

Appendix D



Laboratory Certificates of Analysis

Notes for Appendix D – Laboratory Certificates of Analysis

- Site D18 results (EAL Job Numbers H0793 & H0485) are samples from Site 18, SLR (2015), which were subsequently analysed by EAL in May 2018.
- All other analysis dated May 2018 are samples from the Maxwell Project Biophysical Strategic Agricultural Land Verification Assessment.
- All analysis dated December 2014 and January 2015 from ALS and Scone Research Centre are SLR (2015).

ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

80 samples supplied by SLR Consulting Australia Pty Ltd on 23/05/18. Lab Job No.H0640

Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Analysis requested by Murray Fraser. Your Job: SLR630.12463		Sample 1 M1 0-10 Soil Maxwell	Sample 2 M1 20-30 Soil Maxwell	Sample 3 M1 40-50 Soil Maxwell	Sample 4 M1 65-75 Soil Maxwell	
10 Kings Road NEW LAMBTON NSW 2305						
Sample ID: Crop: Client:						
	Parameter	Method reference	H0640/1	H0640/2	H0640/3	H0640/4
	pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	6.34	7.37	8.67	8.63
	Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.049	0.137	0.481	1.064
	Exchangeable Calcium (cmol./kg) (kg/ha) (mg/kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	6.72	8.86	5.89	8.01
			3015	3977	2646	3596
			1346	1775	1181	1605
	Exchangeable Magnesium (cmol./kg) (kg/ha) (mg/kg)		6.60	12.26	11.17	14.04
			1796	3338	3040	3822
			802	1490	1357	1706
	Exchangeable Potassium (cmol./kg) (kg/ha) (mg/kg)		0.98	0.81	0.47	0.77
			862	710	415	671
			385	317	185	300
	Exchangeable Sodium (cmol./kg) (kg/ha) (mg/kg)		0.71	2.70	5.04	8.13
			368	1390	2596	4188
			164	620	1159	1870
Exchangeable Aluminium (cmol./kg) (kg/ha) (mg/kg)	**Inhouse S37 (KCl)	0.02	0.02	0.02	0.02	
		3	4	4	3	
		2	2	2	2	
Exchangeable Hydrogen (cmol./kg) (kg/ha) (mg/kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.01	0.00	0.00	0.00	
		0	0	0	0	
		0	0	0	0	
Effective Cation Exchange Capacity (ECEC) (cmol./kg)		**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	15.04	24.65	22.59	30.96
	Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	44.7	35.9	26.1	25.9
	Magnesium (%)		43.9	49.7	49.4	45.3
	Potassium (%)		6.5	3.3	2.1	2.5
Sodium - ESP (%)	4.7		10.9	22.3	26.3	
Aluminium (%)	0.1		0.1	0.1	0.1	
Hydrogen	0.1		0.0	0.0	0.0	
Calcium/Magnesium Ratio		**Calculation - Calcium / Magnesium (cmol./kg)	1.0	0.7	0.5	0.6
pH		**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	5.61	6.47	7.93	8.07
Colour (Munsell Soil Colour Classification) - Hue/Colour		**Inhouse	7.5YR	7.5YR	5YR	5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma		**Inhouse	3/4	3/3	4/6	3/4
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion		**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 1	Sample 2	Sample 3	Sample 4
M1 0-10	M1 20-30	M1 40-50	M1 65-75
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell

Parameter	Method reference	H0640/1	H0640/2	H0640/3	H0640/4
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing: Collingwood.
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Handbook.
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens daycare centres, preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agricultural soil results'.
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over-estimate
- ** NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
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 Agricultural Co-Ordinator

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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

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10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 5 M3 0-10	Sample 6 M3 20-30	Sample 7 M3 40-50	Sample 8 M5 0-10
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell

Parameter	Method reference	H0640/5	H0640/6	H0640/7	H0640/8
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	6.28	6.15	6.83	7.09
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.023	0.010	0.040	0.121
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	2.96	1.65	9.57	27.99
(kg/ha)		1328	739	4295	12567
(mg/kg)		593	330	1917	5610
Exchangeable Magnesium (cmol./kg)		1.10	0.38	3.43	8.48
(kg/ha)		299	103	933	2310
(mg/kg)		134	46	416	1031
Exchangeable Potassium (cmol./kg)		0.66	0.32	0.34	2.48
(kg/ha)		574	277	294	2170
(mg/kg)		256	124	131	969
Exchangeable Sodium (cmol./kg)		0.17	0.09	0.60	0.33
(kg/ha)		89	46	307	171
(mg/kg)		40	20	137	76
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.01	0.00	0.02	0.01
(kg/ha)		3	1	4	2
(mg/kg)		1	0	2	1
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.01	0.01	0.00	0.00
(kg/ha)		0	0	0	0
(mg/kg)		0	0	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	4.91	2.44	13.94	39.30
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	60.3	67.4	68.6	71.2
Magnesium (%)		22.4	15.5	24.6	21.6
Potassium (%)		13.4	12.9	2.4	6.3
Sodium - ESP (%)		3.5	3.6	4.3	0.8
Aluminium (%)		0.3	0.2	0.1	0.0
Hydrogen		0.1	0.3	0.0	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	2.7	4.3	2.8	3.3
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	6.03	5.17	5.98	6.68
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	10YR	7.5YR	5YR	7.5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	4/4	4/6	4/6	3/2
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	10YR, 6/6, 20%	None

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10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 5	Sample 6	Sample 7	Sample 8
M3 0-10	M3 20-30	M3 40-50	M5 0-10
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/5	H0640/6	H0640/7	H0640/8

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
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 Agricultural Co-Ordinator

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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 9 M5 20-30 Soil Maxwell	Sample 10 M5 40-50 Soil Maxwell	Sample 11 M5 65-75 Soil Maxwell	Sample 12 M6 0-5 Soil Maxwell
H0640/9	H0640/10	H0640/11	H0640/12
8.44	8.51	8.58	5.96
0.164	0.497	0.635	0.031
37.03	28.84	28.62	4.52
16624	12948	12847	2029
7421	5780	5735	906
14.83	19.38	19.26	1.51
4037	5275	5242	410
1802	2355	2340	183
1.20	1.00	0.88	0.68
1052	880	774	596
470	393	345	266
1.49	5.73	6.85	0.15
766	2948	3527	79
342	1316	1575	35
0.01	0.02	0.02	0.01
3	4	3	3
1	2	2	1
0.00	0.00	0.00	0.02
0	0	0	0
0	0	0	0
54.56	54.97	55.62	6.89
67.9	52.5	51.5	65.6
27.2	35.3	34.6	21.9
2.2	1.8	1.6	9.9
2.7	10.4	12.3	2.2
0.0	0.0	0.0	0.2
0.0	0.0	0.0	0.3
2.5	1.5	1.5	3.0
7.87	7.97	8.01	5.72
10YR	10YR	10YR	7.5YR
4/3	4/3	3/2	4/4
None	None	None	None

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10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 9	Sample 10	Sample 11	Sample 12
M5 20-30	M5 40-50	M5 65-75	M6 0-5
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/9	H0640/10	H0640/11	H0640/12

Parameter	Method reference
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Notes:

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 13 M6 10-20	Sample 14 M6 30-40	Sample 15 M6 50-60	Sample 16 M7 0-10
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell

