



RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au



Level One Report

Naric Civil Pty Ltd

Riverbank Estate Stage 16B

Market Drive, Caboolture South



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au



Contents

1	Scope	3
2	Foundation Preparation	4
2.1	Stripping of Area	4
2.2	Removal of Unsuitable Materials	4
3	Controlled Filling	4
4	Compaction Control Operations.....	4
5	Conclusion	5
6	Limitations	6
	Appendix A	7
	Site Plan	7
	Appendix B	9
	Testing Summary	9
	Appendix C	22
	Individual Lot Certificates.....	22

October 2021

Naric Civil Pty Ltd
P.O. Box 150
Redbank Qld 4301

Re: Riverbank Estate Stage 16B – Market Drive, Caboolture South

Geotechnical Testing & Certification.

1 Scope

Ryan & Associates Geotechnical was commissioned by Naric Civil Pty Ltd to provide geotechnical inspections, testing and certification of the filling earthworks at the above-mentioned project.

The project was assumed to be a Residential development as per “AS3798 – 2007 Guidelines on Earthworks for Commercial and Residential Developments to Level one requirement as outlined in Section 8”.

The development comprises of 31 proposed Lots being constructed on previously developed land, controlled filling works has been completed to Lots 1337 – 1367. Refer to Appendix A “Site Plans” drawing number 19-000817.2 - 200.

Ryan & Associates Geotechnical maintained a site presence during the works in accordance with AS3798 – 2007 Level 1. Appendix B – Testing Summary, of this report, contains the testing summary of all testing undertaken with achieved compaction densities.

Site inspections and compaction control testing was carried out as work progressed, with records compiled on all aspects of the earthworks.

This level one report does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au



2 Foundation Preparation

2.1 Stripping of Area

All existing topsoil materials were stripped prior to the commencement of filling operations.

Inspections prior to the placement of fill revealed in-situ materials consisting of Silty Clay.

Proof rolling showed no movement under construction plant prior to filling.

2.2 Removal of Unsuitable Materials

Unsuitable materials were required to be removed prior to proof rolling and placement of fill.

3 Controlled Filling

Fill used consisted of on-site materials. Fills were placed using an 815 Compactor in layers not exceeding 0.2m. The fill zones were compacted using an 815 Pad Foot Compactor.

4 Compaction Control Operations

Compliance testing of fill operations was performed by Ryan & Associates Geotechnical between the Months of October 2020 to April 2021.

The test results show, where applicable, a Dry Density Ratio of 95% standard or greater was consistently achieved for testing performed on fill materials.

Testing results are shown in the Testing Summary; refer to Appendix B – Testing Summary of this report.

Individual Lot Certificates for the controlled filling works to Lots 1337 – 1367 have been included within this report, refer to Appendix C.



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au



5 Conclusion

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in accordance with good engineering practice and can be considered controlled fill. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”, Clause 8.2.

RYAN & ASSOCIATES
Geotechnical Pty Ltd.

Stephen Roberts
Laboratory Manager



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au



6 Limitations

This level one certification report verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable. As far as could be determined the earthworks at the time of completion have been carried out to meet the requirements of the drawing and specification.

This level one report makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one report only covers earthworks filling as detailed in the earth works drawings.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches, retaining walls bridging layers, top soil or any pavements.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 **Fax** (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 **Fax** (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Appendix A

