290.09	N:13165.03	RL:47.08	99.0
75540	24/11/2022	Bulk Earthworks	E:5369.70	N:13136.20	RL:46.05	101.5
75541	25/11/2022	Bulk Earthworks	E:5277.80	N:13279.40	RL:41.90	95.0
75542	25/11/2022	Bulk Earthworks	E:5278.08	N:13202.73	RL:46.56	96.0
75543	25/11/2022	Bulk Earthworks	E:5298.20	N:13262.97	RL:48.39	95.5
75544	25/11/2022	Bulk Earthworks	E:5269.22	N:13281.41	RL:41.85	96.0
75545	25/11/2022	Bulk Earthworks	E:5286.31	N:13205.93	RL:48.09	95.5
75635	28/11/2022	Bulk Earthworks	E:5296.22	N:13190.67	RL:47.54	95.5
75636	28/11/2022	Bulk Earthworks	E:5305.84	N:13256.10	RL:44.06	97.5
75637	28/11/2022	Bulk Earthworks	E:5310.39	N:13227.37	RL:45.95	97.0
75638	28/11/2022	Bulk Earthworks	E:5317.24	N:13234.71	RL:46.02	98.0
75639	28/11/2022	Bulk Earthworks	E:5321.89	N:13238.04	RL:45.98	96.0
75861	29/11/2022	Bulk Earthworks	E:5627.15	N:14344.36	RL:56.18	95.5
75862	29/11/2022	Bulk Earthworks	E:5651.77	N:14437.5	RL:55.78	95.5
75863	29/11/2022	Bulk Earthworks	E:5567.61	N:14439.75	RL:55.50	99.5
75897	30/11/2022	Bulk Earthworks	E:5296.00	N:13252.67	RL:44.69	99.0
75898	30/11/2022	Bulk Earthworks	E:5299.10	N:13225.50	RL:45.98	97.5
75899	30/11/2022	Bulk Earthworks	E:5305.69	N:13193.59	RL:47.64	95.5
75900	30/11/2022	Bulk Earthworks	E:5289.71	N:13251.54	RL:45.58	96.0
75901	30/11/2022	Bulk Earthworks	E:5306.73	N:13231.44	RL:45.88	95.0
76028	5/12/2022	Bulk Earthworks	10m off Nth Bdy	21m off E Bdy	RL:41.4	99.0
76029	5/12/2022	Bulk Earthworks	3m off Nth Bdy	25m off E Bdy	RL:42.7	97.0
76030	5/12/2022	Bulk Earthworks	11m off Nth Bdy	10m off E Bdy	RL:43.2	97.0
76031	5/12/2022	Bulk Earthworks	8m off Nth Bdy	12m off E Bdy	RL:43.0	98.5
76032	5/12/2022	Bulk Earthworks	6m off Nth Bdy	9m off E Bdy	RL:42.7	100.0
76257	6/12/2022	Bulk Earthworks	E:5286.7	N:13204.4	RL:47.5	99.5
76258	6/12/2022	Bulk Earthworks	E:5318.5	N:13199.9	RL:48.8	97.5
76259	6/12/2022	Bulk Earthworks	E:5289.3	N:13211.2	RL:47.2	96.5
76260	6/12/2022	Bulk Earthworks	E:5319.4	N:13196.2	RL:48.0	102.0
76261	6/12/2022	Bulk Earthworks	E:5333.5	N:13205.9	RL:47.9	98.0
76294	7/12/2022	Bulk Earthworks	E:5280.4	N:13219.6	RL:47.9	100.5
76295	7/12/2022	Bulk Earthworks	E:5319.2	N:13200.1	RL:49.4	95.5
76296	7/12/2022	Bulk Earthworks	E:5289.9	N:13217.6	RL:47.8	96.0
76297	7/12/2022	Bulk Earthworks	E:5326.3	N:13198.4	RL:48.5	101.5
76298	7/12/2022	Bulk Earthworks	E:5334.2	N:13209.4	RL:48.6	96.5
76431	9/12/2022	Bulk Earthworks	E:5348.2	N:13286.0	RL:43.2	96.0
76432	9/12/2022	Bulk Earthworks	E:5345.6	N:13255.4	RL:45.0	100.0
76433	9/12/2022	Bulk Earthworks	E:5354.7	N:13221.7	RL:47.0	98.0
76434	9/12/2022	Bulk Earthworks	E:5346.2	N:13285.9	RL:43.0	99.0

76435	9/12/2022	Bulk Earthworks	E:5349.3	N:13280.1	RL:42.7	99.0
76491	12/12/2022	Bulk Earthworks	E:5339.3	N:13265.4	RL:44.9	97.0
76492	12/12/2022	Bulk Earthworks	E:5342.8	N:13255.5	RL:45.6	100.5
76493	12/12/2022	Bulk Earthworks	E:5346.3	N:13240.4	RL:46.5	103.5
76494	12/12/2022	Bulk Earthworks	E:5348.1	N:13233.7	RL:47.3	101.0
76495	12/12/2022	Bulk Earthworks	E:5350.0	N:13220.6	RL:48.1	97.5
76496	12/12/2022	Bulk Earthworks	E:5341.2	N:13269.2	RL:44.0	99.0
76776	15/12/2022	Bulk Earthworks	E:5332.2	N:13147.0	RL:50.4	99.5
76777	15/12/2022	Bulk Earthworks	E:5345.6	N:13193.8	RL:49.9	98.5
76778	15/12/2022	Bulk Earthworks	E:5363.7	N:13188.2	RL:50.9	99.5
76779	15/12/2022	Bulk Earthworks	E:5328.6	N:13145.2	RL:49.7	95.5
76780	15/12/2022	Bulk Earthworks	E:5341.2	N:13194.2	RL:49.2	99.0
76870	19/12/2022	Bulk Earthworks	E:5318.1	N:13357.2	RL:36.0	95.0
76871	19/12/2022	Bulk Earthworks	E:5301.0	N:13362.1	RL:36.4	95.5
76872	19/12/2022	Bulk Earthworks	E:5305.2	N:13352.1	RL:36.2	96.0
76873	19/12/2022	Bulk Earthworks	E:5322.1	N:13356.1	RL:35.8	95.5
76874	19/12/2022	Bulk Earthworks	E:5325.2	N:13354.2	RL:35.6	96.0
77033	20/12/2022	Bulk Earthworks	E:5308.3	N:13344.9	RL:38.3	98.0
77034	20/12/2022	Bulk Earthworks	E:5316.3	N:13348.8	RL:38.3	98.0
77035	20/12/2022	Bulk Earthworks	E:5324.6	N:13353.6	RL:38.2	98.0

**No. of Tests: 80**

**Mean: 97.8 %**

## 6 CONCLUSION

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction, as far as we have been able to determine, the structural fill placed between the 14/11/22 and 20/12/22 is considered to have been carried out in general accordance with AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

## 7 LIMITATIONS

Unless otherwise stated in this report, this report does not include: Backfill behind retaining structures, Backfill to service trenches, Road Pavements, Any Topsoil placed on the site, Slope Stability or Site Drainage.

Please do not hesitate to contact me if you have any queries.