Parameter	Method reference	H0640/13	H0640/14	H0640/15	H0640/16
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	6.17	6.21	6.96	5.75
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.039	0.058	0.052	0.052
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	3.67	11.28	10.79	7.30
(kg/ha)		1647	5061	4843	3276
(mg/kg)		735	2260	2162	1463
Exchangeable Magnesium (cmol./kg)		1.18	5.08	4.92	3.25
(kg/ha)		321	1384	1338	886
(mg/kg)		143	618	597	396
Exchangeable Potassium (cmol./kg)		0.50	1.02	0.56	1.16
(kg/ha)		442	893	490	1018
(mg/kg)		197	399	219	454
Exchangeable Sodium (cmol./kg)		0.07	0.27	0.32	0.16
(kg/ha)		38	140	164	84
(mg/kg)		17	63	73	37
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.13	0.02	0.01	0.01
(kg/ha)		25	4	2	2
(mg/kg)		11	2	1	1
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.00	0.00	0.03
(kg/ha)		0	0	0	1
(mg/kg)		0	0	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	5.55	17.67	16.59	11.91
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	66.1	63.8	65.0	61.3
Magnesium (%)		21.2	28.8	29.6	27.3
Potassium (%)		9.1	5.8	3.4	9.8
Sodium - ESP (%)		1.3	1.5	1.9	1.4
Aluminium (%)		2.3	0.1	0.1	0.1
Hydrogen		0.0	0.0	0.0	0.2
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	3.1	2.2	2.2	2.2
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	5.88	5.90	6.44	5.29
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	7.5YR	2.5YR	5YR	7.5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	4/6	4/8	4/6	2.5/1
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 13	Sample 14	Sample 15	Sample 16
M6 10-20	M6 30-40	M6 50-60	M7 0-10
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/13	H0640/14	H0640/15	H0640/16

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing.
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test.
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- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture'.
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an overestimate.
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10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 17 M7 20-30 Soil Maxwell	Sample 18 M7 40-50 Soil Maxwell	Sample 19 M8 0-10 Soil Maxwell	Sample 20 M8 20-30 Soil Maxwell
H0640/17	H0640/18	H0640/19	H0640/20
7.84	8.68	7.25	8.06
0.087	0.264	0.098	0.363
14.93	12.73	12.60	12.89
6703	5715	5654	5788
2992	2551	2524	2584
10.56	10.52	14.40	21.06
2874	2863	3920	5732
1283	1278	1750	2559
0.67	0.40	1.15	0.86
585	350	1007	753
261	156	450	336
1.60	2.83	2.32	5.87
823	1457	1196	3025
367	651	534	1350
0.01	0.01	0.01	0.01
1	2	2	2
1	1	1	1
0.00	0.00	0.00	0.00
0	0	0	0
0	0	0	0
27.76	26.49	30.48	40.69
53.8	48.1	41.3	31.7
38.0	39.7	47.2	51.7
2.4	1.5	3.8	2.1
5.8	10.7	7.6	14.4
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
1.4	1.2	0.9	0.6
6.94	8.13	6.40	7.32
7.5YR	10YR	7.5YR	7.5YR
4/4	5/4	3/2	3/2
None	None	None	None

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10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 17	Sample 18	Sample 19	Sample 20
M7 20-30	M7 40-50	M8 0-10	M8 20-30
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
Parameter	Method reference		
		H0640/17	H0640/18
		H0640/19	H0640/20

Notes:

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- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture'
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10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Analysis requested by Murray Fraser. Your Job: SLR630.12463		Sample 21	Sample 22	Sample 23	Sample 24	
10 Kings Road NEW LAMBTON NSW 2305		M8 40-50	M8 65-75	M9 0-10	M9 20-30	
Sample ID:		Soil	Soil	Soil	Soil	
Crop:						
Client:		Maxwell	Maxwell	Maxwell	Maxwell	
	Parameter	Method reference	H0640/21	H0640/22	H0640/23	H0640/24
	pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	8.56	8.74	6.43	8.03
	Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	1.075	1.332	0.070	0.192
	Exchangeable Calcium	(cmol./kg)	9.98	19.43	11.76	12.65
		(kg/ha)	4480	8723	5278	5680
		(mg/kg)	2000	3894	2356	2536
	Exchangeable Magnesium	(cmol./kg)	23.38	22.79	7.79	16.66
		(kg/ha)	6364	6203	2122	4536
		(mg/kg)	2841	2769	947	2025
	Exchangeable Potassium	(cmol./kg)	0.72	0.70	1.70	0.92
		(kg/ha)	635	609	1486	807
		(mg/kg)	283	272	663	360
	Exchangeable Sodium	(cmol./kg)	11.00	12.07	0.69	3.95
		(kg/ha)	5664	6216	356	2035
		(mg/kg)	2528	2775	159	909
Exchangeable Aluminium	(cmol./kg)	0.01	0.01	0.01	0.01	
	(kg/ha)	2	2	2	1	
	(mg/kg)	1	1	1	1	
Exchangeable Hydrogen	(cmol./kg)	0.00	0.00	0.02	0.00	
	(kg/ha)	0	0	0	0	
	(mg/kg)	0	0	0	0	
Effective Cation Exchange Capacity (ECEC) (cmol./kg)		**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	45.09	54.99	21.96	34.20
	Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	22.1	35.3	53.5	37.0
	Magnesium (%)		51.8	41.4	35.5	48.7
	Potassium (%)		1.6	1.3	7.7	2.7
Sodium - ESP (%)	24.4		21.9	3.1	11.6	
Aluminium (%)	0.0		0.0	0.0	0.0	
Hydrogen	0.0		0.0	0.1	0.0	
Calcium/Magnesium Ratio		**Calculation - Calcium / Magnesium (cmol./kg)	0.4	0.9	1.5	0.8
pH		**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	8.09	8.20	6.54	7.15
Colour (Munsell Soil Colour Classification) - Hue/Colour		**Inhouse	10YR	5YR	7.5YR	7.5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma		**Inhouse	3/4	3/4	2.5/2	3/3
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion		**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 21	Sample 22	Sample 23	Sample 24
M8 40-50	M8 65-75	M9 0-10	M9 20-30
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/21	H0640/22	H0640/23	H0640/24

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing.
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test.
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture'.
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an overestimate.
- ** NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

80 samples supplied by SLR Consulting Australia Pty Ltd on 23/05/18. Lab Job No.H0640

Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 25 M9 40-50	Sample 26 M9 65-75	Sample 27 M11 0-10	Sample 28 M11 20-30
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell

Parameter	Method reference	H0640/25	H0640/26	H0640/27	H0640/28
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	8.59	8.70	5.07	7.85
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.826	0.961	0.395	0.136
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	13.44	20.87	8.64	22.53
(kg/ha)		6035	9368	3881	10116
(mg/kg)		2694	4182	1732	4516
Exchangeable Magnesium (cmol./kg)		21.58	19.66	3.27	11.59
(kg/ha)		5876	5352	890	3156
(mg/kg)		2623	2389	397	1409
Exchangeable Potassium (cmol./kg)		0.78	0.69	2.25	0.90
(kg/ha)		685	602	1973	786
(mg/kg)		306	269	881	351
Exchangeable Sodium (cmol./kg)		8.78	8.70	0.55	2.05
(kg/ha)		4520	4481	281	1058
(mg/kg)		2018	2000	126	472
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.01	0.01	0.04	0.02
(kg/ha)		2	2	8	3
(mg/kg)		1	1	4	1
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.00	0.08	0.00
(kg/ha)		0	0	2	0
(mg/kg)		0	0	1	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	44.60	49.93	14.83	37.10
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	30.1	41.8	58.3	60.7
Magnesium (%)		48.4	39.4	22.0	31.3
Potassium (%)		1.8	1.4	15.2	2.4
Sodium - ESP (%)		19.7	17.4	3.7	5.5
Aluminium (%)		0.0	0.0	0.3	0.0
Hydrogen		0.0	0.0	0.5	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	0.6	1.1	2.6	1.9
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	8.11	8.10	4.86	7.16
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	10YR	7.5YR	7.5YR	10YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	3/4	4/4	3/2	4/1
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 25	Sample 26	Sample 27	Sample 28
M9 40-50	M9 65-75	M11 0-10	M11 20-30
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/25	H0640/26	H0640/27	H0640/28