Site Plan

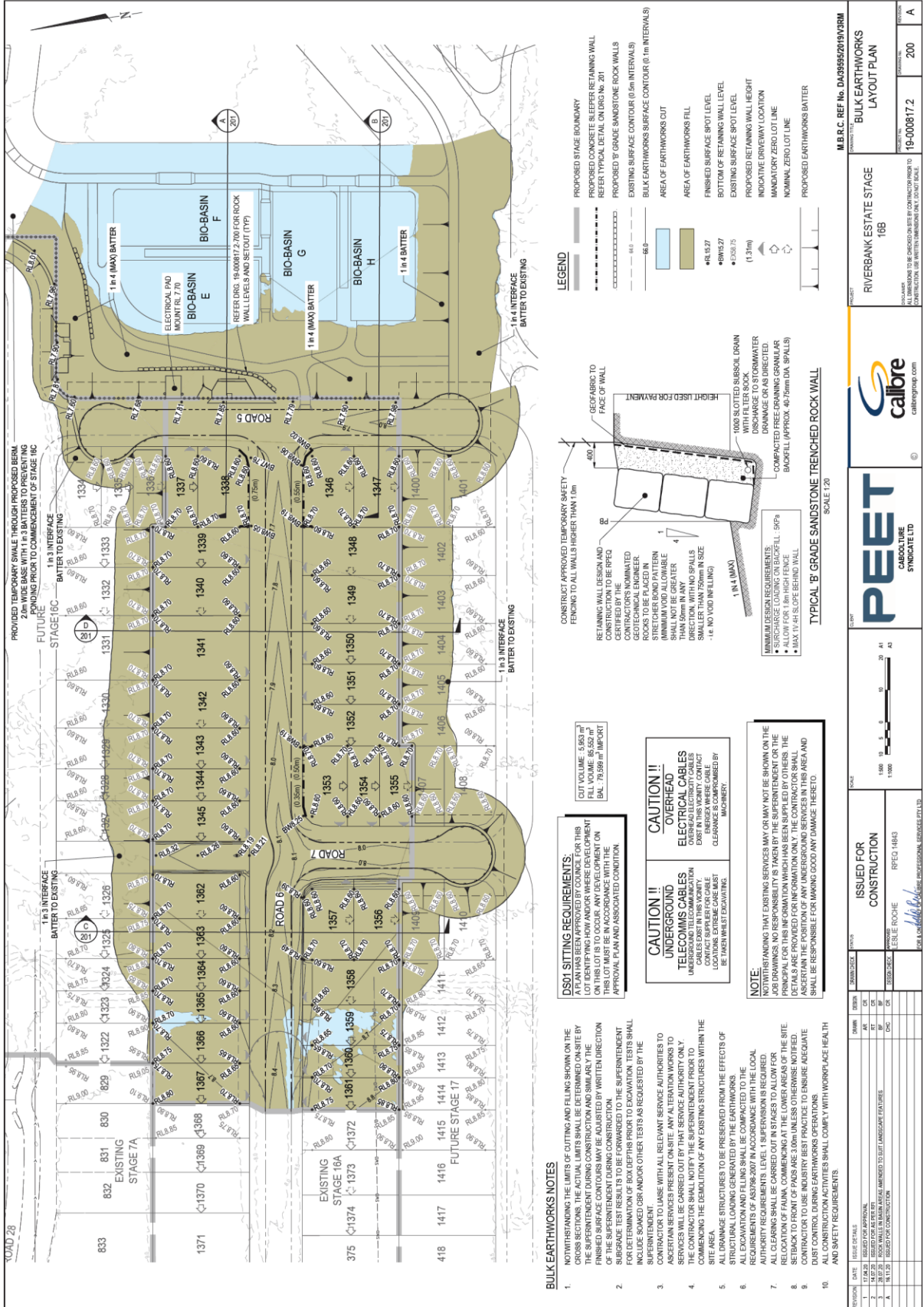


ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au



M.B.R.C. REF No. DA03955/2019/VRM		RIVERBANK ESTATE STAGE 10B		BULK EARTHWORKS LAYOUT PLAN	
PROJECT		SHEET		SCALE	
ISSUED FOR CONSTRUCTION		RPEQ 14843		DATE	
DATE		ISSUED FOR APPROVAL		DATE	
1. 14/10/20		ISSUED FOR APPROVAL		DATE	
2. 14/10/20		ISSUED FOR APPROVAL		DATE	
3. 14/10/20		ISSUED FOR APPROVAL		DATE	
4. 14/10/20		ISSUED FOR APPROVAL		DATE	
5. 14/10/20		ISSUED FOR APPROVAL		DATE	
6. 14/10/20		ISSUED FOR APPROVAL		DATE	
7. 14/10/20		ISSUED FOR APPROVAL		DATE	
8. 14/10/20		ISSUED FOR APPROVAL		DATE	
9. 14/10/20		ISSUED FOR APPROVAL		DATE	
10. 14/10/20		ISSUED FOR APPROVAL		DATE	
11. 14/10/20		ISSUED FOR APPROVAL		DATE	
12. 14/10/20		ISSUED FOR APPROVAL		DATE	
13. 14/10/20		ISSUED FOR APPROVAL		DATE	
14. 14/10/20		ISSUED FOR APPROVAL		DATE	
15. 14/10/20		ISSUED FOR APPROVAL		DATE	
16. 14/10/20		ISSUED FOR APPROVAL		DATE	
17. 14/10/20		ISSUED FOR APPROVAL		DATE	
18. 14/10/20		ISSUED FOR APPROVAL		DATE	
19. 14/10/20		ISSUED FOR APPROVAL		DATE	
20. 14/10/20		ISSUED FOR APPROVAL		DATE	
21. 14/10/20		ISSUED FOR APPROVAL		DATE	
22. 14/10/20		ISSUED FOR APPROVAL		DATE	
23. 14/10/20		ISSUED FOR APPROVAL		DATE	
24. 14/10/20		ISSUED FOR APPROVAL		DATE	
25. 14/10/20		ISSUED FOR APPROVAL		DATE	
26. 14/10/20		ISSUED FOR APPROVAL		DATE	
27. 14/10/20		ISSUED FOR APPROVAL		DATE	
28. 14/10/20		ISSUED FOR APPROVAL		DATE	
29. 14/10/20		ISSUED FOR APPROVAL		DATE	
30. 14/10/20		ISSUED FOR APPROVAL		DATE	
31. 14/10/20		ISSUED FOR APPROVAL		DATE	
32. 14/10/20		ISSUED FOR APPROVAL		DATE	
33. 14/10/20		ISSUED FOR APPROVAL		DATE	
34. 14/10/20		ISSUED FOR APPROVAL		DATE	
35. 14/10/20		ISSUED FOR APPROVAL		DATE	
36. 14/10/20		ISSUED FOR APPROVAL		DATE	
37. 14/10/20		ISSUED FOR APPROVAL		DATE	
38. 14/10/20		ISSUED FOR APPROVAL		DATE	
39. 14/10/20		ISSUED FOR APPROVAL		DATE	
40. 14/10/20		ISSUED FOR APPROVAL		DATE	
41. 14/10/20		ISSUED FOR APPROVAL		DATE	
42. 14/10/20		ISSUED FOR APPROVAL		DATE	
43. 14/10/20		ISSUED FOR APPROVAL		DATE	
44. 14/10/20		ISSUED FOR APPROVAL		DATE	
45. 14/10/20		ISSUED FOR APPROVAL		DATE	
46. 14/10/20		ISSUED FOR APPROVAL		DATE	
47. 14/10/20		ISSUED FOR APPROVAL		DATE	
48. 14/10/20		ISSUED FOR APPROVAL		DATE	
49. 14/10/20		ISSUED FOR APPROVAL		DATE	
50. 14/10/20		ISSUED FOR APPROVAL		DATE	
51. 14/10/20		ISSUED FOR APPROVAL		DATE	
52. 14/10/20		ISSUED FOR APPROVAL		DATE	
53. 14/10/20		ISSUED FOR APPROVAL		DATE	
54. 14/10/20		ISSUED FOR APPROVAL		DATE	
55. 14/10/20		ISSUED FOR APPROVAL		DATE	
56. 14/10/20		ISSUED FOR APPROVAL		DATE	
57. 14/10/20		ISSUED FOR APPROVAL		DATE	
58. 14/10/20		ISSUED FOR APPROVAL		DATE	
59. 14/10/20		ISSUED FOR APPROVAL		DATE	
60. 14/10/20		ISSUED FOR APPROVAL		DATE	
61. 14/10/20		ISSUED FOR APPROVAL		DATE	
62. 14/10/20		ISSUED FOR APPROVAL		DATE	
63. 14/10/20		ISSUED FOR APPROVAL		DATE	
64. 14/10/20		ISSUED FOR APPROVAL		DATE	
65. 14/10/20		ISSUED FOR APPROVAL		DATE	
66. 14/10/20		ISSUED FOR APPROVAL		DATE	
67. 14/10/20		ISSUED FOR APPROVAL		DATE	
68. 14/10/20		ISSUED FOR APPROVAL		DATE	
69. 14/10/20		ISSUED FOR APPROVAL		DATE	
70. 14/10/20		ISSUED FOR APPROVAL		DATE	
71. 14/10/20		ISSUED FOR APPROVAL		DATE	
72. 14/10/20		ISSUED FOR APPROVAL		DATE	
73. 14/10/20		ISSUED FOR APPROVAL		DATE	
74. 14/10/20		ISSUED FOR APPROVAL		DATE	
75. 14/10/20		ISSUED FOR APPROVAL		DATE	
76. 14/10/20		ISSUED FOR APPROVAL		DATE	
77. 14/10/20		ISSUED FOR APPROVAL		DATE	
78. 14/10/20		ISSUED FOR APPROVAL		DATE	
79. 14/10/20		ISSUED FOR APPROVAL		DATE	
80. 14/10/20		ISSUED FOR APPROVAL		DATE	
81. 14/10/20		ISSUED FOR APPROVAL		DATE	
82. 14/10/20		ISSUED FOR APPROVAL		DATE	
83. 14/10/20		ISSUED FOR APPROVAL		DATE	
84. 14/10/20		ISSUED FOR APPROVAL		DATE	
85. 14/10/20		ISSUED FOR APPROVAL		DATE	
86. 14/10/20		ISSUED FOR APPROVAL		DATE	
87. 14/10/20		ISSUED FOR APPROVAL		DATE	
88. 14/10/20		ISSUED FOR APPROVAL		DATE	
89. 14/10/20		ISSUED FOR APPROVAL		DATE	
90. 14/10/20		ISSUED FOR APPROVAL		DATE	
91. 14/10/20		ISSUED FOR APPROVAL		DATE	
92. 14/10/20		ISSUED FOR APPROVAL		DATE	
93. 14/10/20		ISSUED FOR APPROVAL		DATE	
94. 14/10/20		ISSUED FOR APPROVAL		DATE	
95. 14/10/20		ISSUED FOR APPROVAL		DATE	
96. 14/10/20		ISSUED FOR APPROVAL		DATE	
97. 14/10/20		ISSUED FOR APPROVAL		DATE	
98. 14/10/20		ISSUED FOR APPROVAL		DATE	
99. 14/10/20		ISSUED FOR APPROVAL		DATE	
100. 14/10/20		ISSUED FOR APPROVAL		DATE	