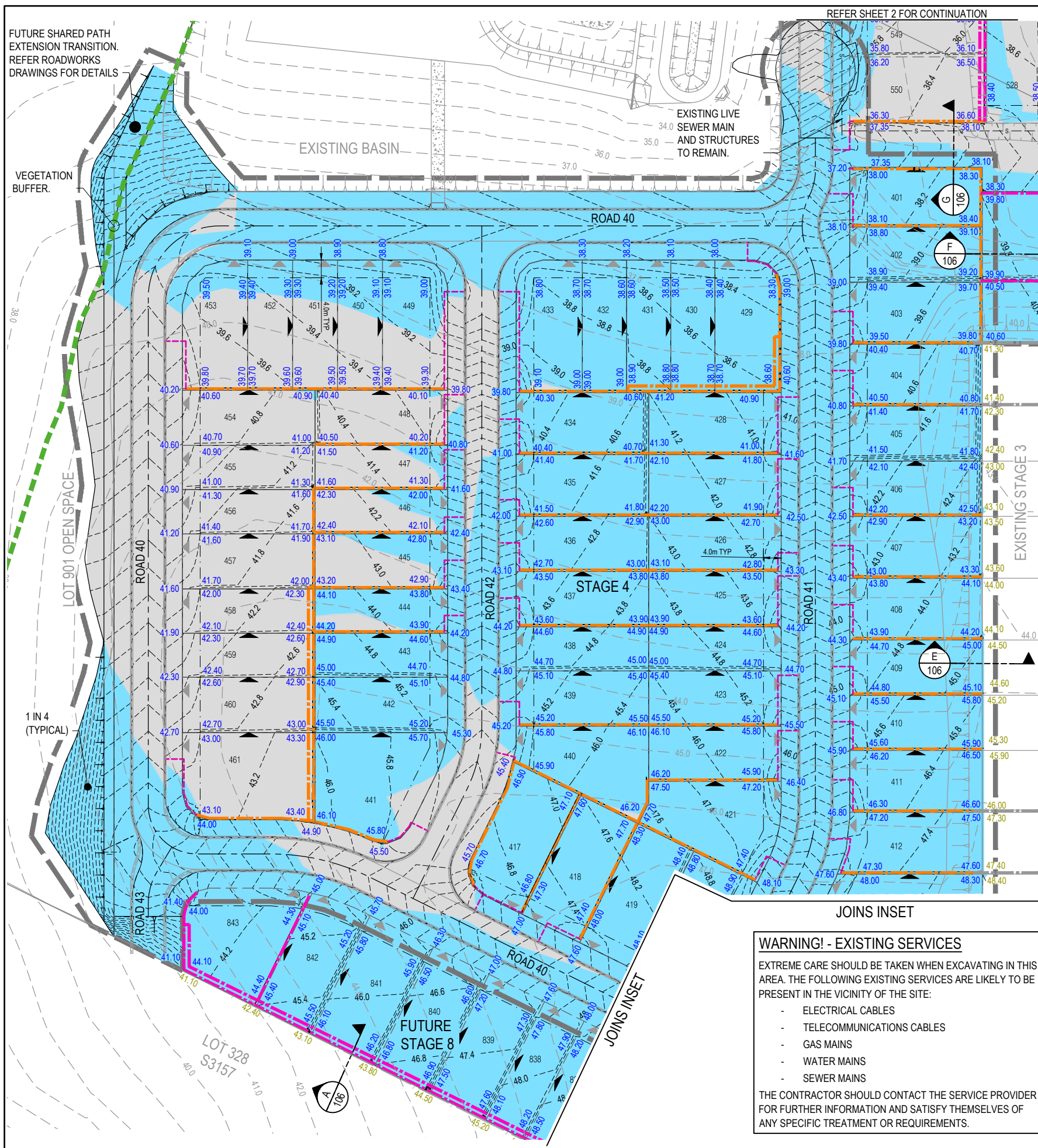
Yours faithfully



Jason Mckenna  
Laboratory Manager  
ASCT Brisbane South

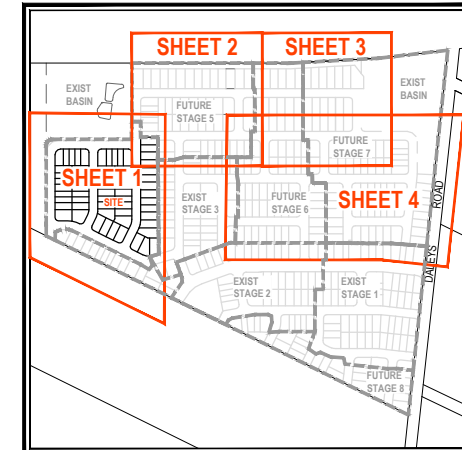
# **Appendix A**

## **Cut Fill Drawings**



REFER SHEET 2 FOR CONTINUATION

REFER SHEET 2 FOR CONTINUATION



KEYPLAN  
NOT TO SCALE

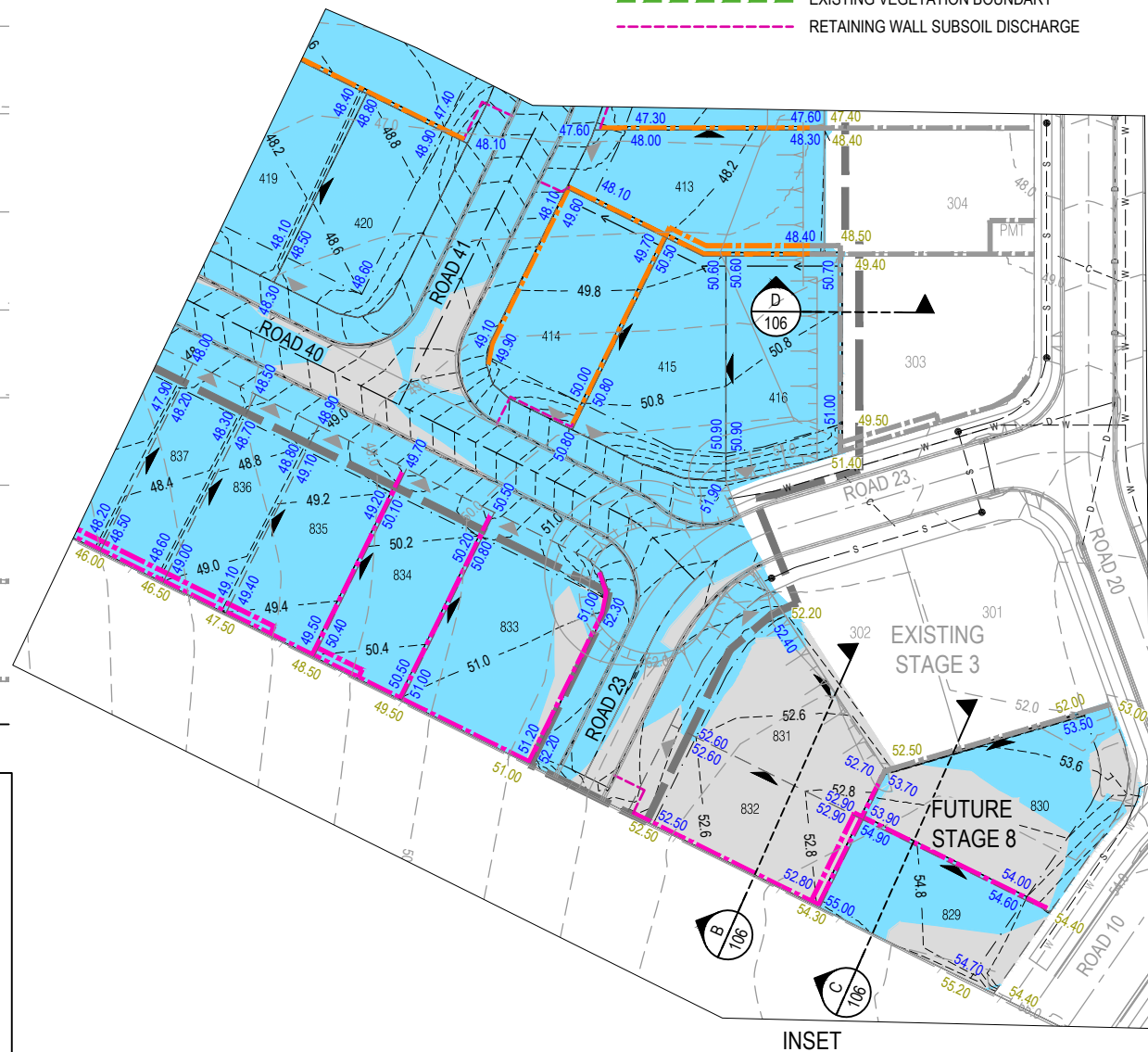
LEGEND	
	PROPOSED AREA OF WORKS
	PROPOSED SURFACE CONTOUR
	EXISTING SURFACE CONTOUR
	PROPOSED EARTHWORKS PAD SETBACK LINE
	PROPOSED CONCRETE SLEEPER RETAINING WALL (SINGLE TIER)
	PROPOSED CONCRETE SLEEPER RETAINING WALL (DOUBLE TIER)
	FUTURE CONCRETE RETAINING WALL
	EXISTING CONCRETE RETAINING WALL
	PROPOSED FINISHED SURFACE LEVEL (FSL) (AFTER TOPSOIL PLACEMENT)
	EXISTING SURFACE LEVEL (ESL)
	PROPOSED AREA OF CUT
	PROPOSED AREA OF FILL
	INDICATIVE DRIVEWAY LOCATIONS
	ZERO LOT BOUNDARY
	EXISTING STORMWATER DRAINAGE PIPE
	EXISTING SEWER MAIN
	EXISTING WATER MAIN
	EXISTING DRAIN
	EXISTING VEGETATION BOUNDARY
	RETAINING WALL SUBSOIL DISCHARGE

**WARNING! - EXISTING SERVICES**

EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:

- ELECTRICAL CABLES
- TELECOMMUNICATIONS CABLES
- GAS MAINS
- WATER MAINS
- SEWER MAINS

THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.