Parameter	Method reference
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Notes:

1. All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
2. Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
3. Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
4. 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
5. Guidelines for phosphorus have been reduced for Australian soils.
6. Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
7. Total Acid Extractable Nutrients indicate a store of nutrients.
8. Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
9. Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
10. Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
11. Conversions to kg/ha = mg/kg x 2.24
12. The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
13. ** NATA accreditation does not cover the performance of this service.
14. Analysis conducted between sample arrival date and reporting date.
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 29 M11 40-50	Sample 30 M11 65-75	Sample 31 M12 0-10	Sample 32 M12 20-30
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell

Parameter	Method reference	H0640/29	H0640/30	H0640/31	H0640/32
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	8.54	8.56	7.78	8.21
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.328	0.475	0.187	0.154
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	24.63	24.56	50.31	49.82
(kg/ha)		11057	11026	22584	22363
(mg/kg)		4936	4922	10082	9983
Exchangeable Magnesium (cmol./kg)		13.42	12.80	7.58	13.48
(kg/ha)		3654	3486	2065	3669
(mg/kg)		1631	1556	922	1638
Exchangeable Potassium (cmol./kg)		0.69	0.64	1.76	0.89
(kg/ha)		602	565	1543	782
(mg/kg)		269	252	689	349
Exchangeable Sodium (cmol./kg)		4.00	5.17	0.56	1.40
(kg/ha)		2057	2660	289	722
(mg/kg)		918	1188	129	322
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.01	0.01	0.01	0.03
(kg/ha)		2	2	2	7
(mg/kg)		1	1	1	3
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.00	0.00	0.00
(kg/ha)		0	0	0	0
(mg/kg)		0	0	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	42.75	43.19	60.23	65.62
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	57.6	56.9	83.5	75.9
Magnesium (%)		31.4	29.6	12.6	20.5
Potassium (%)		1.6	1.5	2.9	1.4
Sodium - ESP (%)		9.3	12.0	0.9	2.1
Aluminium (%)		0.0	0.0	0.0	0.0
Hydrogen		0.0	0.0	0.0	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	1.8	1.9	6.6	3.7
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	7.98	8.05	7.47	7.57
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	7.5YR	7.5YR	7.5YR	7.5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	4/1	3/2	3/2	3/2
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 29	Sample 30	Sample 31	Sample 32
M11 40-50	M11 65-75	M12 0-10	M12 20-30
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/29	H0640/30	H0640/31	H0640/32

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
- ** NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 33 M12 40-50	Sample 34 M12 65-75	Sample 35 M14 0-10	Sample 36 M14 20-30
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell

Parameter	Method reference	H0640/33	H0640/34	H0640/35	H0640/36
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	8.77	8.89	6.50	6.54
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.261	0.491	0.124	0.221
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	35.32	29.37	7.24	5.79
(kg/ha)		15855	13185	3248	2599
(mg/kg)		7078	5886	1450	1160
Exchangeable Magnesium (cmol./kg)		19.65	23.82	3.51	8.78
(kg/ha)		5349	6485	957	2390
(mg/kg)		2388	2895	427	1067
Exchangeable Potassium (cmol./kg)		0.70	0.66	1.16	0.75
(kg/ha)		616	576	1015	660
(mg/kg)		275	257	453	295
Exchangeable Sodium (cmol./kg)		5.11	9.21	0.31	1.06
(kg/ha)		2633	4742	162	548
(mg/kg)		1175	2117	72	245
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.01	0.01	0.01	0.02
(kg/ha)		2	2	2	3
(mg/kg)		1	1	1	1
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.00	0.02	0.00
(kg/ha)		0	0	0	0
(mg/kg)		0	0	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	60.79	63.07	12.25	16.40
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	58.1	46.6	59.1	35.3
Magnesium (%)		32.3	37.8	28.7	53.5
Potassium (%)		1.2	1.0	9.5	4.6
Sodium - ESP (%)		8.4	14.6	2.6	6.5
Aluminium (%)		0.0	0.0	0.1	0.1
Hydrogen		0.0	0.0	0.1	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	1.8	1.2	2.1	0.7
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	8.01	8.21	6.53	6.17
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	7.5YR	7.5YR	7.5YR	5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	3/2	2.5/3	2.5/3	4/6
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	10YR, 6/4, 40%	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 33	Sample 34	Sample 35	Sample 36
M12 40-50	M12 65-75	M14 0-10	M14 20-30
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/33	H0640/34	H0640/35	H0640/36

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture'
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
- ** NATA accreditation does not cover the performance of this service.
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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Analysis requested by Murray Fraser. Your Job: SLR630.12463		Sample 37	Sample 38	Sample 39	Sample 40	
10 Kings Road NEW LAMBTON NSW 2305		M14 40-50	M15 0-10	M15 20-30	M15 40-50	
Sample ID:		Soil	Soil	Soil	Soil	
Crop:						
Client:		Maxwell	Maxwell	Maxwell	Maxwell	
	Parameter	Method reference	H0640/37	H0640/38	H0640/39	H0640/40
	pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	6.52	5.58	7.24	8.28
	Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.592	0.094	0.060	0.131
	Exchangeable Calcium	(cmol./kg)	5.27	8.61	16.20	16.41
		(kg/ha)	2365	3867	7270	7366
		(mg/kg)	1056	1726	3245	3289
	Exchangeable Magnesium	(cmol./kg)	11.64	5.50	11.29	13.16
		(kg/ha)	3170	1497	3073	3582
		(mg/kg)	1415	668	1372	1599
	Exchangeable Potassium	(cmol./kg)	0.62	0.45	0.43	0.34
		(kg/ha)	544	397	374	298
		(mg/kg)	243	177	167	133
	Exchangeable Sodium	(cmol./kg)	3.10	0.57	1.58	3.12
		(kg/ha)	1597	294	813	1604
		(mg/kg)	713	131	363	716
Exchangeable Aluminium	(cmol./kg)	0.01	0.03	0.00	0.00	
	(kg/ha)	2	6	1	0	
	(mg/kg)	1	3	0	0	
Exchangeable Hydrogen	(cmol./kg)	0.00	0.05	0.00	0.00	
	(kg/ha)	0	1	0	0	
	(mg/kg)	0	1	0	0	
Effective Cation Exchange Capacity (ECEC) (cmol./kg)		**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	20.64	15.22	29.49	33.03
	Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	25.5	56.6	54.9	49.7
	Magnesium (%)		56.4	36.1	38.3	39.8
	Potassium (%)		3.0	3.0	1.4	1.0
Sodium - ESP (%)	15.0		3.8	5.4	9.4	
Aluminium (%)	0.0		0.2	0.0	0.0	
Hydrogen	0.0		0.3	0.0	0.0	
Calcium/Magnesium Ratio		**Calculation - Calcium / Magnesium (cmol./kg)	0.5	1.6	1.4	1.2
pH		**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	6.18	5.18	6.42	7.40
Colour (Munsell Soil Colour Classification) - Hue/Colour		**Inhouse	7.5YR	7.5YR	7.5YR	7.5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma		**Inhouse	5/6	3/3	3/3	3/4
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion		**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 37	Sample 38	Sample 39	Sample 40
M14 40-50	M15 0-10	M15 20-30	M15 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/37	H0640/38	H0640/39	H0640/40