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 **Fax** (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 **Fax** (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Appendix B

Testing Summary



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MDD (mm)	OMC (%)	Oversize Wet (%)	Oversize Dry (%)	Oversize Density (g/cm ³)	Dry Density (g/cm ³)	Field MC (%)	Density Ratio (%)	Report No.
N24003	R20-141	11/10/2020	Lot 1365, Front, 1.5m Below F.L.		150	150	1.719	19.8	0	0		1.741	19.1	101.3	
N24005	R20-141	6/10/2020	Lot 1365/1364 Boundary, Front, 1.0m Below F.L.		150	150	1.868	13.6	0	0		1.806	11.6	96.7	
N24006	R20-141	6/10/2020	Lot 1345/1344 Boundary, Centre, 1.0m Below F.L.		150	150	1.839	13.4	0	0		1.813	11.6	95.9	
N24007	R20-141	6/10/2020	Lot 1342, Centre, 1.0m Below F.L.		150	150	1.886	13.1	0	0		1.793	11.3	95.1	
N24010	R20-141	7/10/2020	Lot 1365, Front, 0.5m Below F.L.		150	150	1.891	13.4	0	0		1.81	11.4	95.7	
N24011	R20-141	8/10/2020	Centre of Easement Between Lot 1364 & 1345, 0.5m Below F.L.		150	150	1.895	13	0	0		1.846	11.3	97.4	
N24012	R20-141	8/10/2020	Lot 1342, Front, 0.5m Below F.L.		150	150	1.755	19.5	0	0		1.726	19	98.4	
N24014	R20-141	9/10/2020	Lot 1364, Rear, F.L.		150	150	1.742	19.5	0	0		1.697	17.6	97.4	
N24015	R20-141	12/10/2020	Lot 1345, Front, F.L.		150	150	1.749	19.5	0	0		1.762	19	100.7	
N24016	R20-141	12/10/2020	Lot 1342, Centre, F.L.		150	150	1.743	19.6	0	0		1.752	19.1	100.5	
N25057	R20-141	26/11/2020	Lot 1354 / 1353 Boundary, 4m Below F.L.		150	150	1.507	25.1	0	0		1.472	23.4	97.7	
N25058	R20-141	26/11/2020	Lot 1352, 4m Below F.L.		150	150	1.526	24.6	0	0		1.477	22.8	96.8	
N25059	R20-141	27/11/2020	Refer to attached plan, Test #1, 3.5m Below F.L.		150	150	1.517	25.1	0	0		1.481	23.2	97.6	
N25060	R20-141	27/11/2020	Refer to attached plan, Test #2, 3.5m Below F.L.		150	150	1.501	24.9	0	0		1.486	23.3	99	
N25260	R20-141	30/11/2020	Refer to attached plan, Test #1, Lot 1350, 3m Below F.L.		150	150	1.739	19.8	0	0		1.728	18.2	99.4	
N25261	R20-141	30/11/2020	Refer to attached plan, Test #2, Lot 1356 / 1357, 3m Below F.L.		150	150	1.735	19.7	0	0		1.705	19	98.3	



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
 4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 **Fax** (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
 9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 **Fax** (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MDO (t/m ³)	OMC (%)	Oversize Wet (%)	Oversize Dry (%)	Oversize Density (t/m ³)	Dry Density (t/m ³)	Field I _{MC} (%)	Density Ratio (%)	Report No.
N25287	R20-141	1/12/2020	Location #1, Refer to attached plan, 3.0m Below finish level		150	150	1.795	15.9	0	0	1.783	1.48	14.8	99.3	
N25288	R20-141	1/12/2020	Location #2, Refer to attached plan, 3.0m Below finish level		150	150	1.806	15.6	0	0	1.801	1.48	14.8	99.7	
N25293	R20-141	2/12/2020	Location #1, refer to attached plan, 2.5m below finish level		150	150	1.803	15.4	0	0	1.803	1.44	14.4	100	
N25294	R20-141	2/12/2020	Location #2, refer to attached plan, 2.5m below finish level		150	150	1.814	15.9	0	0	1.809	1.48	14.8	99.7	
N25293	R20-141	3/12/2020	Refer to attached plan, Test #1, 2.5m B.F.L.		150	150	1.57	24	0	0	1.513	23.1	23.1	96.4	
N25284	R20-141	3/12/2020	Refer to attached plan, Test #2, 2.5m B.F.L.		150	150	1.576	24.3	0	0	1.518	23.4	23.4	96.3	
N25321	R20-141	7/12/2020	Refer to attached plan, Test #1, 2m Below F.L.		150	150	1.647	22.6	0	0	1.655	21.1	21.1	100.5	
N25322	R20-141	7/12/2020	Refer to attached plan, Test #2, 2m Below F.L.		150	150	1.649	22.9	0	0	1.655	21.4	21.4	100.4	
N25488	R20-141	10/12/2020	Refer to attached plan, Test #1, 1.5m Below F.L.		150	150	1.663	23.5	0	0	1.67	22.4	22.4	100.4	
N25489	R20-141	10/12/2020	Refer to attached plan, Test #2, 1.5m Below F.L.		150	150	1.653	23.6	0	0	1.65	23.1	23.1	99.8	
N25715	R20-141	12/01/2021	Refer to attached plan, Test #1, 1.4m Below F.L.		150	150	1.505	27.4	0	0	1.515	25.4	25.4	100.7	
N25716	R20-141	12/01/2021	Refer to attached plan, Test #2, 1.4m Below F.L.		150	150	1.502	26.8	0	0	1.524	25.4	25.4	101.5	
N25719	R20-141	13/01/2021	Refer to attached plan, Test #1, 1.3m Below F.L.		150	150	1.514	27.1	0	0	1.565	25.7	25.7	103.4	
N25720	R20-141	13/01/2021	Refer to attached plan, Test #2, 1.3m Below F.L.		150	150	1.489	27.4	0	0	1.551	27.3	27.3	104.2	
N25717	R20-141	14/01/2021	Refer to attached plan, Test #1, 1.7m Below F.L.		150	150	1.635	21.5	0	0	1.655	21.4	21.4	101.2	
N25718	R20-141	14/01/2021	Refer to attached plan, Test #2, 1.7m Below F.L.		150	150	1.635	21.8	0	0	1.654	21.4	21.4	101.2	
N25782	R20-141	15/01/2021	Refer to attached plan, Test #1, 1.3m Below F.L.		150	150	1.52	26.3	0	0	1.591	26.3	26.3	104.7	
N25783	R20-141	15/01/2021	Refer to attached plan, Test #2, 1.3m Below F.L.		150	150	1.52	26.2	0	0	1.593	26	26	104.1	
N25784	R20-141	18/01/2021	Refer to attached plan, Test #1, 0.5m Below F.L.		150	150	1.491	30	0	0	1.522	29.9	29.9	102.1	
N25785	R20-141	18/01/2021	Refer to attached plan, Test #2, 0.5m Below F.L.		150	150	1.48	31	0	0	1.497	30.1	30.1	101.2	