INSET

REV	DATE	DESIGN	DRAWN	REVISION DETAILS	DRAWN	STATUS	SCALE	CLIENT	PROJECT NAME	DRAWING TITLE
A	14.09.22	RD	RD	ISSUED FOR CONSTRUCTION	RD	ISSUED FOR CONSTRUCTION	1:500 1:1000	ORCHARD (DALEYS) DEVELOPMENTS PTY LTD	AURORA STAGE 4	BULK EARTHWORKS LAYOUT PLAN SHEET 1
					DESIGN	APPROVED		ASSOCIATED CONSULTANT	DALEYS ROAD RIPLEY QLD	PROJECT No. 21-0257
					RD	TROY SCHULTZ		LANDPARTNERS		DRAWING No. 102
						RPEQ 20631				REVISION A
						FOR AND ON BEHALF OF PEAKURBAN PTY LTD				





# **Appendix B**

## **Test Reports**

**ASCT Brisbane South**

Postal: PO Box 1232 Park Ridge QLD 4125  
 Laboratory: 4/31 Tradelink Road Hillcrest Q 4118  
 Telephone: 0437 776 582  
 E-Mail: brisbane.south@asct.com.au  
 Mobile: 0437 776 582  
 A.B.N. 28 608 830 306

**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks - Level 1  
 Lot Number:

Report No: 1  
 Report Date: 1/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	74758	74759	74760	74761	-
Field Test Number:	1	2	3	4	-
Date - Field Tested:	17/11/2022	17/11/2022	17/11/2022	17/11/2022	-
Time - Field Tested:	1035	1045	1105	1110	-
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	Lot 442	Lot 441	
Location/Chainage/Easting: (m)	E:5296.6	E:5224.2	6m off West Boundary	2m off West Boundary	-
Position/Offset/Northing: (m)	N:13273.8	N:13163.2	3m off North Boundary	8m off North Boundary	-
Level/Layer/R.L.	RL:42.04	RL:43.0	F/L of Pad	F/L of Pad	-
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	150	150	-

**Field & Laboratory Results**

Field Wet Density: (t/m <sup>3</sup> )	2.10	2.07	2.09	2.10	-
Field Dry Density: (t/m <sup>3</sup> )	1.92	1.88	1.89	1.90	-
Retained Oversize (Wet basis): (%)	0% on 19.0mm	0% on 19.0mm	0% on 19.0mm	0% on 19.0mm	-
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	-
Field Moisture Content: (%)	9.0	10.5	10.5	10.5	-
Adjusted Lab OMC: (%)	10.9	12.1	12.0	12.0	-
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	-
Lab Max Converted Wet Density: (t/m <sup>3</sup> )	2.12	2.08	2.12	2.13	-
Adjusted Lab Max CWD: (t/m <sup>3</sup> )	2.12	2.08	2.12	2.13	-
Compactive Effort:	Standard	Standard	Standard	Standard	-

**Relative Compaction & Moisture**

Moisture Variation (%)	1.5% Drier than OMC	2.0% Drier than OMC	1.5% Drier than OMC	1.5% Drier than OMC	-
Moisture Ratio (%)	85.0	84.5	86.0	87.0	-
Density Ratio (%)	99.0	99.5	98.5	98.5	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	98.6	4	98.95	0.54	0.640
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 30/11/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By: A. Lenkeit  
 Approved Signatory

**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

 Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks - Level 1  
 Lot Number:

 Report No: 2  
 Report Date: 2/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	74948	74949	74950	-	-
Field Test Number:	1	2	3	-	-
Date - Field Tested:	18/11/2022	18/11/2022	18/11/2022	-	-
Time - Field Tested:	0930	0935	0940	-	-
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting: (m)	E:5181.8	E:5202.9	E:5224.2	-	-
Position/Offset/Northing: (m)	N:13194.4	N:13969.1	N:13165.2	-	-
Level/Layer/R.L.	RL:42.56	RL:42.68	RL:43.30	-	-
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	150	-	-

**Field & Laboratory Results**

Field Wet Density: (t/m <sup>3</sup> )	2.10	2.15	2.11	-	-
Field Dry Density: (t/m <sup>3</sup> )	1.93	2.00	1.95	-	-
Retained Oversize (Wet basis): (%)	3% on 19.0mm	2% on 19.0mm	3% on 19.0mm	-	-
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	-	-
Field Moisture Content: (%)	9.0	7.5	8.5	-	-
Adjusted Lab OMC: (%)	10.5	9.2	10.1	-	-
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	-	-
Lab Max Converted Wet Density: (t/m <sup>3</sup> )	2.08	2.12	2.07	-	-
Adjusted Lab Max CWD: (t/m <sup>3</sup> )	2.08	2.12	2.08	-	-
Compactive Effort:	Standard	Standard	Standard	-	-

**Relative Compaction & Moisture**

Moisture Variation (%)	1.5% Drier than OMC	2.0% Drier than OMC	1.5% Drier than OMC	-	-
Moisture Ratio (%)	85.5	80.0	83.0	-	-
Density Ratio (%)	100.5	101.0	101.5	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	100.8	3	101.10	0.40	0.739
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation &amp; Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 01/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:



 A. Lenkeit  
 Approved Signatory

**ASCT Brisbane South**

Postal: PO Box 1232 Park Ridge QLD 4125  
 Laboratory: 4/31 Tradelink Road Hillcrest Q 4118  
 Telephone: 0437 776 582  
 E-Mail: brisbane.south@asct.com.au  
 Mobile: 0437 776 582  
 A.B.N. 28 608 830 306

**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Client:	BMD Urban Pty Ltd	Report No:	<b>3</b>
Client Address:	1 Sandpiper Ave, Port of Brisbane QLD 4178	Report Date:	2/12/2022
Project:	Aurora Stage 4	Project No:	1322
Component:	Bulk Earthworks - Level 1	Test Request:	
Lot Number:		ITP/PCP:	

**Sample Information & Location**

Sample Number:	74972	74973	74974	-	-
Field Test Number:	1	2	3	-	-
Date - Field Tested:	21/11/2022	21/11/2022	21/11/2022	-	-
Time - Field Tested:	1000	1010	1020	-	-
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-		
Location/Chainage/Easting:	(m) E:5187.7	E:5203.4	E:5226.9	-	-
Position/Offset/Northing:	(m) N:13180.3	N:13172.6	N:13157.8	-	-
Level/Layer/R.L.	RL:42.9	RL:43.30	RL:43.6	-	-
Layer Depth:	(mm) -	-	-	-	-
Depth Tested:	(mm) 150	150	150	-	-

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> ) 2.06	2.08	2.11	-	-
Field Dry Density:	(t/m <sup>3</sup> ) 1.85	1.89	1.95	-	-
Retained Oversize (Wet basis):	(%) 4% on 19.0mm	1% on 19.0mm	3% on 19.0mm	-	-
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	-	-
Field Moisture Content:	(%) 11.5	10.5	8.0	-	-
Adjusted Lab OMC:	(%) 11.5	10.4	9.6	-	-
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	-	-
Lab Max Converted Wet Density:	(t/m <sup>3</sup> ) 2.15	2.16	2.15	-	-
Adjusted Lab Max CWD:	(t/m <sup>3</sup> ) 2.16	2.17	2.16	-	-
Compactive Effort:	Standard	Standard	Standard	-	-

**Relative Compaction & Moisture**

Moisture Variation	(%) <b>At OMC</b>	<b>At OMC</b>	<b>1.5% Drier than OMC</b>	-	-
Moisture Ratio	(%) <b>100.0</b>	<b>100.0</b>	<b>85.5</b>	-	-
Density Ratio	(%) <b>95.5</b>	<b>96.0</b>	<b>97.5</b>	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	<b>95.7</b>	3	96.47	1.03	0.739
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, Cl 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in NATA endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 01/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:

A. Lenkeit  
Approved Signatory

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**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks - Level 1  
 Lot Number:

Report No: 4  
 Report Date: 5/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	75161	75162	75163	-	-
Field Test Number:	1	2	3	-	-
Date - Field Tested:	22/11/2022	22/11/2022	22/11/2022	-	-
Time - Field Tested:	1000	1005	1010	-	-
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-		
Location/Chainage/Easting:	(m) E:5227.3	E:5252.8	E:5271.2	-	-
Position/Offset/Northing:	(m) N:13016.1	N:13153.9	N:13514.8	-	-
Level/Layer/R.L.	RL:44.3	RL:44.6	RL:44.9	-	-
Layer Depth:	(mm) -	-	-	-	-
Depth Tested:	(mm) 150	150	150	-	-

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> )	2.01	2.07	2.14	-	-
Field Dry Density:	(t/m <sup>3</sup> )	1.83	1.83	1.96	-	-
Retained Oversize (Wet basis):	(%)	0% on 19.0mm	0% on 19.0mm	0% on 19.0mm	-	-
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	-	-
Field Moisture Content:	(%)	10.0	13.0	9.0	-	-
Adjusted Lab OMC:	(%)	10.3	12.1	9.6	-	-
Fraction Tested:		Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	-	-
Lab Max Converted Wet Density:	(t/m <sup>3</sup> )	2.11	2.12	2.16	-	-
Adjusted Lab Max CWD:	(t/m <sup>3</sup> )	2.11	2.12	2.16	-	-
Compactive Effort:		Standard	Standard	Standard	-	-

**Relative Compaction & Moisture**

Moisture Variation	(%)	<b>At OMC</b>	<b>1.0% Wetter than OMC</b>	<b>0.5% Drier than OMC</b>	-	-
Moisture Ratio	(%)	<b>98.0</b>	<b>106.5</b>	<b>95.5</b>	-	-
Density Ratio	(%)	<b>95.5</b>	<b>97.5</b>	<b>99.0</b>	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	<b>95.9</b>	3	97.27	1.90	0.739
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, Cl 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 01/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:

A. Lenkeit  
 Approved Signatory

**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

 Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks - Level 1  
 Lot Number:

 Report No: 6  
 Report Date: 7/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	75196	75197	75198	75199	75200
Field Test Number:	1	2	3	4	5
Date - Field Tested:	23/11/2022	23/11/2022	23/11/2022	23/11/2022	23/11/2022
Time - Field Tested:	1000	1005	1010	1015	1020
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting:	(m) E:5282.34	E:5266.24	E:5254.68	E:5279.31	E:5247.62
Position/Offset/Northing:	(m) N:13166.62	N:13151.42	N:13174.96	N:13169.34	N:13182.22
Level/Layer/R.L.	RL:44.60	RL:46.10	RL:45.83	RL:44.26	RL:45.34
Layer Depth:	(mm) -	-	-	-	-
Depth Tested:	(mm) 150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> )	2.04	2.07	2.08	2.10	2.10
Field Dry Density:	(t/m <sup>3</sup> )	1.85	1.87	1.85	1.90	1.90
Retained Oversize (Wet basis):	(%)	2% on 19.0mm	1% on 19.0mm	2% on 19.0mm	1% on 19.0mm	1% on 19.0mm
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content:	(%)	10.0	10.5	12.5	10.5	10.0
Adjusted Lab OMC:	(%)	11.9	12.2	12.2	11.0	10.9
Fraction Tested:		Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density:	(t/m <sup>3</sup> )	2.06	2.12	2.16	2.15	2.17
Adjusted Lab Max CWD:	(t/m <sup>3</sup> )	2.07	2.12	2.16	2.15	2.17
Compactive Effort:		Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation	(%)	<b>2.0% Drier than OMC</b>	<b>1.5% Drier than OMC</b>	<b>At OMC</b>	<b>0.5% Drier than OMC</b>	<b>0.5% Drier than OMC</b>
Moisture Ratio	(%)	<b>83.5</b>	<b>87.5</b>	<b>101.0</b>	<b>94.0</b>	<b>94.0</b>
Density Ratio	(%)	<b>98.5</b>	<b>98.0</b>	<b>96.0</b>	<b>98.0</b>	<b>96.5</b>

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	<b>96.8</b>	5	97.34	1.00	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation &amp; Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 02/12/2022 to 05/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:



 A. Lenkeit  
 Approved Signatory

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**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks-Level 1  
 Lot Number:

Report No: 5  
 Report Date: 6/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	75536	75537	75538	75539	75540
Field Test Number:	1	2	3	4	5
Date - Field Tested:	24/11/2022	24/11/2022	24/11/2022	24/11/2022	24/11/2022
Time - Field Tested:	1000	1005	1010	1015	1020
Material Source / Type:	Onsite - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting:	(m) E:5234.36	E:5262.33	E:5296.93	E:5290.09	E:5369.70
Position/Offset/Northing:	(m) N:13170.77	N:13131.76	N:13170.87	N:13165.03	N:13136.20
Level/Layer/R.L.	RL:45.29	RL:46.71	RL:48.07	RL:47.08	RL46.05
Layer Depth:	(mm) -	-	-	-	-
Depth Tested:	(mm) 150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> )	2.04	2.05	1.99	2.06	2.15
Field Dry Density:	(t/m <sup>3</sup> )	1.81	1.87	1.81	1.90	1.99
Retained Oversize (Wet basis):	(%)	1% on 19.0mm	1% on 19.0mm	0% on 19.0mm	0% on 19.0mm	0% on 19.0mm
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content:	(%)	12.5	9.5	10.0	8.5	8.0
Adjusted Lab OMC:	(%)	14.0	11.8	11.6	10.3	10.1
Fraction Tested:		Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density:	(t/m <sup>3</sup> )	2.10	2.04	2.08	2.08	2.12
Adjusted Lab Max CWD:	(t/m <sup>3</sup> )	2.11	2.05	2.08	2.08	2.12
Compactive Effort:		Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation	(%)	1.5% Dryer than OMC	2.0% Dryer than OMC	2.0% Dryer than OMC	2.0% Dryer than OMC	2.0% Dryer than OMC
Moisture Ratio	(%)	90.5	82.5	85.0	83.0	81.5
Density Ratio	(%)	97.0	100.0	95.5	99.0	101.5

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	97.3	5	98.62	2.36	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 02/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:

A. Lenkeit  
Approved Signatory



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**Compaction Control Test Report (Nuclear Gauge & Hilf)** Page: 1 of 1

Client:	BMD Urban Pty Ltd	Report No:	7
Client Address:	1 Sandpiper Ave, Port of Brisbane QLD 4178	Report Date:	7/12/2022
Project:	Aurora Stage 4	Project No:	1322
Component:	Bulk Earthworks-Level 1	Test Request:	
Lot Number:		ITP/PCP:	

**Sample Information & Location**

	75541	75542	75543	75544	75545
Sample Number:	1	2	3	4	5
Field Test Number:	25/11/2022	25/11/2022	25/11/2022	25/11/2022	25/11/2022
Date - Field Tested:	1300	1305	1310	1315	1320
Time - Field Tested:	Onsite - General Fill				
Material Source / Type:					
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting:	(m) E:5277.80	E:5278.08	E:5298.20	E:5269.22	E:5286.31
Position/Offset/Northing:	(m) N:13279.40	N:13202.73	N:13262.97	N:13281.41	N:13205.93
Level/Layer/R.L.	RL:41.90	RL:46.56	RL:48.39	RL:41.85	RL:48.09
Layer Depth:	(mm) -	-	-	-	-
Depth Tested:	(mm) 150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> )	1.92	2.01	2.01	1.97	1.94
Field Dry Density:	(t/m <sup>3</sup> )	1.72	1.81	1.84	1.72	1.73
Retained Oversize (Wet basis):	(%)	1% on 19.0mm	2% on 19.0mm	7% on 19.0mm	1% on 19.0mm	1% on 19.0mm
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content:	(%)	11.5	10.5	9.5	14.5	12.5
Adjusted Lab OMC:	(%)	13.9	12.7	12.1	14.3	14.4
Fraction Tested:		Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density:	(t/m <sup>3</sup> )	2.02	2.08	2.08	2.04	2.02
Adjusted Lab Max CWD:	(t/m <sup>3</sup> )	2.02	2.09	2.10	2.04	2.03
Compactive Effort:		Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation	(%)	2.0% Drier than OMC	2.0% Drier than OMC	2.5% Drier than OMC	0.5% Wetter than OMC	2.0% Drier than OMC
Moisture Ratio	(%)	84.5	84.5	77.5	102.5	85.0
Density Ratio	(%)	95.0	96.0	95.5	96.0	95.5

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	95.5	5	95.74	0.44	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 06/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By: A. Lenkeit  
 Approved Signatory



**ASCT Brisbane South**

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**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks-Level 1  
 Lot Number:

Report No: 8  
 Report Date: 12/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	75635	75636	75637	75638	75639
Field Test Number:	1	2	3	4	5
Date - Field Tested:	28/11/2022	28/11/2022	28/11/2022	28/11/2022	28/11/2022
Time - Field Tested:	1000	1005	1010	1015	1020
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting: (m)	E:5296.22	E:5305.84	E:5310.39	E:5317.24	E:5321.89
Position/Offset/Northing: (m)	N:13190.67	N:13256.10	N:13227.37	N:13234.71	N:13238.04
Level/Layer/R.L.	RL:47.54	RL:44.06	RL:45.95	RL:46.02	RL:45.98
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density: (t/m <sup>3</sup> )	2.05	2.09	2.03	2.04	2.07
Field Dry Density: (t/m <sup>3</sup> )	1.84	1.88	1.84	1.84	1.88
Retained Oversize (Wet basis): (%)	2% on 19.0mm	3% on 19.0mm	3% on 19.0mm	3% on 19.0mm	2% on 19.0mm
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content: (%)	11.0	11.0	11.0	11.0	10.5
Adjusted Lab OMC: (%)	10.7	10.8	10.4	12.8	10.5
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density: (t/m <sup>3</sup> )	2.13	2.13	2.09	2.07	2.15
Adjusted Lab Max CWD: (t/m <sup>3</sup> )	2.14	2.14	2.10	2.08	2.16
Compactive Effort:	Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation (%)	0.5% Wetter than OMC	At OMC	0.5% Wetter than OMC	2.0% Dryer than OMC	At OMC
Moisture Ratio (%)	104.0	100.0	103.0	85.5	99.0
Density Ratio (%)	95.5	97.5	97.0	98.0	96.0

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	96.2	5	96.82	1.02	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 09/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:

A. Lenkeit  
 Approved Signatory

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**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks - Level 1  
 Lot Number:

Report No: 9  
 Report Date: 12/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	75861	75862	75863	-	-
Field Test Number:	1	2	3	-	-
Date - Field Tested:	29/11/2022	29/11/2022	29/11/2022	-	-
Time - Field Tested:	1300	1305	1310	-	-
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-		
Location/Chainage/Easting: (m)	E:5627.15	E:5651.77	E:5567.61	-	-
Position/Offset/Northing: (m)	N:14344.36	N:14437.5	N:14439.75	-	-
Level/Layer/R.L.	RL:56.18	RL:55.78	RL:55.50	-	-
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	150	-	-

**Field & Laboratory Results**

Field Wet Density: (t/m <sup>3</sup> )	2.10	2.09	2.16	-	-
Field Dry Density: (t/m <sup>3</sup> )	1.86	1.91	1.97	-	-
Retained Oversize (Wet basis): (%)	3% on 19.0mm	2% on 19.0mm	9% on 19.0mm	-	-
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	-	-
Field Moisture Content: (%)	13.0	9.5	9.5	-	-
Adjusted Lab OMC: (%)	12.5	11.3	11.6	-	-
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	-	-
Lab Max Converted Wet Density: (t/m <sup>3</sup> )	2.20	2.18	2.16	-	-
Adjusted Lab Max CWD: (t/m <sup>3</sup> )	2.20	2.18	2.17	-	-
Compactive Effort:	Standard	Standard	Standard	-	-

**Relative Compaction & Moisture**

Moisture Variation (%)	0.5% Wetter than OMC	2.0% Drier than OMC	2.0% Drier than OMC	-	-
Moisture Ratio (%)	103.5	83.5	83.0	-	-
Density Ratio (%)	95.5	95.5	99.5	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	95.2	3	96.83	2.23	0.739
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 08/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:

A. Lenkeit  
 Approved Signatory

**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

 Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks - Level 1  
 Lot Number:

 Report No: **10**  
 Report Date: 12/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	75897	75898	75899	75900	75901
Field Test Number:	1	2	3	4	5
Date - Field Tested:	30/11/2022	30/11/2022	30/11/2022	30/11/2022	30/11/2022
Time - Field Tested:	1000	1005	1010	1015	1020
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting:	(m) E:5296.00	E:5299.10	E:5305.69	E:5289.71	E:5306.73
Position/Offset/Northing:	(m) N:13252.67	N:13225.50	N:13193.59	N:13251.54	N:13231.44
Level/Layer/R.L.	RL:44.69	RL:45.98	RL:47.64	RL:45.58	RL:45.88
Layer Depth:	(mm) -	-	-	-	-
Depth Tested:	(mm) 150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> )	2.12	2.01	1.93	1.93	1.97
Field Dry Density:	(t/m <sup>3</sup> )	1.90	1.81	1.71	1.76	1.78
Retained Oversize (Wet basis):	(%)	2% on 19.0mm	4% on 19.0mm	5% on 19.0mm	1% on 19.0mm	1% on 19.0mm
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content:	(%)	11.5	11.0	13.0	9.5	10.5
Adjusted Lab OMC:	(%)	11.8	10.2	12.4	10.2	11.0
Fraction Tested:		Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density:	(t/m <sup>3</sup> )	2.14	2.05	2.00	2.00	2.07
Adjusted Lab Max CWD:	(t/m <sup>3</sup> )	2.15	2.06	2.02	2.01	2.07
Compactive Effort:		Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation	(%)	At OMC	0.5% Wetter than OMC	1.0% Wetter than OMC	0.5% Drier than OMC	0.5% Drier than OMC
Moisture Ratio	(%)	99.0	106.5	106.5	93.5	96.0
Density Ratio	(%)	99.0	97.5	95.5	96.0	95.0

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	95.7	5	96.58	1.50	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation &amp; Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 09/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:



 A. Lenkeit  
 Approved Signatory



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**Compaction Control Test Report (Nuclear Gauge & Hilf)** Page: 1 of 1

Client:	BMD Urban Pty Ltd	Report No:	17
Client Address:	1 Sandpiper Ave, Port of Brisbane QLD 4178	Report Date:	16/12/2022
Project:	Aurora Stage 4	Project No:	1322
Component:	Bulk Earthworks - Level 1	Test Request:	
Lot Number:		ITP/PCP:	

**Sample Information & Location**

Sample Number:	76028	76029	76030	76031	76032
Field Test Number:	1	2	3	4	5
Date - Field Tested:	5/12/2022	5/12/2022	5/12/2022	5/12/2022	5/12/2022
Time - Field Tested:	1300	1305	1310	1315	1320
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	Lot 427	Lot 426	Lot 425	Lot 437	Lot 436
Location/Chainage/Easting: (m)	10m off Northern Boundary	3m off Northern Boundary	11m off Northern Boundary	8m off Northern Boundary	6m off Northern Boundary
Position/Offset/Northing: (m)	21m off Eastern Boundary	25m off Eastern Boundary	10m off Eastern Boundary	12m off Eastern Boundary	9m off Eastern Boundary
Level/Layer/R.L.	RL:41.4	RL:42.7	RL:43.2	RL:43.0	RL:42.7
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density: (t/m <sup>3</sup> )	2.10	2.07	2.09	2.11	2.11
Field Dry Density: (t/m <sup>3</sup> )	1.91	1.91	1.92	1.94	1.93
Retained Oversize (Wet basis): (%)	3% on 19.0mm	2% on 19.0mm	3% on 19.0mm	3% on 19.0mm	1% on 19.0mm
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content: (%)	10.0	8.5	8.5	8.5	9.0
Adjusted Lab OMC: (%)	11.1	9.8	10.3	10.0	10.6
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density: (t/m <sup>3</sup> )	2.11	2.13	2.15	2.14	2.10
Adjusted Lab Max CWD: (t/m <sup>3</sup> )	2.12	2.13	2.15	2.14	2.11
Compactive Effort:	Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation (%)	1.5% Drier than OMC	1.5% Drier than OMC	2.0% Drier than OMC	1.5% Drier than OMC	1.5% Drier than OMC
Moisture Ratio (%)	88.0	86.5	82.0	86.0	85.5
Density Ratio (%)	99.0	97.0	97.0	98.5	100.0

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	97.6	5	98.30	1.31	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, Cl 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in NATA endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 14/12/2022

	Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.	
	Accreditation number: 19902	

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**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks - Level 1  
 Lot Number:

Report No: **26**  
 Report Date: 21/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	76257	76258	76259	76260	76261
Field Test Number:	1	2	3	4	5
Date - Field Tested:	6/12/2022	6/12/2022	6/12/2022	6/12/2022	6/12/2022
Time - Field Tested:	1005	1015	1020	1025	1030
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting: (m)	E:5286.7	E:5318.5	E:5289.3	E:5319.4	E:5333.5
Position/Offset/Northing: (m)	N:13204.4	N:13199.9	N:13211.2	N:13196.2	N:13205.9
Level/Layer/R.L.	RL:47.5	RL:48.8	RL:47.2	RL:48.0	RL:47.9
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density: (t/m <sup>3</sup> )	2.15	2.07	2.06	2.16	2.15
Field Dry Density: (t/m <sup>3</sup> )	1.98	1.88	1.89	1.96	1.96
Retained Oversize (Wet basis): (%)	3% on 19.0mm	3% on 19.0mm	2% on 19.0mm	3% on 19.0mm	7% on 19.0mm
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content: (%)	8.5	10.5	9.5	10.5	9.5
Adjusted Lab OMC: (%)	8.9	12.4	11.2	12.3	11.0
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density: (t/m <sup>3</sup> )	2.15	2.11	2.13	2.11	2.18
Adjusted Lab Max CWD: (t/m <sup>3</sup> )	2.16	2.12	2.14	2.12	2.19
Compactive Effort:	Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation (%)	<b>0.5% Drier than OMC</b>	<b>2.0% Drier than OMC</b>	<b>2.0% Drier than OMC</b>	<b>2.0% Drier than OMC</b>	<b>1.5% Drier than OMC</b>
Moisture Ratio (%)	<b>96.5</b>	<b>84.0</b>	<b>83.5</b>	<b>84.0</b>	<b>85.0</b>
Density Ratio (%)	<b>99.5</b>	<b>97.5</b>	<b>96.5</b>	<b>102.0</b>	<b>98.0</b>

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	<b>97.5</b>	5	98.66	2.11	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	-2	<b>83.3</b>	5	86.50	5.52	0.572
Maximum (%)	2	<b>89.7</b>	5	86.50	5.52	0.572

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, Cl 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 12/12/2022 to 13/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:

K. Wesener  
Approved Signatory

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**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks - Level 1  
 Lot Number:

Report No: 27  
 Report Date: 21/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	76294	76295	76296	76297	76298
Field Test Number:	1	2	3	4	5
Date - Field Tested:	6/12/2022	6/12/2022	6/12/2022	6/12/2022	6/12/2022
Time - Field Tested:	1005	1015	1020	1025	1030
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting: (m)	E:5280.4	E:5319.2	E:5289.9	E:5326.3	E:5334.2
Position/Offset/Northing: (m)	N:13219.6	N:13200.1	N:13217.6	N:13198.4	N:13209.4
Level/Layer/R.L.	RL:47.9	RL:49.4	RL:47.8	RL:48.5	RL:48.6
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density: (t/m <sup>3</sup> )	2.15	2.07	2.06	2.16	2.15
Field Dry Density: (t/m <sup>3</sup> )	1.97	1.89	1.90	1.96	1.98
Retained Oversize (Wet basis): (%)	2% on 19.0mm	6% on 19.0mm	5% on 19.0mm	2% on 19.0mm	5% on 19.0mm
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content: (%)	9.0	9.5	8.5	10.0	8.5
Adjusted Lab OMC: (%)	10.5	11.6	10.7	11.6	10.2
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density: (t/m <sup>3</sup> )	2.14	2.15	2.14	2.12	2.21
Adjusted Lab Max CWD: (t/m <sup>3</sup> )	2.14	2.17	2.15	2.12	2.22
Compactive Effort:	Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation (%)	1.5% Dryer than OMC	2.0% Dryer than OMC	2.0% Dryer than OMC	1.5% Dryer than OMC	1.5% Dryer than OMC
Moisture Ratio (%)	86.5	83.0	81.5	85.5	83.0
Density Ratio (%)	100.5	95.5	96.0	101.5	96.5

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	96.5	5	98.12	2.78	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	-2	82.8	5	83.96	2.05	0.572
Maximum (%)	2	85.1	5	83.96	2.05	0.572

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 12/12/2022 to 13/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:

K. Wesener  
Approved Signatory

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**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks - Level 1  
 Lot Number:

Report No: **24**  
 Report Date: 19/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	76431	76432	76433	76434	76435
Field Test Number:	1	2	3	4	5
Date - Field Tested:	9/12/2022	9/12/2022	9/12/2022	9/12/2022	9/12/2022
Time - Field Tested:	1000	1005	1010	1015	1020
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting:	(m) E:5348.2	E:5345.6	E:5354.7	E:5346.2	E:5349.3
Position/Offset/Northing:	(m) N:13286.0	N:13255.4	N:13221.7	N:13285.9	N:13280.1
Level/Layer/R.L.	RL:43.2	RL:45.0	RL:47.0	RL:43.0	RL:42.7
Layer Depth:	(mm) 0	0	0	0	0
Depth Tested:	(mm) 150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> )	2.07	2.07	2.06	2.07	2.06
Field Dry Density:	(t/m <sup>3</sup> )	1.87	1.89	1.90	1.85	1.87
Retained Oversize (Wet basis):	(%)	5% on 19.0mm	4% on 19.0mm	6% on 19.0mm	5% on 19.0mm	2% on 19.0mm
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content:	(%)	10.5	9.5	9.0	12.0	10.0
Adjusted Lab OMC:	(%)	11.0	11.0	10.4	13.7	11.8
Fraction Tested:		Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density:	(t/m <sup>3</sup> )	2.15	2.05	2.08	2.07	2.07
Adjusted Lab Max CWD:	(t/m <sup>3</sup> )	2.16	2.06	2.10	2.09	2.08
Compactive Effort:		Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation	(%)	<b>0.5% Drier than OMC</b>	<b>1.5% Drier than OMC</b>	<b>1.5% Drier than OMC</b>	<b>1.5% Drier than OMC</b>	<b>1.5% Drier than OMC</b>
Moisture Ratio	(%)	<b>97.0</b>	<b>86.0</b>	<b>85.5</b>	<b>89.5</b>	<b>87.0</b>
Density Ratio	(%)	<b>96.0</b>	<b>100.0</b>	<b>98.0</b>	<b>99.0</b>	<b>99.0</b>

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	<b>97.6</b>	5	98.52	1.53	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	-2	<b>86.2</b>	5	88.92	4.75	0.572
Maximum (%)	2	<b>91.6</b>	5	88.92	4.75	0.572

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 12/12/2022 to 13/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By:

K. Wesener  
Approved Signatory



**ASCT Brisbane South**

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**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 2

Client: BMD Urban Pty Ltd  
 Client Address: 1 Sandpiper Ave, Port of Brisbane QLD 4178  
 Project: Aurora Stage 4  
 Component: Bulk Earthworks - Level 1  
 Lot Number:

Report No: 25  
 Report Date: 21/12/2022  
 Project No: 1322  
 Test Request:  
 ITP/PCP:

**Sample Information & Location**

Sample Number:	76491	76492	76493	76494	76495
Field Test Number:	1	2	3	4	5
Date - Field Tested:	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022
Time - Field Tested:	1000	1005	1010	1015	1020
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting: (m)	E:5339.3	E:5342.8	E:5346.3	E:5348.1	E:5350.0
Position/Offset/Northing: (m)	N:13265.4	N:13255.5	N:13240.4	N:13233.7	N:13220.6
Level/Layer/R.L.	RL:44.9	RL:45.6	RL:46.5	RL:47.3	RL:48.1
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density: (t/m <sup>3</sup> )	2.04	2.14	2.17	2.15	2.07
Field Dry Density: (t/m <sup>3</sup> )	1.83	1.96	1.95	1.95	1.91
Retained Oversize (Wet basis): (%)	4% on 19.0mm	4% on 19.0mm	2% on 19.0mm	7% on 19.0mm	8% on 19.0mm
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content: (%)	11.5	9.0	11.5	10.5	8.5
Adjusted Lab OMC: (%)	11.8	10.4	13.3	12.5	9.9
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density: (t/m <sup>3</sup> )	2.09	2.11	2.09	2.11	2.11
Adjusted Lab Max CWD: (t/m <sup>3</sup> )	2.10	2.12	2.10	2.13	2.12
Compactive Effort:	Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation (%)	0.5% Drier than OMC	1.0% Drier than OMC	2.0% Drier than OMC	2.0% Drier than OMC	1.0% Drier than OMC
Moisture Ratio (%)	96.0	88.5	85.0	84.0	87.0
Density Ratio (%)	97.0	100.5	103.5	101.0	97.5