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 41 M15 65-75 Soil Maxwell	Sample 42 M16 0-10 Soil Maxwell	Sample 43 M16 20-30 Soil Maxwell	Sample 44 M16 40-50 Soil Maxwell
H0640/41	H0640/42	H0640/43	H0640/44
8.69	5.70	7.10	8.27
0.385	0.100	0.093	0.284
23.73	8.19	11.22	10.33
10652	3678	5036	4636
4755	1642	2248	2069
13.40	5.70	11.70	13.95
3649	1551	3185	3797
1629	692	1422	1695
0.32	1.31	0.39	0.31
283	1150	343	274
126	513	153	123
4.63	0.35	1.59	3.37
2383	183	817	1733
1064	81	365	774
0.00	0.02	0.02	0.01
0	3	4	3
0	1	2	1
0.00	0.06	0.00	0.00
0	1	0	0
0	1	0	0
42.09	15.63	24.91	27.97
56.4	52.4	45.0	36.9
31.8	36.4	47.0	49.9
0.8	8.4	1.6	1.1
11.0	2.3	6.4	12.0
0.0	0.1	0.1	0.0
0.0	0.4	0.0	0.0
1.8	1.4	1.0	0.7
8.01	5.36	6.44	7.67
5YR	7.5YR	7.5YR	5YR
3/4	3/3	3/4	3/3
None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 41	Sample 42	Sample 43	Sample 44
M15 65-75	M16 0-10	M16 20-30	M16 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/41	H0640/42	H0640/43	H0640/44

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
- ** NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

80 samples supplied by SLR Consulting Australia Pty Ltd on 23/05/18. Lab Job No.H0640

Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 45 M16 65-75 Soil Maxwell	Sample 46 M17 0-10 Soil Maxwell	Sample 47 M17 20-30 Soil Maxwell	Sample 48 M17 40-50 Soil Maxwell
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Parameter	Method reference	H0640/45	H0640/46	H0640/47	H0640/48
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	8.62	5.10	6.14	6.86
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.708	0.049	0.021	0.025
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	19.67	5.31	5.22	4.61
(kg/ha)		8829	2382	2344	2068
(mg/kg)		3942	1064	1046	923
Exchangeable Magnesium (cmol./kg)		15.39	2.75	1.88	2.33
(kg/ha)		4189	748	513	633
(mg/kg)		1870	334	229	283
Exchangeable Potassium (cmol./kg)		0.30	0.63	0.19	0.13
(kg/ha)		260	554	163	110
(mg/kg)		116	247	73	49
Exchangeable Sodium (cmol./kg)		5.95	0.47	0.16	0.31
(kg/ha)		3062	242	81	159
(mg/kg)		1367	108	36	71
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.02	0.17	0.01	0.01
(kg/ha)		3	34	2	2
(mg/kg)		2	15	1	1
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.16	0.00	0.00
(kg/ha)		0	4	0	0
(mg/kg)		0	2	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	41.32	9.48	7.46	7.38
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	47.6	56.0	70.0	62.5
Magnesium (%)		37.2	29.0	25.3	31.5
Potassium (%)		0.7	6.7	2.5	1.7
Sodium - ESP (%)		14.4	5.0	2.1	4.2
Aluminium (%)		0.0	1.8	0.2	0.1
Hydrogen		0.0	1.7	0.0	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	1.3	1.9	2.8	2.0
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	7.97	4.61	5.75	6.36
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	5YR	7.5YR	5YR	5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	3/3	3/3	3/4	3/4
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 45	Sample 46	Sample 47	Sample 48
M16 65-75	M17 0-10	M17 20-30	M17 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/45	H0640/46	H0640/47	H0640/48

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
- ** NATA accreditation does not cover the performance of this service.
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 49

M17 65-75

Soil

Maxwell

Sample 50

M18 0-10

Soil

Maxwell

Sample 51

M18 20-30

Soil

Maxwell

Sample 52

M18 40-50

Soil

Maxwell

Parameter	Method reference	H0640/49	H0640/50	H0640/51	H0640/52
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	7.54	5.76	6.29	6.34
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.108	0.022	0.143	0.318
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	7.29	1.43	1.98	1.92
(kg/ha)		3272	643	889	863
(mg/kg)		1460	287	397	385
Exchangeable Magnesium (cmol./kg)		8.01	1.62	6.34	6.24
(kg/ha)		2180	442	1725	1699
(mg/kg)		973	197	770	759
Exchangeable Potassium (cmol./kg)		0.22	0.21	0.41	0.36
(kg/ha)		197	185	359	319
(mg/kg)		88	83	160	143
Exchangeable Sodium (cmol./kg)		1.77	0.30	1.65	2.20
(kg/ha)		910	154	851	1134
(mg/kg)		406	69	380	506
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.02	0.04	0.03	0.02
(kg/ha)		3	8	6	4
(mg/kg)		1	4	3	2
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.03	0.01	0.00
(kg/ha)		0	1	0	0
(mg/kg)		0	0	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	17.30	3.63	10.41	10.75
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	42.1	39.4	19.0	17.9
Magnesium (%)		46.3	44.7	60.9	58.1
Potassium (%)		1.3	5.8	3.9	3.4
Sodium - ESP (%)		10.2	8.2	15.9	20.5
Aluminium (%)		0.1	1.1	0.3	0.2
Hydrogen		0.0	0.7	0.1	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	0.9	0.9	0.3	0.3
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	6.84	4.95	5.57	5.85
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	10YR	10YR	10YR	10YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	4/4	5/4	5/6	5/8
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 49	Sample 50	Sample 51	Sample 52
M17 65-75	M18 0-10	M18 20-30	M18 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/49	H0640/50	H0640/51	H0640/52

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
- ** NATA accreditation does not cover the performance of this service.
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 53 M18 65-75 Soil Maxwell	Sample 54 M19 0-10 Soil Maxwell	Sample 55 M19 20-30 Soil Maxwell	Sample 56 M19 40-50 Soil Maxwell
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Parameter	Method reference	H0640/53	H0640/54	H0640/55	H0640/56
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	6.65	5.65	5.98	6.69
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.907	0.039	0.027	0.046
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	2.07	10.35	10.43	18.00
(kg/ha)		930	4645	4683	8079
(mg/kg)		415	2074	2090	3607
Exchangeable Magnesium (cmol./kg)		6.97	3.06	2.80	7.11
(kg/ha)		1899	833	761	1934
(mg/kg)		848	372	340	864
Exchangeable Potassium (cmol./kg)		0.46	0.72	0.46	0.45
(kg/ha)		399	632	405	391
(mg/kg)		178	282	181	174
Exchangeable Sodium (cmol./kg)		3.36	0.20	0.21	0.48
(kg/ha)		1733	103	106	249
(mg/kg)		774	46	47	111
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.01	0.01	0.01	0.01
(kg/ha)		2	2	2	2
(mg/kg)		1	1	1	1
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.02	0.00	0.00
(kg/ha)		0	1	0	0
(mg/kg)		0	0	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	12.88	14.36	13.90	26.04
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	16.1	72.1	75.0	69.1
Magnesium (%)		54.2	21.3	20.1	27.3
Potassium (%)		3.5	5.0	3.3	1.7
Sodium - ESP (%)		26.1	1.4	1.5	1.9
Aluminium (%)		0.1	0.1	0.1	0.0
Hydrogen		0.0	0.2	0.0	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	0.3	3.4	3.7	2.5
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	6.20	5.52	5.48	6.17
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	10YR	7.5YR	7.5YR	7.5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	5/8	2.5/2	2.5/2	3/3
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 53	Sample 54	Sample 55	Sample 56
M18 65-75	M19 0-10	M19 20-30	M19 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/53	H0640/54	H0640/55	H0640/56