Page 14



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MDD (t/m ³)	OMC (%)	Oversize Wet (%)	Oversize Dry (%)	Oversize Density (t/m ³)	Dry Density (t/m ³)	Field MC (%)	Density Ratio (%)	Report No.
N25890	R20-141	21/01/2021	Lot 1348, F.L.		150	150	1.704	17.2	0	0	1.899	1.704	17.1	99.7	
N25891	R20-141	21/01/2021	Lot 1349, F.L.		150	150	1.716	17.2	0	0	1.705	1.716	16.6	99.4	
N26124	R20-141	8/02/2021	Lot 1368 / 1367 Boundary, 4.5m Below F.L.		150	150	1.903	13.1	0	0	1.861	1.903	11.6	97.8	
N26125	R20-141	8/02/2021	Lot 1366 / 1365 Boundary, 4m Below F.L.		150	150	1.969	12.9	0	0	1.879	1.969	11.7	95.4	
N26126	R20-141	8/02/2021	Lot 1365 / 1364 Boundary, 3.5m Below F.L.		150	150	1.912	12.2	0	0	1.865	1.912	11.9	97.5	
N26127	R20-141	8/02/2021	Lot 1365 / 1364 Boundary, 3m Below F.L.		150	150	2.124	11.9	0	0	2.02	2.124	10	95.1	
N26162	R20-141	9/02/2021	Lot 1363, F.L.		150	150	1.875	16.3	0	0	1.851	1.875	14.4	98.7	
N26163	R20-141	9/02/2021	Lot 1362, F.L.		150	150	1.897	16.7	0	0	1.833	1.897	15.7	96.6	
N26164	R20-141	9/02/2021	Lot 1361, F.L.		150	150	1.87	16	0	0	1.832	1.87	15.7	98	
N26165	R20-141	9/02/2021	Lot 1360, F.L.		150	150	1.875	16.1	0	0	1.84	1.875	15.1	98.1	
N26166	R20-141	9/02/2021	Lot 1359, F.L.		150	150	1.868	15.9	0	0	1.83	1.868	15.3	98	
N26167	R20-141	9/02/2021	Lot 1358, F.L.		150	150	1.888	15.6	0	0	1.841	1.888	15.1	97.5	
N26168	R20-141	9/02/2021	Lot 1355, F.L.		150	150	1.877	16	0	0	1.811	1.877	15.8	96.5	
N26169	R20-141	9/02/2021	Lot 1356, F.L.		150	150	1.882	16.1	0	0	1.808	1.882	15.9	96.1	
N26170	R20-141	9/02/2021	Lot 1357, F.L.		150	150	1.868	16.5	0	0	1.823	1.868	15.2	97.6	
N26171	R20-141	9/02/2021	Lot 1354, F.L.		150	150	1.859	16.8	0	0	1.8	1.859	16.6	96.8	
N26172	R20-141	9/02/2021	Lot 1353, F.L.		150	150	1.859	16.5	0	0	1.823	1.859	15.2	98.1	
N26173	R20-141	9/02/2021	Lot 1352, F.L.		150	150	1.856	16.6	0	0	1.814	1.856	16.4	97.7	
N26174	R20-141	9/02/2021	Lot 1351, F.L.		150	150	1.859	16.7	0	0	1.826	1.859	15.5	98.2	
N26175	R20-141	9/02/2021	Lot 1350, F.L.		150	150	1.86	16.6	0	0	1.833	1.86	15.3	96.6	



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MDD (t/m ³)	OMC (%)	Oversize Wet (%)	Oversize Dry (%)	Oversize Density (t/m ³)	Dry Density (t/m ³)	Field MC (%)	Density Ratio (%)	Report No
N26176	R20-141	9/02/2021	Lot 1346, F.L.		150	150	1.862	16.5	0	0	1.813	1.64	16.4	97.4	
N26177	R20-141	9/02/2021	Lot 1347, F.L.		150	150	1.859	16.5	0	0	1.804	1.64	16.4	97	
N26425	R20-141	15/02/2021	Lots 1367 / 1366 Boundary, 0.5m Below F.L.		150	150	1.565	24.5	0	0	1.488	24.5	24.5	95.1	
N26426	R20-141	15/02/2021	Lots 1366 / 1365 Boundary, 0.5m Below F.L.		150	150	1.58	25.2	0	0	1.5	23.3	24.9	94.9	
N26447	R20-141	22/02/2021	Lot 1345 / 1344 Boundary, 1m Below F.L.		150	150	1.446	25.5	0	0	1.429	24.6	24.6	98.8	
N26448	R20-141	22/02/2021	Lot 1343 / 1342 Boundary, 1m Below F.L.		150	150	1.43	25	0	0	1.443	24.9	24.9	100.9	
N26449	R20-141	22/02/2021	Lot 1345 / 1344 Boundary, 1.5m Below F.L.		150	150	1.445	25.2	0	0	1.448	24.7	24.3	100.2	
N26450	R20-141	22/02/2021	Lot 1342 / 1341 Boundary, 2m Below F.L.		150	150	1.434	25.5	0	0	1.457	24.3	24.3	101.6	
N26831	R20-141	9/03/2021	Lot 1367, F.L.		150	150	1.6	18.5	0	0	1.549	17.3	17.3	96.8	
N26832	R20-141	9/03/2021	Lot 1365, F.L.		150	150	1.609	18.5	0	0	1.564	17.9	17.9	97.2	
N26833	R20-141	9/03/2021	Lot 1364, F.L.		150	150	1.619	18.3	0	0	1.551	17.8	17.8	95.8	
N26834	R20-141	9/03/2021	Lot 1345, F.L.		150	150	1.616	18.8	0	0	1.559	17.3	17.3	96.5	
N26835	R20-141	9/03/2021	Lot 1344, F.L.		150	150	1.633	18.5	0	0	1.567	17.6	17.6	96	
N26836	R20-141	9/03/2021	Lot 1343, F.L.		150	150	1.63	18.9	0	0	1.56	17.4	17.4	95.7	
N26837	R20-141	9/03/2021	Lot 1342, F.L.		150	150	1.618	18.8	0	0	1.559	17.5	17.5	96.4	
N26838	R20-141	9/03/2021	Lot 1341, F.L.		150	150	1.629	18.3	0	0	1.562	17.4	17.4	95.9	
N26839	R20-141	9/03/2021	Lot 1340, F.L.		150	150	1.645	18.8	0	0	1.618	17.4	17.4	98.4	
N26840	R20-141	9/03/2021	Lot 1339, F.L.		150	150	1.638	18.8	0	0	1.584	17.8	17.8	96.7	
N26841	R20-141	9/03/2021	Lot 1338, F.L.		150	150	1.627	18.4	0	0	1.572	17.3	17.3	96.6	
N26842	R20-141	9/03/2021	Lot 1337, F.L.		150	150	1.623	18.3	0	0	1.566	17.6	17.6	96.5	

SM20.05



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509

Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.

Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MDD (mm)	OMC (%)	OverSize Wet (%)	OverSize Dry (%)	OverSize Density (t/m ³)	Dry Density (t/m ³)	Field MC (%)	Density Ratio (%)	Report No.
NZ6843	R20-141	9/03/2021	Lot 135, F.L		150	150	1.594	19.3	0	0		1.567	18.2	98.3	
NZ6844	R20-141	9/03/2021	Lot 136, F.L		150	150	1.611	18.3	0	0		1.631	16.6	101.2	
NZ7095	R20-141	10/03/2021	Stormwater, 13B - 14B		150		1.75	18	0	0		1.726	16.4	98.6	
NZ7096	R20-141	10/03/2021	Stormwater, 14B - 15B		150		1.73	19.2	0	0		1.717	17.5	99.2	
NZ7097	R20-141	10/03/2021	Stormwater, 16B - Out 1/B		150		1.74	19.4	0	0		1.736	17.6	99.8	
NZ7098	R20-141	10/03/2021	Stormwater, 15B - 16B		150		1.76	19.3	0	0		1.711	17.4	97.2	
NZ7336	R20-141	10/04/2021	Stormwater, IN/B - 15B		150		1.7	19.9	0	0		1.659	19.8	97.6	
NZ7337	R20-141	10/04/2021	Stormwater, IN/BW - 16B		150		1.701	19.4	0	0		1.665	19.4	97.9	
NZ7338	R20-141	10/04/2021	Stormwater, IN/BX - 16B		150		1.701	19.4	0	0		1.622	17.8	95.4	
NZ7455	R20-141	10/04/2021	Southern decanting basin, E: 6180.315, N: 2386.342, RL: 7.361		150		1.591	20.1	0	0		1.595	19.1	100.2	
NZ7456	R20-141	10/04/2021	Southern decanting basin, E: 6241.716, N: 2308.421, RL: 6.488		150		1.599	20.1	0	0		1.595	19.4	99.8	
NZ7497	R20-141	13/04/2021	Southern Decanting Basin, E: 6060.032, N: 2386.231, RL: 5.250		150		1.549	22.1	0	0		1.549	22.1	100	
NZ7498	R20-141	13/04/2021	Southern Decanting Basin, E: 6068.907, N: 2487.218, RL: 5.336		150		1.551	22.4	0	0		1.544	22	99.6	
NZ9251	R20-141	13/04/2021	Stormwater Foundation, OUT/BU - 13B		150		1.772	14.9	0	0		1.735	14.7	97.9	
NZ9252	R20-141	14/04/2021	Stormwater Foundation, 13B - 12B		150		1.785	14.9	0	0		1.733	14.8	97.1	
NZ9253	R20-141	14/04/2021	Stormwater Foundation, 12B - 11B		150		1.764	16.1	0	0		1.734	14.8	98.3	
NZ9254	R20-141	14/04/2021	Stormwater Foundation, 10B - 9B		150		1.784	16.5	0	0		1.743	14.4	97.7	
NZ7366	R20-141	14/04/2021	Stormwater, 10B - 11B		150		1.761	17.8	0	0		1.725	16	98	
NZ7263	R20-141	14/04/2021	Stormwater, 13B - 12B		150		1.564	25.8	0	0		1.563	24.8	99.9	
NZ7264	R20-141	14/04/2021	Stormwater, 12B - 11B		150		1.572	25.5	0	0		1.59	23.7	101.2	

3812-24



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MOD (t/m ³)	OMC (%)	Oversize Wet (%)	Oversize Dry (%)	Oversize Density (t/m ³)	Dry Density (t/m ³)	Field MC (%)	Density Ratio (%)	Report No.
NZ785	R20-141	14/04/2021	Stormwater, 11B - 10B		150		1.549	26.6	0	0	1.553	25.6	100.3		
NZ787	R20-141	15/04/2021	Stormwater, G2BF - G1BF		150		1.767	17.4	0	0	1.761	17.4	99.7		
NZ855	R20-141	15/04/2021	Stormwater Foundation, 09B - 08B		150		1.778	16	0	0	1.697	14.9	95.4		
NZ925	R20-141	15/04/2021	Stormwater Foundation, 08B - 07B		150		1.815	16.5	0	0	1.735	14.5	95.6		
NZ927	R20-141	15/04/2021	Stormwater Foundation, 08B - G2BF		150		1.765	16.1	0	0	1.701	14.1	96.4		
NZ928	R20-141	15/04/2021	Stormwater Foundation, 07B - 06B		150		1.765	16.1	0	0	1.73	15.6	98		
NZ7499	R20-141	19/04/2021	Southern Decanting Basin, E 6010.748; N 2541.876; RL: 5.936		150		1.561	24.1	0	0	1.545	22.2	99		
NZ7500	R20-141	19/04/2021	Southern Decanting Basin, E 6071.085; N 2604.709; RL: 6.924		150		1.541	22.4	0	0	1.517	20.9	98.4		
NZ7368	R20-141	20/04/2021	Stormwater, G1BE - 07B		150		1.7	20.4	0	0	1.664	19.4	97.9		
NZ9400	R20-141	20/04/2021	Stormwater Foundation, 10B - G1BG		150		1.267	40.7	0	0	1.223	38.7	96.5		
NZ9401	R20-141	20/04/2021	Stormwater Foundation, 10B - G1BH		150		1.265	40.8	0	0	1.228	38.8	97.1		
NZ9402	R20-141	20/04/2021	Stormwater Foundation, 11B - G1B5		150		1.256	41.3	0	0	1.215	39.3	96.7		
NZ9403	R20-141	20/04/2021	Stormwater Foundation, 11B - G1BK		150		1.267	41.2	0	0	1.249	39.8	98.6		
NZ9404	R20-141	20/04/2021	Stormwater Foundation, 08B - G1BM		150		1.258	41.8	0	0	1.224	39.9	97.3		
NZ9405	R20-141	20/04/2021	Stormwater Foundation, G1BM - 02BM		150		1.252	41	0	0	1.234	40	98.6		
NZ9406	R20-141	20/04/2021	Stormwater Foundation, 09B - G1BQ		150		1.263	40.8	0	0	1.21	39.6	95.8		
NZ9407	R20-141	20/04/2021	Stormwater Foundation, 09B - G1BR		150		1.268	41.5	0	0	1.244	40.3	98.1		
NZ9408	R20-141	20/04/2021	Stormwater Foundation, 07B - G1B5		150		1.261	42	0	0	1.228	40.4	97.4		
NZ7427	R20-141	22/04/2021	Stormwater, 18A - 17A		150		1.146	19.7	0	0	1.127	19.7	98.9		
NZ7428	R20-141	22/04/2021	Stormwater, CuckA - 18A		150		1.741	18.7	0	0	1.679	19.1	96.4		