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	98.5	6	99.75	2.41	0.523
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	-2	84.4	6	87.05	5.04	0.523
Maximum (%)	2	89.7	6	87.05	5.04	0.523

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 14/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By: K. Wesener  
 Approved Signatory



**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 2 of 2

Client:	BMD Urban Pty Ltd	Report No:	<b>25</b>
Client Address:	1 Sandpiper Ave, Port of Brisbane QLD 4178	Report Date:	21/12/2022
Project:	Aurora Stage 4	Project No:	1322
Component:	Bulk Earthworks - Level 1	Test Request:	
Lot Number:		ITP/PCP:	

**Sample Information & Location**

Sample Number:	<b>76496</b>	-	-	-	-
Field Test Number:	6	-	-	-	-
Date - Field Tested:	12/12/2022	-	-	-	-
Time - Field Tested:	1025	-	-	-	-
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	0	-	-	-	-
Location/Chainage/Easting:	(m) E:5341.2	-	-	-	-
Position/Offset/Northing:	(m) N:13269.2	-	-	-	-
Level/Layer/R.L.	RL:44.0	-	-	-	-
Layer Depth:	(mm) -	-	-	-	-
Depth Tested:	(mm) 150	-	-	-	-

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> )	2.08	-	-	-	-
Field Dry Density:	(t/m <sup>3</sup> )	1.92	-	-	-	-
Retained Oversize (Wet basis):	(%)	2% on 19.0mm	-	-	-	-
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	-	-	-	-
Field Moisture Content:	(%)	8.5	-	-	-	-
Adjusted Lab OMC:	(%)	10.1	-	-	-	-
Fraction Tested:		Passing 19.0mm	-	-	-	-
Lab Max Converted Wet Density:	(t/m <sup>3</sup> )	2.10	-	-	-	-
Adjusted Lab Max CWD:	(t/m <sup>3</sup> )	2.11	-	-	-	-
Compactive Effort:		Standard	-	-	-	-

**Relative Compaction & Moisture**

Moisture Variation	(%)	<b>2.0% Dryer than OMC</b>	-	-	-	-
Moisture Ratio	(%)	<b>82.0</b>	-	-	-	-
Density Ratio	(%)	<b>99.0</b>	-	-	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	<b>98.5</b>	6	99.75	2.41	0.523
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	-2	<b>84.4</b>	6	87.05	5.04	0.523
Maximum (%)	2	<b>89.7</b>	6	87.05	5.04	0.523

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 14/12/2022



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902



**ASCT Brisbane South**

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**Compaction Control Test Report (Nuclear Gauge & Hilf)** Page: 1 of 1

Client:	BMD Urban Pty Ltd	Report No:	<b>32</b>
Client Address:	1 Sandpiper Ave, Port of Brisbane QLD 4178	Report Date:	19/01/2023
Project:	Aurora Stage 4	Project No:	1322
Component:	Bulk Earthworks - Level 1	Test Request:	
Lot Number:		ITP/PCP:	

**Sample Information & Location**

Sample Number:	76776	76777	76778	76779	76780
Field Test Number:	1	2	3	4	5
Date - Field Tested:	15/12/2022	15/12/2022	15/12/2022	15/12/2022	15/12/2022
Time - Field Tested:	1000	1005	1010	1015	1020
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting:	(m) E:5332.2	E:5345.6	E:5363.7	E:5328.6	E:5341.2
Position/Offset/Northing:	(m) N:13147.0	N:13193.8	N:13188.2	N:13145.2	N:13194.2
Level/Layer/R.L.	RL:50.4	RL:49.9	RL:50.9	RL:49.7	RL:49.2
Layer Depth:	(mm) -	-	-	-	-
Depth Tested:	(mm) 150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> )	2.11	2.08	2.13	2.08	2.11
Field Dry Density:	(t/m <sup>3</sup> )	1.95	1.89	1.96	1.90	1.92
Retained Oversize (Wet basis):	(%)	1% on 19.0mm	2% on 19.0mm	2% on 19.0mm	3% on 19.0mm	2% on 19.0mm
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content:	(%)	8.5	10.0	8.5	9.5	9.5
Adjusted Lab OMC:	(%)	10.6	12.2	10.3	11.6	11.3
Fraction Tested:		Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density:	(t/m <sup>3</sup> )	2.12	2.11	2.14	2.17	2.13
Adjusted Lab Max CWD:	(t/m <sup>3</sup> )	2.12	2.11	2.14	2.18	2.13
Compactive Effort:		Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation	(%)	<b>2.0% Drier than OMC</b>	<b>2.0% Drier than OMC</b>	<b>2.0% Drier than OMC</b>	<b>2.0% Drier than OMC</b>	<b>1.5% Drier than OMC</b>
Moisture Ratio	(%)	<b>79.5</b>	<b>82.0</b>	<b>81.0</b>	<b>83.0</b>	<b>85.5</b>
Density Ratio	(%)	<b>99.5</b>	<b>98.5</b>	<b>99.5</b>	<b>95.5</b>	<b>99.0</b>

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	<b>97.5</b>	5	98.34	1.54	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Moisture Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 10/01/2023



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By: A. Lenkeit  
 Approved Signatory



**ASCT Brisbane South**

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**Compaction Control Test Report (Nuclear Gauge & Hilf)** Page: 1 of 1

Client:	BMD Urban Pty Ltd	Report No:	<b>37</b>
Client Address:	1 Sandpiper Ave, Port of Brisbane QLD 4178	Report Date:	23/01/2023
Project:	Aurora Stage 4	Project No:	1322
Component:	Bulk Earthworks - Level 1	Test Request:	
Lot Number:		ITP/PCP:	

**Sample Information & Location**

Sample Number:	76870	76871	76872	76873	76874
Field Test Number:	1	2	3	4	5
Date - Field Tested:	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Time - Field Tested:	1005	1015	1020	1030	1035
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting:	(m) E:5318.1	E:5301.0	E:5305.2	E:5322.1	E:5325.2
Position/Offset/Northing:	(m) N:13357.2	N:13362.1	N:13352.1	N:13356.1	N:13354.2
Level/Layer/R.L.	RL:36.0	RL:36.4	RL:36.2	RL:35.8	RL:35.6
Layer Depth:	(mm) -	-	-	-	-
Depth Tested:	(mm) 150	150	150	150	150

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> )	2.05	2.09	2.12	2.10	2.14
Field Dry Density:	(t/m <sup>3</sup> )	1.85	1.91	1.93	1.91	1.95
Retained Oversize (Wet basis):	(%)	5% on 19.0mm	2% on 19.0mm	3% on 19.0mm	1% on 19.0mm	3% on 19.0mm
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content:	(%)	11.0	9.5	9.5	9.5	9.5
Adjusted Lab OMC:	(%)	12.7	11.5	11.5	11.2	10.8
Fraction Tested:		Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm
Lab Max Converted Wet Density:	(t/m <sup>3</sup> )	2.15	2.18	2.20	2.20	2.23
Adjusted Lab Max CWD:	(t/m <sup>3</sup> )	2.16	2.18	2.21	2.20	2.23
Compactive Effort:		Standard	Standard	Standard	Standard	Standard

**Relative Compaction & Moisture**

Moisture Variation	(%)	<b>2.0% Drier than OMC</b>	<b>2.0% Drier than OMC</b>	<b>2.0% Drier than OMC</b>	<b>1.5% Drier than OMC</b>	<b>1.5% Drier than OMC</b>
Moisture Ratio	(%)	<b>85.0</b>	<b>82.0</b>	<b>83.0</b>	<b>86.5</b>	<b>88.0</b>
Density Ratio	(%)	<b>95.0</b>	<b>95.5</b>	<b>96.0</b>	<b>95.5</b>	<b>96.0</b>

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	<b>95.4</b>	5	95.58	0.39	0.572
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Moisture Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 10/01/2023



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By: A. Lenkeit  
 Approved Signatory



**ASCT Brisbane South**

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**Compaction Control Test Report (Nuclear Gauge & Hilf)** Page: 1 of 1

Client:	BMD Urban Pty Ltd	Report No:	<b>38</b>
Client Address:	1 Sandpiper Ave, Port of Brisbane QLD 4178	Report Date:	24/01/2023
Project:	Aurora Stage 4	Project No:	1322
Component:	Bulk Earthworks - Level 1	Test Request:	
Lot Number:		ITP/PCP:	