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 57 M19 65-75 Soil Maxwell	Sample 58 M22 0-10 Soil Maxwell	Sample 59 M22 20-30 Soil Maxwell	Sample 60 M22 40-50 Soil Maxwell
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Parameter	Method reference	H0640/57	H0640/58	H0640/59	H0640/60
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	7.77	5.59	6.73	7.56
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.059	0.027	0.120	0.248
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	22.33	4.07	6.05	4.70
(kg/ha)		10024	1827	2716	2108
(mg/kg)		4475	815	1213	941
Exchangeable Magnesium (cmol./kg)		9.74	1.88	7.55	6.83
(kg/ha)		2652	511	2054	1858
(mg/kg)		1184	228	917	829
Exchangeable Potassium (cmol./kg)		0.37	0.66	0.40	0.35
(kg/ha)		322	582	350	305
(mg/kg)		144	260	156	136
Exchangeable Sodium (cmol./kg)		0.81	0.20	1.69	2.66
(kg/ha)		416	104	871	1368
(mg/kg)		186	46	389	611
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.01	0.06	0.02	0.04
(kg/ha)		2	12	5	8
(mg/kg)		1	5	2	3
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.05	0.00	0.00
(kg/ha)		0	1	0	0
(mg/kg)		0	0	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	33.26	6.92	15.71	14.56
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	67.1	58.8	38.5	32.3
Magnesium (%)		29.3	27.1	48.0	46.9
Potassium (%)		1.1	9.6	2.5	2.4
Sodium - ESP (%)		2.4	2.9	10.8	18.2
Aluminium (%)		0.0	0.8	0.1	0.3
Hydrogen		0.0	0.7	0.0	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	2.3	2.2	0.8	0.7
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	7.07	4.83	6.03	6.85
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	5YR	10YR	10YR	10YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	3/4	3/4	4/3	4/6
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 57	Sample 58	Sample 59	Sample 60
M19 65-75	M22 0-10	M22 20-30	M22 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/57	H0640/58	H0640/59	H0640/60

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 61 M22 65-75	Sample 62 M24 0-10	Sample 63 M24 20-30	Sample 64 M24 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell

Parameter	Method reference	H0640/61	H0640/62	H0640/63	H0640/64
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	7.47	5.40	6.70	7.71
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.815	0.095	0.127	0.486
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	5.42	4.74	8.37	6.80
(kg/ha)		2432	2128	3758	3050
(mg/kg)		1086	950	1678	1362
Exchangeable Magnesium (cmol./kg)		8.08	2.79	5.88	10.20
(kg/ha)		2200	759	1601	2776
(mg/kg)		982	339	715	1239
Exchangeable Potassium (cmol./kg)		0.37	0.80	0.82	0.49
(kg/ha)		325	704	716	430
(mg/kg)		145	314	320	192
Exchangeable Sodium (cmol./kg)		4.29	0.56	0.64	3.28
(kg/ha)		2210	287	329	1687
(mg/kg)		987	128	147	753
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.04	0.03	0.02	0.04
(kg/ha)		7	6	5	9
(mg/kg)		3	3	2	4
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.06	0.00	0.00
(kg/ha)		0	1	0	0
(mg/kg)		0	1	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	18.20	8.98	15.74	20.80
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	29.8	52.8	53.2	32.7
Magnesium (%)		44.4	31.0	37.4	49.0
Potassium (%)		2.0	9.0	5.2	2.4
Sodium - ESP (%)		23.6	6.2	4.1	15.8
Aluminium (%)		0.2	0.3	0.2	0.2
Hydrogen		0.0	0.6	0.0	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	0.7	1.7	1.4	0.7
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	6.97	4.98	6.22	7.21
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	10YR	7.5YR	7.5YR	7.5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	4/4	3/4	4/6	4/4
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 61	Sample 62	Sample 63	Sample 64
M22 65-75	M24 0-10	M24 20-30	M24 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/61	H0640/62	H0640/63	H0640/64

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
- ** NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPOI

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 65 M24 65-75 Soil Maxwell	Sample 66 M25 0-10 Soil Maxwell	Sample 67 M25 20-30 Soil Maxwell	Sample 68 M25 40-50 Soil Maxwell
H0640/65	H0640/66	H0640/67	H0640/68
8.51	6.11	7.68	8.22
1.107	0.096	0.141	0.547
17.55	10.12	13.56	13.69
7879	4544	6089	6143
3517	2029	2718	2743
9.52	5.88	11.62	13.19
2592	1602	3163	3591
1157	715	1412	1603
0.28	1.33	0.73	0.55
243	1164	642	486
108	520	287	217
5.02	0.49	2.88	5.59
2584	253	1482	2877
1153	113	662	1284
0.05	0.02	0.02	0.02
10	4	5	5
5	2	2	2
0.00	0.04	0.00	0.00
0	1	0	0
0	0	0	0
32.42	17.89	28.82	33.04
54.1	56.6	47.1	41.4
29.4	32.9	40.3	39.9
0.9	7.4	2.5	1.7
15.5	2.7	10.0	16.9
0.2	0.1	0.1	0.1
0.0	0.2	0.0	0.0
1.8	1.7	1.2	1.0
7.96	6.02	6.78	7.64
10YR	10YR	10YR	10YR
5/6	3/2	3/4	4/2
7.5YR, 5/6, 20%	None	None	None

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10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 65	Sample 66	Sample 67	Sample 68
M24 65-75	M25 0-10	M25 20-30	M25 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/65	H0640/66	H0640/67	H0640/68

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 69 M25 65-75 Soil Maxwell	Sample 70 M26 0-10 Soil Maxwell	Sample 71 M26 20-30 Soil Maxwell	Sample 72 M26 40-50 Soil Maxwell
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Parameter	Method reference	H0640/69	H0640/70	H0640/71	H0640/72
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	8.56	6.37	8.67	8.87
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	1.012	0.089	0.388	0.908
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	18.39	7.84	24.50	21.72
(kg/ha)		8253	3521	11000	9751
(mg/kg)		3684	1572	4911	4353
Exchangeable Magnesium (cmol./kg)		11.41	5.48	16.17	17.54
(kg/ha)		3105	1493	4402	4776
(mg/kg)		1386	667	1965	2132
Exchangeable Potassium (cmol./kg)		0.41	0.99	0.97	0.70
(kg/ha)		357	864	852	609
(mg/kg)		159	386	380	272
Exchangeable Sodium (cmol./kg)		7.27	0.99	4.44	8.76
(kg/ha)		3742	509	2288	4513
(mg/kg)		1670	227	1021	2015
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.02	0.02	0.02	0.01
(kg/ha)		5	5	5	3
(mg/kg)		2	2	2	1
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.00	0.00	0.00
(kg/ha)		0	0	0	0
(mg/kg)		0	0	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	37.49	15.32	46.11	48.74
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	49.0	51.2	53.1	44.6
Magnesium (%)		30.4	35.8	35.1	36.0
Potassium (%)		1.1	6.4	2.1	1.4
Sodium - ESP (%)		19.4	6.4	9.6	18.0
Aluminium (%)		0.1	0.1	0.1	0.0
Hydrogen		0.0	0.0	0.0	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	1.6	1.4	1.5	1.2
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	8.12	6.08	7.93	8.24
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	10YR	10YR	10YR	10YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	5/4	3/2	4/1	4/2
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	10YR, 5/3, 40%

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 69	Sample 70	Sample 71	Sample 72
M25 65-75	M26 0-10	M26 20-30	M26 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/69	H0640/70	H0640/71	H0640/72

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
- ** NATA accreditation does not cover the performance of this service.
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPOI

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 73 M26 65-75 Soil Maxwell	Sample 74 M27 0-10 Soil Maxwell	Sample 75 M27 20-30 Soil Maxwell	Sample 76 M27 40-50 Soil Maxwell
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Parameter	Method reference	H0640/73	H0640/74	H0640/75	H0640/76
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	8.85	5.83	7.31	8.06
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	1.105	0.061	0.333	0.852
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	21.43	5.16	6.83	4.75
(kg/ha)		9622	2315	3067	2134
(mg/kg)		4295	1034	1369	953
Exchangeable Magnesium (cmol./kg)		17.22	2.32	7.91	8.40
(kg/ha)		4688	632	2154	2287
(mg/kg)		2093	282	962	1021
Exchangeable Potassium (cmol./kg)		0.64	0.83	0.85	0.53
(kg/ha)		560	726	741	465
(mg/kg)		250	324	331	208
Exchangeable Sodium (cmol./kg)		9.81	0.26	2.02	4.24
(kg/ha)		5053	135	1038	2186
(mg/kg)		2256	60	464	976
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.03	0.04	0.04	0.04
(kg/ha)		5	7	9	8
(mg/kg)		2	3	4	4
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.00	0.00	0.00	0.00
(kg/ha)		0	0	0	0
(mg/kg)		0	0	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	49.13	8.61	17.65	17.97
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	43.6	59.9	38.7	26.5
Magnesium (%)		35.1	27.0	44.8	46.8
Potassium (%)		1.3	9.6	4.8	3.0
Sodium - ESP (%)		20.0	3.1	11.4	23.6
Aluminium (%)		0.1	0.4	0.2	0.2
Hydrogen		0.0	0.0	0.0	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	1.2	2.2	0.9	0.6
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	8.22	5.54	6.90	7.69
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	10YR	7.5YR	7.5YR	7.5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	4/4	3/4	4/6	5/6
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 73	Sample 74	Sample 75	Sample 76
M26 65-75	M27 0-10	M27 20-30	M27 40-50
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/73	H0640/74	H0640/75	H0640/76

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture'
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 77 M30 0-10	Sample 78 M30 20-30	Sample 79 M30 40-50	Sample 80 M30 65-75
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell

Parameter	Method reference	H0640/77	H0640/78	H0640/79	H0640/80
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	6.04	8.07	8.58	8.62
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.113	0.156	0.400	0.568
Exchangeable Calcium (cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	12.76	12.58	9.75	7.13
(kg/ha)		5729	5647	4377	3201
(mg/kg)		2558	2521	1954	1429
Exchangeable Magnesium (cmol./kg)		8.00	12.03	11.39	10.64
(kg/ha)		2179	3275	3100	2896
(mg/kg)		973	1462	1384	1293
Exchangeable Potassium (cmol./kg)		1.39	0.55	0.45	0.45
(kg/ha)		1214	481	397	395
(mg/kg)		542	215	177	176
Exchangeable Sodium (cmol./kg)		0.68	3.84	5.78	6.66
(kg/ha)		349	1976	2975	3431
(mg/kg)		156	882	1328	1532
Exchangeable Aluminium (cmol./kg)	**Inhouse S37 (KCl)	0.01	0.03	0.03	0.02
(kg/ha)		2	7	7	4
(mg/kg)		1	3	3	2
Exchangeable Hydrogen (cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.03	0.00	0.00	0.00
(kg/ha)		1	0	0	0
(mg/kg)		0	0	0	0
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	22.87	29.03	27.40	24.90
Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	55.8	43.3	35.6	28.6
Magnesium (%)		35.0	41.4	41.6	42.7
Potassium (%)		6.1	1.9	1.7	1.8
Sodium - ESP (%)		3.0	13.2	21.1	26.8
Aluminium (%)		0.1	0.1	0.1	0.1
Hydrogen		0.1	0.0	0.0	0.0
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	1.6	1.0	0.9	0.7
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	5.68	7.12	7.76	7.85
Colour (Munsell Soil Colour Classification) - Hue/Colour	**Inhouse	7.5YR	7.5YR	7.5YR	7.5YR
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	3/2	4/4	4/4	4/4
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 77	Sample 78	Sample 79	Sample 80
M30 0-10	M30 20-30	M30 40-50	M30 65-75
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell
H0640/77	H0640/78	H0640/79	H0640/80

Parameter	Method reference
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture'
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
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ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

80 samples supplied by SLR Consulting Australia Pty Ltd on 23/05/18. Lab Job No.H0640

Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Analysis requested by Murray Fraser. Your Job: SLR630.12463		Heavy Soil	Medium Soil	Light Soil	Sandy Soil				
Sample ID:									
Crop:									
Client:		Clay	Clay Loam	Loam	Loamy Sand				
	Parameter	Method reference				Indicative guidelines only- refer Note 6			
	pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)				6.5	6.5	6.3	6.3
	Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)				0.200	0.150	0.120	0.100
	Exchangeable Calcium	(cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	15.6	10.8	5.0	1.9		
		(kg/ha)		7000	4816	2240	840		
		(mg/kg)		3125	2150	1000	375		
	Exchangeable Magnesium	(cmol./kg)		2.4	1.7	1.2	0.60		
		(kg/ha)		650	448	325	168		
		(mg/kg)		290	200	145	75		
	Exchangeable Potassium	(cmol./kg)		0.60	0.50	0.40	0.30		
		(kg/ha)		526	426	336	224		
		(mg/kg)		235	190	150	100		
	Exchangeable Sodium	(cmol./kg)		0.3	0.26	0.22	0.11		
		(kg/ha)		155	134	113	57		
		(mg/kg)		69	60	51	25		
Exchangeable Aluminium	(cmol./kg)	**Inhouse S37 (KCl)	0.6	0.5	0.4	0.2			
	(kg/ha)		121	101	73	30			
	(mg/kg)		54	45	32	14			
Exchangeable Hydrogen	(cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.6	0.5	0.4	0.2			
	(kg/ha)		13	11	8	3			
	(mg/kg)		6	5	4	2			
Effective Cation Exchange Capacity (ECEC) (cmol./kg)		**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)		20.1	14.3	7.8	3.3		
	Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	77.6	75.7	65.6	57.4			
	Magnesium (%)		11.9	11.9	15.7	18.1			
	Potassium (%)		3.0	3.5	5.2	9.1			
Sodium - ESP (%)	1.5		1.8	2.9	3.3				
Aluminium (%)	6.0		7.1	10.5	12.1				
Hydrogen									
Calcium/Magnesium Ratio		**Calculation - Calcium / Magnesium (cmol./kg)		6.5	6.4	4.2	3.2		
pH		**Rayment & Lyons 2011 - 4B4 (CaCl ₂)		..					
Colour (Munsell Soil Colour Classification) - Hue/Colour		**Inhouse		..					
Colour (Munsell Soil Colour Classification) - Value/Chroma		**Inhouse		..					
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion		**Inhouse		..					

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Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Heavy Soil	Medium Soil	Light Soil	Sandy Soil
Clay	Clay Loam	Loam	Loamy Sand
Parameter	Method reference	Indicative guidelines only- refer Note 6	

Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agricult
- Conversions for 1 cmol./kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an o
- ** NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
- This report is not to be reproduced except in full.

Quality Checked: Kris Saville
 Agricultural Co-Ordinator

KS

GRAIN SIZE ANALYSIS (hydrometer and sieving techniques)

80 soil samples supplied by SLR Consulting on 23rd May, 2018 - Lab Job No. H0640.