TABLE



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MOD (t/m ³)	OMC (%)	Oversize Wet (%)	Oversize Dry (%)	Oversize Density (t/m ³)	Dry Density (t/m ³)	Field MC (%)	Density Ratio (%)	Report No
N29259	R20-141	28/04/2021	Stormwater Foundation, 17/A - 16/A		150		1.784	16.4	0	0	1.743	15	15	97.7	
N29260	R20-141	31/05/2021	Stormwater Foundation, 02/BM - 01/BM		150		1.784	15.1	0	0	1.705	14.6	14.6	96.6	
N29261	R20-141	7/06/2021	Stormwater Foundation, Out 1/A1 - 18/A		150		1.795	14.9	0	0	1.709	13	13	93.2	
N29262	R20-141	8/06/2021	Stormwater Foundation, 17/A - 02/S		150		1.785	15.6	0	0	1.7	13.6	13.6	95.2	
N29268	R20-141	11/06/2021	Stormwater, Out 1/B - 16/B, 0.5m Below F.L.		150		1.727	18.9	0	0	1.632	18.2	18.2	98	
N29290	R20-141	11/06/2021	Stormwater, Out 1/B - 16/B, F.L.		150		1.713	18.5	0	0	1.704	18	18	98.5	
N29291	R20-141	11/06/2021	Stormwater, 15/B - 14/B, 1.5m Below F.L.		150		1.707	18.7	0	0	1.633	18.1	18.1	98.2	
N29292	R20-141	11/06/2021	Stormwater, 15/B - 14/B, 1m Below F.L.		150		1.897	19	0	0	1.636	19.6	19.6	96.4	
N29293	R20-141	11/06/2021	Stormwater, 15/B - 14/B, 0.5m Below F.L.		150		1.713	18.5	0	0	1.658	17.7	17.7	96.8	
N29294	R20-141	11/06/2021	Stormwater, 15/B - 14/B, F.L.		150		1.716	18.3	0	0	1.68	16.7	16.7	97.9	
N29295	R20-141	11/06/2021	Stormwater, 14/B - 13/B, 0.5m Below F.L.		150		1.722	18.6	0	0	1.711	18.1	18.1	98.4	
N29296	R20-141	11/06/2021	Stormwater, 14/B - 13/B, F.L.		150		1.717	18.7	0	0	1.706	17.2	17.2	98.4	
N29297	R20-141	11/06/2021	Stormwater, OutBU - 13/B, 1m Below F.L.		150		1.723	19	0	0	1.631	18.3	18.3	98.1	
N29298	R20-141	11/06/2021	Stormwater, OutBU - 13/B, 0.5m Below F.L.		150		1.718	17.9	0	0	1.64	16.5	16.5	95.5	
N29299	R20-141	11/06/2021	Stormwater, OutBU - 13/B, F.L.		150		1.915	10.5	0	0	1.83	8.6	8.6	95.6	
N29300	R20-141	11/06/2021	Stormwater, 16/B - In/BW, F.L.		150		1.918	9.6	0	0	1.851	8	8	96.5	
N29301	R20-141	11/06/2021	Stormwater, 16/B - In 2/BX, F.L.		150		1.829	10.1	0	0	1.836	8.2	8.2	93.2	
N29302	R20-141	11/06/2021	Stormwater, In 2/BX - In 1/BX, F.L.		150		1.834	10.4	0	0	1.837	8.4	8.4	95	
N29303	R20-141	11/06/2021	Stormwater, Out/A - 18/A, 1m Below F.L.		150		1.868	11.4	0	0	1.868	9.5	9.5	95.4	
N29304	R20-141	11/06/2021	Stormwater, Out/A - 18/A, 0.5m Below F.L.		150		1.869	10.7	0	0	1.874	10.4	10.4	95.2	

Page 13



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MDD (mm)	OMC (%)	OverSize Wet (%)	OverSize Dry (%)	OverSize Density (t/m ³)	Dry Density (t/m ³)	Field MC (%)	Density Ratio (%)	Report No.
N23305	R20-141	11/06/2021	Stormwater, Out/A - 18/A, F.L.		150		1.936	11.1	0	0	1.913	10.9	98.8		
N23306	R20-141	11/06/2021	Stormwater, 18/A - 17/A, 1m Below F.L.		150		1.938	10.8	0	0	1.928	8.9	99.5		
N23307	R20-141	11/06/2021	Stormwater, 18/A - 17/A, 0.5m Below F.L.		150		1.938	10.8	0	0	1.913	9.8	98.7		
N23308	R20-141	11/06/2021	Stormwater, 18/A - 17/A, F.L.		150		1.963	10.7	0	0	1.926	10.1	98.1		
N23309	R20-141	11/06/2021	Stormwater, 17/A - 16/A, 1m Below F.L.		150		1.924	10.9	0	0	1.906	10.2	99.1		
N23310	R20-141	11/06/2021	Stormwater, 17/A - 16/A, 0.5m Below F.L.		150		1.928	11.1	0	0	1.887	10.6	98.4		
N23311	R20-141	11/06/2021	Stormwater, 17/A - 16/A, F.L.		150		1.891	10.3	0	0	1.914	10.2	101.2		
N23312	R20-141	11/06/2021	Stormwater, Out 11/A - 18/A, 0.5m Below F.L.		150		1.899	11	0	0	1.894	10.9	99.7		
N23313	R20-141	11/06/2021	Stormwater, Out 11/A - 18/A, F.L.		150		1.907	10.4	0	0	1.895	10.3	99.4		
N23314	R20-141	11/06/2021	Stormwater, 17/A - 16/A, 0.5m Below F.L.		150		1.909	10.7	0	0	1.92	8.7	100.6		
N23315	R20-141	11/06/2021	Stormwater, 17/A - 16/A, F.L.		150		1.919	10.3	0	0	1.912	9.8	99.6		
N23882	R20-141	11/06/2021	Stormwater, 18/A - Out 16, F.L.		150		1.914	17.1	0	0	1.921	16.5	100.4		
N27488	R20-141	11/06/2021	Stormwater, Out 11C - 18/A		150		1.731	19.7	0	0	1.674	18.7	96.7		
N27514	R20-141	14/06/2021	Sewer, 815 - E1/5K		150		1.727	19.1	0	0	1.658	17.1	96		
N27515	R20-141	21/06/2021	Stormwater, G1/B1 - 13B		150		1.711	18.1	0	0	1.696	17.9	99.1		
N27545	R20-141	22/06/2021	Sewer, 1015 - E1/5U		150		1.746	19.4	0	0	1.685	19.2	96.5		
N27546	R20-141	24/06/2021	Sewer, 4/20 - 1/23		150		1.746	19.4	0	0	1.683	19.2	96.4		
N27547	R20-141	24/06/2021	Sewer, 1/23 - E/23		150		1.767	18.7	0	0	1.685	18.7	95.4		
N28147	R20-141	25/06/2021	Sewer, 12/B - 13/E		150		1.711	19.1	0	0	1.631	19	95.3		
N28679	R20-141	16/07/2021	Road 6, CH 141, C.L.		150	150	2.067	8.6	0	0	2.077	6.6	100.5		