**Sample Information & Location**

Sample Number:	77033	77034	77035	-	-
Field Test Number:	1	2	3	-	-
Date - Field Tested:	20/12/2022	20/12/2022	20/12/2022	-	-
Time - Field Tested:	1000	1005	1010	-	-
Material Source / Type:	On Site - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting:	(m) E:5308.3	E:5316.3	E:5324.6	-	-
Position/Offset/Northing:	(m) N:13344.9	N:13348.8	N:13353.6	-	-
Level/Layer/R.L.	RL:38.3	RL:38.3	RL:38.2	-	-
Layer Depth:	(mm) -	-	-	-	-
Depth Tested:	(mm) 150	150	150	-	-

**Field & Laboratory Results**

Field Wet Density:	(t/m <sup>3</sup> ) 2.17	2.17	2.15	-	-
Field Dry Density:	(t/m <sup>3</sup> ) 1.98	1.99	1.97	-	-
Retained Oversize (Wet basis):	(%) 3% on 19.0mm	3% on 19.0mm	1% on 19.0mm	-	-
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	-	-
Field Moisture Content:	(%) 9.0	9.5	9.0	-	-
Adjusted Lab OMC:	(%) 11.2	11.5	11.2	-	-
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	-	-
Lab Max Converted Wet Density:	(t/m <sup>3</sup> ) 2.21	2.22	2.20	-	-
Adjusted Lab Max CWD:	(t/m <sup>3</sup> ) 2.21	2.22	2.20	-	-
Compactive Effort:	Standard	Standard	Standard	-	-

**Relative Compaction & Moisture**

Moisture Variation	(%) <b>2.0% Drier than OMC</b>	<b>2.0% Drier than OMC</b>	<b>2.0% Drier than OMC</b>	-	-
Moisture Ratio	(%) <b>81.5</b>	<b>81.0</b>	<b>81.5</b>	-	-
Density Ratio	(%) <b>98.0</b>	<b>98.0</b>	<b>98.0</b>	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	<b>97.9</b>	3	97.90	0.00	0.816
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

**Test Methods Used.**

AS1289.1.1 (Prep), AS1289.5.4.1 - (Moisture Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS 1289.1.2.1, CI 6.4(b) (Sampling), CV calculations derived from Austroads NTR-09 publication (Not Included in Nata endorsement)

**Remarks Regarding the Lot.**

Laboratory testing 10/01/2023



Accredited for compliance with ISO/IEC 17025 - Testing. The results relate only to the items sampled/tested.

Accreditation number: 19902

Approved By: A. Lenkeit  
 Approved Signatory

# **Appendix C**

## **Individual Lot Certificates**



## ASCT Brisbane South

PO Box 1232  
PARK RIDGE QLD 4125  
ABN: 28 608 830 306  
ACN: 608 830 306  
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Email: [brisbane.south@asct.com.au](mailto:brisbane.south@asct.com.au)  
Web: [www.asct.com.au](http://www.asct.com.au)

14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 401

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 401 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **401** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

A handwritten signature in blue ink, appearing to read 'Jason Mckenna', with a stylized flourish at the end.

Jason Mckenna  
Laboratory Manager

ASCT Brisbane South  
[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)

14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 402

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

## CERTIFICATE OF CONTROLLED FILLING

### LOT 402 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **402** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully



Jason Mckenna  
Laboratory Manager

ASCT Brisbane South  
[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)

14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 403

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

## CERTIFICATE OF CONTROLLED FILLING

### LOT 403 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **403** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully



Jason Mckenna  
Laboratory Manager

ASCT Brisbane South  
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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 404

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 404 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **404** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

ASCT Brisbane South  
[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)



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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 405

BMD Urban Pty Ltd  
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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 405 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **405** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

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[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)



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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 406

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 406 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **406** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

ASCT Brisbane South  
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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 407

BMD Urban Pty Ltd  
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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 407 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **407** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Yours faithfully

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 408

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 408 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **408** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Yours faithfully

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Jason Mckenna  
Laboratory Manager

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[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)

14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 409

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

## CERTIFICATE OF CONTROLLED FILLING

### LOT 409 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **409** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 410

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 410– Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **410** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 411

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 411– Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **411** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Yours faithfully

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 412

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 412– Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **412** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 413

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 413– Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **413** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 414

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 414 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **414** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 415

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 415 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **415** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 416

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
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# CERTIFICATE OF CONTROLLED FILLING

## LOT 416 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **416** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 417

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 417 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **417** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 418

BMD Urban Pty Ltd  
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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 418 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **418** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Yours faithfully

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 419

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Manly QLD 4179

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## LOT 419 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **419** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

A handwritten signature in blue ink, appearing to read 'Jason Mckenna', with a stylized flourish at the end.

Jason Mckenna  
Laboratory Manager

ASCT Brisbane South  
[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)



14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 420

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

## CERTIFICATE OF CONTROLLED FILLING

### LOT 420 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **420** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully



Jason Mckenna  
Laboratory Manager

ASCT Brisbane South  
[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)



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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 421

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 421 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **421** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 422

BMD Urban Pty Ltd  
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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 422 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **422** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 423

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 423 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **423** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Yours faithfully

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Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 424

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 424 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **424** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 425

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 425 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **425** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

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[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)



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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 426

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 426 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **426** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 427

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 427 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **427** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

ASCT Brisbane South  
[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)



14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 428

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

## CERTIFICATE OF CONTROLLED FILLING

### LOT 428 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **428** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully



Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 429

BMD Urban Pty Ltd  
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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 429 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **429** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 430

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 430 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **430** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Yours faithfully

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 431

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 431 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **431** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Yours faithfully

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 432

BMD Urban Pty Ltd  
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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 432 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **432** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 433

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 433 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **433** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 434

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 434 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **434** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Yours faithfully

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 435

BMD Urban Pty Ltd  
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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 435 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **435** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Yours faithfully

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Jason Mckenna  
Laboratory Manager

ASCT Brisbane South  
[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)





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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 436

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 436 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **436** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 437

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 437 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **437** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 438

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 438 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **438** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 439

BMD Urban Pty Ltd  
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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 439 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **439** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 440

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 440 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **440** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 441

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 441 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 442

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

## CERTIFICATE OF CONTROLLED FILLING

### LOT 442 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **442** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 443

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 443 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **443** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 444

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## LOT 444 – Aurora Stage 4, Daleys Road Ripley

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 445

BMD Urban Pty Ltd  
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# CERTIFICATE OF CONTROLLED FILLING

## LOT 445 – Aurora Stage 4, Daleys Road Ripley

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Fill was placed on the allotment between 14/11/22 and 20/12/22.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 446

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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 446 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **446** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 447

BMD Urban Pty Ltd  
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## LOT 447 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **447** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 448

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 448 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **448** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 449

BMD Urban Pty Ltd  
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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 449 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **449** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 450

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Manly QLD 4179

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Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **450** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 451

BMD Urban Pty Ltd  
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Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 451 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **451** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 452

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 452 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **452** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

A handwritten signature in blue ink, appearing to read 'Jason Mckenna', with a stylized flourish at the end.

Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 453

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 453 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **453** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 461

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 461 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **461** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 833

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 833 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **833** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 834

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 834 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **834** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 835

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 835 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **835** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 836

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 836 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **836** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 837

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 837 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **837** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Laboratory Manager

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 838

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 838 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **838** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Jason Mckenna  
Laboratory Manager

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[jason.mckenna@asct.com.au](mailto:jason.mckenna@asct.com.au)

14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 839

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

## CERTIFICATE OF CONTROLLED FILLING

### LOT 839 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **839** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully



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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 840

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 840 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **840** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 841

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 841 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **841** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 842

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

## CERTIFICATE OF CONTROLLED FILLING

### LOT 842 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **842** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully



Jason Mckenna  
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14<sup>th</sup> March 2023  
Ref No: 1322\_Level 1\_Aurora Stage 4\_Lot 843

BMD Urban Pty Ltd  
Level 1, 25 Cambridge Parade  
Manly QLD 4179

# CERTIFICATE OF CONTROLLED FILLING

## LOT 843 – Aurora Stage 4, Daleys Road Ripley

Australian Soil and Concrete Testing was commissioned by BMD Urban Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 '*Guidelines on earthworks for commercial and residential developments*'.

Fill was placed on the allotment between 14/11/22 and 20/12/22.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **843** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 '*Residential Slabs & Footings*'.

Full details of the inspection and testing conducted is included in our report Ref No: **1322\_Level 1\_Aurora Stage 4**, Dated 14<sup>th</sup> March 2023.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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Laboratory Manager

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