Analysis requested by Murray Fraser

(10 Kings Road NEW LAMBTON 2305)

SAMPLE ID	Lab Code	MOISTURE CONTENT (% of water in air-dry sample)	TOTAL GRAVEL > 2 mm (% of total oven-dry equivalent)	COARSE SAND 200-2000 µm (0.2-2.0 mm) (% of total oven-dry equivalent)	FINE SAND 20-200 µm (0.02-0.2 mm) (% of total oven-dry equivalent)	SILT 2-20 µm ISSS (% of total oven-dry equivalent)	CLAY < 2 µm (% of total oven-dry equivalent)
M1 0-10	H0640/1	2.4%	0.5%	10.8%	34.2%	38.7%	15.9%
M1 20-30	H0640/2	3.3%	0.0%	7.6%	27.2%	28.6%	36.6%
M1 40-50	H0640/3	2.5%	0.4%	9.7%	34.3%	29.2%	26.3%
M1 65-75	H0640/4	3.0%	0.2%	9.8%	32.9%	17.9%	39.2%
M3 0-10	H0640/5	0.9%	0.0%	26.2%	60.3%	12.8%	0.7%
M3 20-30	H0640/6	0.8%	0.0%	19.1%	68.0%	10.7%	2.2%
M3 40-50	H0640/7	2.7%	0.0%	14.4%	49.7%	8.6%	27.3%
M5 0-10	H0640/8	4.4%	0.5%	5.0%	27.6%	22.2%	44.8%
M5 20-30	H0640/9	4.3%	3.1%	5.5%	25.9%	7.3%	58.1%
M5 40-50	H0640/10	4.3%	2.0%	3.5%	12.7%	10.1%	71.8%
M5 65-75	H0640/11	3.4%	0.7%	4.6%	24.2%	13.1%	57.4%
M6 0-5	H0640/12	1.1%	2.8%	34.6%	36.1%	23.9%	2.6%
M6 10-20	H0640/13	1.1%	2.1%	37.1%	34.2%	20.4%	6.2%
M6 30-40	H0640/14	3.1%	0.6%	27.4%	17.6%	17.5%	37.0%
M6 50-60	H0640/15	2.9%	0.8%	40.6%	14.3%	12.1%	32.2%
M7 0-10	H0640/16	1.8%	0.3%	19.3%	43.1%	20.5%	16.8%
M7 20-30	H0640/17	2.4%	0.0%	9.0%	22.8%	20.8%	47.4%
M7 40-50	H0640/18	0.0%	0.0%	8.6%	41.3%	11.3%	38.8%
M8 0-10	H0640/19	4.0%	0.8%	5.7%	43.7%	17.7%	32.0%
M8 20-30	H0640/20	15.2%	0.4%	4.3%	4.5%	25.2%	65.5%
M8 40-50	H0640/21	3.4%	0.0%	3.9%	30.9%	15.3%	49.8%
M8 65-75	H0640/22	1.4%	0.3%	4.7%	17.8%	19.9%	57.4%
M9 0-10	H0640/23	2.9%	0.6%	6.7%	26.3%	37.6%	28.7%
M9 20-30	H0640/24	3.0%	0.2%	3.6%	19.8%	30.9%	45.4%
M9 40-50	H0640/25	3.0%	1.4%	2.8%	26.4%	21.8%	47.7%
M9 65-75	H0640/26	3.0%	0.4%	2.9%	14.0%	17.2%	65.4%
M11 0-10	H0640/27	2.3%	0.1%	8.3%	39.3%	23.8%	28.6%
M11 20-30	H0640/28	4.0%	0.0%	4.5%	20.6%	15.6%	59.3%
M11 40-50	H0640/29	3.2%	0.0%	3.0%	31.9%	14.2%	50.9%
M11 65-75	H0640/30	3.5%	0.1%	2.5%	25.7%	22.3%	49.5%
M12 0-10	H0640/31	6.1%	1.2%	7.7%	21.5%	25.8%	43.7%
M12 20-30	H0640/32	5.2%	2.8%	5.5%	19.5%	22.2%	50.1%
M12 40-50	H0640/33	6.4%	1.6%	11.9%	18.8%	18.4%	49.4%
M12 65-75	H0640/34	5.8%	6.8%	11.9%	24.7%	12.6%	44.0%
M14 0-10	H0640/35	1.8%	0.3%	15.4%	65.6%	6.9%	12.0%
M14 20-30	H0640/36	2.1%	0.0%	4.1%	37.4%	18.7%	39.8%
M14 40-50	H0640/37	2.0%	0.0%	1.5%	18.7%	36.7%	43.1%
M15 0-10	H0640/38	1.6%	0.4%	17.6%	38.3%	29.9%	13.9%
M15 20-30	H0640/39	2.6%	0.5%	11.5%	29.5%	7.5%	50.9%
M15 40-50	H0640/40	4.5%	0.0%	18.0%	22.7%	28.4%	30.9%
M15 65-75	H0640/41	2.7%	3.9%	22.6%	28.5%	15.3%	29.7%
M16 0-10	H0640/42	1.9%	0.0%	15.9%	27.7%	25.7%	30.7%
M16 20-30	H0640/43	2.6%	0.0%	9.7%	24.8%	9.4%	56.1%
M16 40-50	H0640/44	2.7%	0.0%	10.4%	18.1%	18.3%	53.2%
M16 65-75	H0640/45	3.1%	0.3%	2.3%	33.8%	11.9%	51.7%
M17 0-10	H0640/46	1.9%	0.0%	25.5%	57.3%	7.4%	9.7%
M17 20-30	H0640/47	1.5%	0.4%	28.5%	42.1%	19.1%	9.9%
M17 40-50	H0640/48	1.2%	8.2%	25.7%	54.7%	10.2%	1.2%
M17 65-75	H0640/49	6.5%	1.2%	15.5%	28.9%	16.6%	37.9%
M18 0-10	H0640/50	0.4%	0.1%	6.7%	70.0%	20.7%	2.5%
M18 20-30	H0640/51	0.0%	0.9%	7.8%	40.2%	17.6%	33.6%
M18 40-50	H0640/52	0.0%	0.5%	7.8%	54.4%	9.0%	28.3%
M18 65-75	H0640/53	0.0%	0.7%	9.7%	51.1%	12.5%	26.1%
M19 0-10	H0640/54	0.0%	0.0%	20.2%	42.7%	20.3%	16.8%
M19 20-30	H0640/55	0.0%	0.0%	19.1%	34.8%	26.1%	20.0%
M19 40-50	H0640/56	1.1%	0.0%	12.2%	39.4%	17.9%	30.5%
M19 65-75	H0640/57	0.5%	0.0%	15.6%	38.4%	16.1%	29.8%
M22 0-10	H0640/58	0.0%	0.7%	7.4%	51.6%	32.6%	7.7%
M22 20-30	H0640/59	0.0%	0.2%	7.0%	54.0%	16.1%	22.8%
M22 40-50	H0640/60	0.0%	0.0%	3.4%	42.7%	31.9%	22.1%
M22 65-75	H0640/61	1.6%	0.0%	2.8%	52.1%	16.9%	28.2%
M24 0-10	H0640/62	1.7%	0.5%	3.0%	47.7%	29.5%	19.3%
M24 20-30	H0640/63	1.6%	0.0%	1.3%	35.4%	18.8%	44.4%
M24 40-50	H0640/64	1.5%	0.0%	0.8%	32.7%	22.9%	43.6%
M24 65-75	H0640/65	2.9%	9.7%	1.5%	31.8%	23.5%	33.5%
M25 0-10	H0640/66	3.3%	0.0%	6.5%	47.7%	25.7%	20.1%
M25 20-30	H0640/67	1.2%	0.0%	3.4%	26.5%	22.8%	47.3%
M25 40-50	H0640/68	1.7%	0.8%	2.7%	18.1%	20.7%	57.6%
M25 65-75	H0640/69	2.3%	5.3%	3.9%	23.3%	32.0%	35.5%
M26 0-10	H0640/70	8.5%	4.9%	15.9%	25.7%	38.4%	15.1%
M26 20-30	H0640/71	3.7%	3.9%	8.9%	37.0%	14.3%	35.9%
M26 40-50	H0640/72	3.8%	13.9%	7.9%	18.5%	26.8%	32.9%
M26 65-75	H0640/73	4.1%	5.5%	9.5%	25.2%	11.9%	48.0%
M27 0-10	H0640/74	1.0%	0.4%	5.0%	65.3%	14.2%	15.2%
M27 20-30	H0640/75	1.4%	0.0%	2.0%	38.0%	17.1%	42.9%
M27 40-50	H0640/76	1.8%	0.0%	3.4%	38.2%	14.1%	44.3%
M30 0-10	H0640/77	8.2%	1.0%	12.6%	31.6%	4.0%	50.7%
M30 20-30	H0640/78	13.8%	0.6%	11.5%	29.0%	5.7%	53.2%
M30 40-50	H0640/79	12.9%	3.8%	15.1%	25.9%	9.3%	45.9%
M30 65-75	H0640/80	8.8%	12.1%	24.6%	21.5%	8.4%	33.5%

Note:

1: The Hydrometer Analysis method was used to determine the percentage sand, silt and clay,

modified from SOP meth004 (California Dept of Pesticide Regulation), using method of Gee & Bauder (1986),

in *Methods of Soil Analysis. Part 1* Agron. Monogr. 9 (2nd Ed). Klute, A., American Soc. of Agronomy Inc., Soil Sci. Soc. America Inc., Madison WI: 383-411.