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MDD (t/m ³)	OMC (%)	Oversize Wet (%)	Oversize Dry (%)	Oversize Density (t/m ³)	Dry Density (t/m ³)	Field MC (%)	Density Ratio (%)	Report No
N2560	R20-141	16/07/2021	Road 6, CH 209, C.L.		150	150	2.053	8.4	0	0	2.062	2.062	6.7	100.4	
N2561	R20-141	16/07/2021	Road 6, CH 247, 1m Left of C.L.		150	150	2.032	8.6	0	0	2.053	2.053	8.1	101	
N2562	R20-141	16/07/2021	Road 6, CH 300, 1m Right of C.L.		150	150	2.034	8.4	0	0	2.048	2.048	7.4	100.7	
N2563	R20-141	16/07/2021	Road 7, CH 20, C.L.		150	150	2.036	7.3	0	0	2.087	2.087	5.4	102.5	
N2564	R20-141	16/07/2021	Road 5, CH 60, C.L.		150	150	2.013	8.4	0	0	2.057	2.057	7.5	102.2	
N2565	R20-141	16/07/2021	Road 5, CH 100, 1m Left of C.L.		150	150	2.015	8.4	0	0	2.053	2.053	7.6	101.9	
N2566	R20-141	16/07/2021	Road 6, CH 146, C.L.		150	150	1.794	16.3	0	0	1.796	1.796	14.3	100.1	
N2567	R20-141	16/07/2021	Road 6, CH 200, 1m Right of C.L.		150	150	1.798	17.1	0	0	1.797	1.797	15.2	99.9	
N2568	R20-141	16/07/2021	Road 6, CH 245, 1m Right of C.L.		150	150	1.798	17.1	0	0	1.806	1.806	15.1	100.4	
N2569	R20-141	16/07/2021	Road 6, CH 309, C.L.		150	150	1.771	17.1	0	0	1.781	1.781	15.1	100.6	
N2570	R20-141	16/07/2021	Road 7, CH 20		150	150	1.773	16.4	0	0	1.776	1.776	14.5	100.2	
N2571	R20-141	16/07/2021	Road 5, CH 50		150	150	1.793	16.4	0	0	1.802	1.802	14.4	100.5	
N2572	R20-141	16/07/2021	Road 5, CH 100		150	150	1.769	17.3	0	0	1.773	1.773	17.2	100.2	
N2573	R20-141	20/07/2021	Stormwater, 10B - 9B, F.L., At T2.1 Level		150	150	2.281	9	0	0	2.324	2.324	7.2	101.9	
N2574	R20-141	20/07/2021	Stormwater, 9B - 8B, F.L., At T2.1 Level		150	150	2.281	9	0	0	2.325	2.325	7.1	101.9	
N2575	R20-141	20/07/2021	Stormwater, 8B - 7B, F.L., At T2.1 Level		150	150	2.281	9	0	0	2.324	2.324	7	101.9	
N2576	R20-141	20/07/2021	Stormwater, 7B - 6B, F.L., At T2.1 Level		150	150	2.281	9	0	0	2.319	2.319	7.2	101.7	
N2577	R20-141	20/07/2021	Road 6, CH 150, C.L.		150	150	2.281	9	0	0	2.29	2.29	7	100.4	
N2578	R20-141	20/07/2021	Road 6, CH 201, 1m LHS C.L.		150	150	2.281	9	0	0	2.284	2.284	7	100.1	
N2579	R20-141	20/07/2021	Road 6, CH 249, 1m RHS C.L.		150	150	2.281	9	0	0	2.304	2.304	7.2	101	

08/10/21



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509

Ph (07) 3491 6499 Fax (07) 3491 6299

Email: admin@ryangeotech.com.au

Loganholme

9/8 Riverland Drive Loganholme QLD 4129.

Ph (07) 3209 8152 Fax (07) 3209 8153

Email: s.hunter@ryangeotech.com.au

www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MOD (t/m ²)	OMC (%)	Oversize Wet (%)	Oversize Dry (%)	Oversize Density (t/m ³)	Dry Density (t/m ³)	Field MC (%)	Density Ratio (%)	Report No.
N29758	R20-141	20/07/2021	Road 6, CH 341, 1m LHS C.L		150		2.281	9	0	0	2.3	2.3	7.1	100.8	
N29759	R20-141	20/07/2021	Road 7, CH 20, C.L		150		2.281	9	0	0	2.295	2.295	7.1	100.6	
N29760	R20-141	20/07/2021	Road 5, CH 49, 1m LHS C.L		150		2.281	9	0	0	2.281	2.281	7	100	
N29761	R20-141	20/07/2021	Road 5, CH 100, 1m RHS C.L		150		2.281	9	0	0	2.294	2.294	7.2	100.6	
N29762	R20-141	20/07/2021	Stormwater, 12B - 13B, F.L		150		2.281	9	0	0	2.28	2.28	7	100	
N29763	R20-141	20/07/2021	Stormwater, 12B - 13E, F.L		150		2.281	9	0	0	2.299	2.299	7.1	100.8	
N29764	R20-141	20/07/2021	Stormwater, 11B - G1/BK, F.L		150		2.281	9	0	0	2.296	2.296	7.3	100.7	
N29765	R20-141	20/07/2021	Stormwater, 11B - G1/BL, F.L		150		2.281	9	0	0	2.285	2.285	7.2	100.2	
N29766	R20-141	20/07/2021	Stormwater, 10B - G1/BL, F.L		150		2.281	9	0	0	2.291	2.291	7	100.4	
N29767	R20-141	20/07/2021	Stormwater, 10B - G1/BL, F.L		150		2.281	9	0	0	2.293	2.293	7.2	100.5	
N29768	R20-141	20/07/2021	Stormwater, 09B - G1/BL, F.L		150		2.281	9	0	0	2.28	2.28	7.2	100	
N29769	R20-141	20/07/2021	Stormwater, 09B - G1/BL, F.L		150		2.281	9	0	0	2.285	2.285	7.1	100.2	
N29770	R20-141	20/07/2021	Stormwater, 08B - G2/BL, F.L		150		2.281	9	0	0	2.294	2.294	7.1	100.6	
N29771	R20-141	20/07/2021	Stormwater, G2/BL - G1/BL, F.L		150		2.281	9	0	0	2.278	2.278	7.1	99.9	
N29772	R20-141	20/07/2021	Stormwater, G2/BL - G1/BL, F.L		150		2.281	9	0	0	2.304	2.304	7.1	101	
N29773	R20-141	20/07/2021	Stormwater, G1/BL - 08/BL, F.L		150		2.281	9	0	0	2.28	2.28	7.2	100	
N29774	R20-141	20/07/2021	Stormwater, G1/BL - 02/BL, F.L		150		2.281	9	0	0	2.298	2.298	7	100.8	
N29775	R20-141	20/07/2021	Stormwater, G1/BL - 07/BL, F.L		150		2.281	9	0	0	2.285	2.285	7.2	100.2	
N29776	R20-141	20/07/2021	Stormwater, 07B - G1/BL, F.L		150		2.281	9	0	0	2.302	2.302	7	100.9	
N29777	R20-141	20/07/2021	Stormwater, 18B - G1/BL, F.L		150		2.281	9	0	0	2.285	2.285	7.2	100.2	

Client : Rian Civil Pty Ltd
 Project : Riverbank Estate Stage 16B
 Project Number : R20-141
 Project Location : Market Drive
 Suburb : Caboolture South



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary															
Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MDD (t/m ³)	OMC (%)	Oversize Wet (%)	Oversize Dry (%)	Oversize Density (t/m ³)	Dry Density (t/m ³)	Field MC (%)	Density Ratio (%)	Report No.
N29778	R20-141	20/07/2021	Stormwater, 1206 - 1108, F.L.		150		2.281	9	0	0	2.293	2.293	7.2	100.5	
N29779	R20-141	20/07/2021	Stormwater, 1108 - 1008, F.L.		150		2.281	9	0	0	2.294	2.294	7	100.6	
N28148	R20-141	22/07/2021	Sewer, 1/23 - E/23A		150		1.687	23.1	0	0	1.604	1.604	21	95.1	
N31479	R20-141	10/08/2021	Watermain, Adjacent Lot 1338		150		1.751	19.9	0	0	1.753	1.753	18	100.1	
N31480	R20-141	10/08/2021	Watermain, Adjacent Lot 1341		150		1.767	18.9	0	0	1.776	1.776	17.1	100.5	
N31481	R20-141	10/08/2021	Watermain, Adjacent Lot 1344		150		1.711	20.1	0	0	1.715	1.715	18.3	100.2	
N31482	R20-141	10/08/2021	Watermain, Adjacent Lot 1362		150		1.767	21.1	0	0	1.776	1.776	19.4	100.5	
N31483	R20-141	10/08/2021	Watermain, Adjacent Lot 1366, F.L.		150		1.756	17.9	0	0	1.737	1.737	16.1	100.1	
N31484	R20-141	10/08/2021	Watermain, Road 7, Crossing F.L.		150		1.746	19.1	0	0	1.75	1.75	17.1	100.2	
N30293	R20-141	11/08/2021	Road 6, CH 145		150		2.211	7	0	0	2.254	2.254	6.8	101.9	
N30294	R20-141	11/08/2021	Road 6, CH 199		150		2.21	7.6	0	0	2.251	2.251	7.1	101.9	
N30295	R20-141	11/08/2021	Road 6, CH 261		150		2.206	7.7	0	0	2.252	2.252	7.4	102.1	
N30296	R20-141	11/08/2021	Road 6, CH 300		150		2.207	7.7	0	0	2.246	2.246	7.5	101.8	
N30297	R20-141	11/08/2021	Road 5, CH 50		150		2.203	7.6	0	0	2.25	2.25	7.1	102.1	
N30298	R20-141	11/08/2021	Road 5, CH 101		150		2.214	7.6	0	0	2.268	2.268	6.3	102.4	
N30299	R20-141	11/08/2021	Road 7, CH 25		150		2.21	7.2	0	0	2.258	2.258	7	102.2	
N30300	R20-141	11/08/2021	Road 6, CH 149		150		2.173	7.5	0	0	2.225	2.225	7	102.4	
N30301	R20-141	11/08/2021	Road 6, CH 197		150		2.177	7.5	0	0	2.219	2.219	7.2	101.9	
N30302	R20-141	11/08/2021	Road 6, CH 269		150		2.168	7.6	0	0	2.224	2.224	7.4	102.6	
N30303	R20-141	11/08/2021	Road 6, CH 304		150		2.173	8.1	0	0	2.208	2.208	7.8	101.6	

BMS16



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Field Density Ratio (Nuclear Meter) Summary

Sample Number	Project Number	Date Sampled	Location	Test Number	Test Depth	Layer Depth	MDD (t/m ³)	OMC (%)	Oversize Wet (%)	Oversize Dry (%)	Oversize Density (t/m ³)	Dry Density (t/m ³)	Field MC (%)	Density Ratio (%)	Report No
N30304	R20-141	11/08/2021	Road 5, CH 50		150		2.164	7.9	0	0	2.222	2.222	7.5	102.7	
N30305	R20-141	11/08/2021	Road 5, CH 111		150		2.166	7.8	0	0	2.225	2.225	7.6	102.7	
N30306	R20-141	11/08/2021	Road 7, CH 29		150		2.149	8.1	0	0	2.217	2.217	7.8	103.2	
N30434	R20-141	12/08/2021	Stormwater Structure, 18/A, 1.5m Below F.L.		150		1.788	15.4	0	0	1.709	1.709	13.9	95.6	
N30435	R20-141	12/08/2021	Stormwater Structure, 18/A, 1m Below F.L.		150		1.808	14.4	0	0	1.732	1.732	13.7	95.8	
N30436	R20-141	12/08/2021	Stormwater Structure, 18/A, 0.5m Below F.L.		150		1.804	15	0	0	1.731	1.731	13.1	96	
N30437	R20-141	12/08/2021	Stormwater Structure, 18/A, F.L.		150		1.799	14.6	0	0	1.744	1.744	12.6	96.9	
N31461	R20-141	2/09/2021	Sewer, 4/20 - 1/23, 0.3m Below F.L.		150		1.721	24	0	0	1.667	1.667	24	96.9	
N31462	R20-141	2/09/2021	Sewer, 4/20 - 1/23, F.L.		150		1.729	25.1	0	0	1.673	1.673	25	96.8	
N31463	R20-141	2/09/2021	Sewer, 1/23 - E/23, 0.3m Below F.L.		150		1.711	24.6	0	0	1.675	1.675	24.4	97.9	
N31464	R20-141	2/09/2021	Sewer, 1/23 - E/23, F.L.		150		1.728	24.1	0	0	1.67	1.67	23.8	96.6	

08/12/18



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 **Fax** (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 **Fax** (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

Appendix C

Individual Lot Certificates



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 **Fax** (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 **Fax** (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au



BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1337**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au
Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1338**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1339

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1340

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1341**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1342

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1343**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE (As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1344**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts
for and on behalf of
RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au
Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1345**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1346

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1347**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1348

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au
Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1349**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au
Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1350**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1351**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1352**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1353

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1354**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au
Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1355**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1356

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE (As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B Market Drive, Caboolture South Lot 1357

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts
for and on behalf of
RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au
Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE (As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1358**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au
Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE (As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1359**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1360**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au
Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1361**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au
Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1362**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1363**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling



ABN 16 607 643 229

RYAN & ASSOCIATES GEOTECHNICAL PTY LTD

Head Office North Lakes
4/20 Burke Crescent North Lakes QLD 4509
Ph (07) 3491 6499 Fax (07) 3491 6299
Email: admin@ryangeotech.com.au

Loganholme
9/8 Riverland Drive Loganholme QLD 4129.
Ph (07) 3209 8152 Fax (07) 3209 8153
Email: s.hunter@ryangeotech.com.au
www.ryangeotech.com.au

BULK FILL OPERATIONS TESTING CERTIFICATE (As per AS3798-2007 - Level 1)

**Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1364**

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1365

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE
(As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1366

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts
for and on behalf of
RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling

BULK FILL OPERATIONS TESTING CERTIFICATE

(As per AS3798-2007 - Level 1)

Riverland Estate Stage 16B
Market Drive, Caboolture South
Lot 1367

The results obtained from compaction control testing together with onsite supervision made during earthworks operations indicate that fill materials were consistently placed in a controlled manner and in accordance with good engineering practice. As far as could be determined the earthworks have been carried out to meet the requirements of the drawings and specifications.

The earthworks at the time of completion have been carried out to meet the requirements of Level 1 Certification as per AS3798 – 2007 “Guidelines on Earthworks for Commercial and Residential Development”.

This level one certificate verifies that all supervised fill placed meets the minimum requirements of 95% standard compaction where applicable as per drawing numbered 19-000817.2 - 200.

This level one certificate makes no reference to previous filling works if any or natural ground and its suitability to future design beyond its acceptance of passing proof rolling.

This level one certificate does not cover any fill placed by others prior to or after Ryan & Associates controlled filling works.

Unless otherwise stated, this Level 1 Certification does not address any other geotechnical issues which may be relevant to building construction and serviceability.

This Level 1 Certification does not include backfill to service trenches or retaining walls.

A full geotechnical site investigation/classification and foundation design for the specific ground conditions should be carried out by a suitably qualified and experienced professional, prior to building when the structure type and location is known.

S. Roberts

for and on behalf of

RYAN & ASSOCIATES GEOTECHNICAL

Enc. Drawing showing lateral extent of controlled filling