2: Australian Standard 1289.3.8.1-1997 (see attached)



checked:

Graham Lancaster (Nata signatory)

Laboratory Manager

ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

4 samples supplied by SLR Consulting Australia Pty Ltd on 28/05/18. Lab Job No.H0793

Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Analysis requested by Murray Fraser. Your Job: SLR630.12463		Sample 1 D18 0-10 Soil Maxwell	Sample 2 D18 20-30 Soil Maxwell	Sample 3 D18 40-50 Soil Maxwell	Sample 4 D18 65-75 Soil Maxwell	
Sample ID:						
Crop:						
Client:						
	Parameter	Method reference	H0793/1	H0793/2	H0793/3	H0793/4
	pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	5.93	7.95	8.64	8.56
	Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.269	0.332	1.161	1.583
	Exchangeable Calcium (cmol./kg) (kg/ha) (mg/kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	5.76	11.73	23.33	23.35
			2585	5264	10471	10483
			1154	2350	4675	4680
	Exchangeable Magnesium (cmol./kg) (kg/ha) (mg/kg)		5.02	17.43	22.94	24.44
			1366	4744	6245	6653
			610	2118	2788	2970
	Exchangeable Potassium (cmol./kg) (kg/ha) (mg/kg)		0.62	0.61	0.62	0.74
			541	531	544	647
			242	237	243	289
	Exchangeable Sodium (cmol./kg) (kg/ha) (mg/kg)		0.93	5.24	11.65	13.47
			481	2700	5999	6935
			215	1205	2678	3096
Exchangeable Aluminium (cmol./kg) (kg/ha) (mg/kg)	**Inhouse S37 (KCl)	0.02	0.02	0.03	0.02	
		4	3	6	3	
		2	1	3	1	
Exchangeable Hydrogen (cmol./kg) (kg/ha) (mg/kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.02	0.00	0.00	0.00	
		0	0	0	0	
		0	0	0	0	
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	12.37	35.02	58.57	62.01	
Calcium (%) Magnesium (%) Potassium (%) Sodium - ESP (%) Aluminium (%) Hydrogen	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	46.6	33.5	39.8	37.7	
		40.6	49.8	39.2	39.4	
		5.0	1.7	1.1	1.2	
		7.6	15.0	19.9	21.7	
		0.2	0.0	0.1	0.0	
		0.2	0.0	0.0	0.0	
Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)	1.1	0.7	1.0	1.0	
pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)	5.63	7.28	8.07	8.07	
Colour (Munsell Soil Color Classification)	**Inhouse	5YR	5YR	2.5YR	5YR	
Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse	3/3	3/4	2.5/4	3/4	
Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse	None	None	None	None	

4 samples supplied by SLR Consulting Australia Pty Ltd on 28/05/18. Lab Job No.H0793

Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Sample 1	Sample 2	Sample 3	Sample 4
D18 0-10	D18 20-30	D18 40-50	D18 65-75
Soil	Soil	Soil	Soil
Maxwell	Maxwell	Maxwell	Maxwell

Parameter	Method reference	H0793/1	H0793/2	H0793/3	H0793/4
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Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing: Collingwood.
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Handbook.
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens daycare centres, preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agricultural soil results'.
- Conversions for 1 cmol_e/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over-estimate
- ** NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
- This report is not to be reproduced except in full.

Quality Checked: Kris Saville
 Agricultural Co-Ordinator

KS



ROUTINE AGRICULTURAL SOIL ANALYSIS REPORT

4 samples supplied by SLR Consulting Australia Pty Ltd on 28/05/18. Lab Job No.H0793

Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Analysis requested by Murray Fraser. Your Job: SLR630.12463		Heavy Soil	Medium Soil	Light Soil	Sandy Soil				
Sample ID:									
Crop:									
Client:		Clay	Clay Loam	Loam	Loamy Sand				
	Parameter	Method reference				Indicative guidelines only- refer Note 6			
	pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)				6.5	6.5	6.3	6.3
	Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)				0.200	0.150	0.120	0.100
	Exchangeable Calcium	(cmol./kg)	Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	15.6	10.8	5.0	1.9		
		(kg/ha)		7000	4816	2240	840		
		(mg/kg)		3125	2150	1000	375		
	Exchangeable Magnesium	(cmol./kg)		2.4	1.7	1.2	0.60		
		(kg/ha)		650	448	325	168		
		(mg/kg)		290	200	145	75		
	Exchangeable Potassium	(cmol./kg)		0.60	0.50	0.40	0.30		
		(kg/ha)		526	426	336	224		
		(mg/kg)		235	190	150	100		
	Exchangeable Sodium	(cmol./kg)		0.3	0.26	0.22	0.11		
		(kg/ha)		155	134	113	57		
		(mg/kg)		69	60	51	25		
Exchangeable Aluminium	(cmol./kg)	**Inhouse S37 (KCl)	0.6	0.5	0.4	0.2			
	(kg/ha)		121	101	73	30			
	(mg/kg)		54	45	32	14			
Exchangeable Hydrogen	(cmol./kg)	**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	0.6	0.5	0.4	0.2			
	(kg/ha)		13	11	8	3			
	(mg/kg)		6	5	4	2			
Effective Cation Exchange Capacity (ECEC) (cmol./kg)		**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol./kg)		20.1	14.3	7.8	3.3		
	Calcium (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	77.6	75.7	65.6	57.4			
	Magnesium (%)		11.9	11.9	15.7	18.1			
	Potassium (%)		3.0	3.5	5.2	9.1			
	Sodium - ESP (%)		1.5	1.8	2.9	3.3			
	Aluminium (%)		6.0	7.1	10.5	12.1			
	Hydrogen								
	Calcium/Magnesium Ratio	**Calculation - Calcium / Magnesium (cmol./kg)		6.5	6.4	4.2	3.2		
	pH	**Rayment & Lyons 2011 - 4B4 (CaCl ₂)		..					
	Colour (Munsell Soil Color Classification)	**Inhouse		..					
	Colour (Munsell Soil Colour Classification) - Value/Chroma	**Inhouse		..					
	Colour (Munsell Soil Colour Classification) - Mottle Hue, Value/Chroma, Proportion	**Inhouse		..					

4 samples supplied by SLR Consulting Australia Pty Ltd on 28/05/18. Lab Job No.H0793

Analysis requested by Murray Fraser. Your Job: SLR630.12463

10 Kings Road NEW LAMBTON NSW 2305

Sample ID:

Crop:

Client:

Heavy Soil	Medium Soil	Light Soil	Sandy Soil
Clay	Clay Loam	Loam	Loamy Sand
Parameter		Method reference	
		Indicative guidelines only- refer Note 6	

Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Test
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens d preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agriculture'
- Conversions for 1 cmol./kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over
- ** NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
- This report is not to be reproduced except in full.

Quality Checked: Kris Saville
 Agricultural Co-Ordinator

KS

GRAIN SIZE ANALYSIS (hydrometer and sieving techniques)

4 soil samples supplied by SLR Consulting on 28th May, 2018 - Lab Job No. H0485.

Analysis requested by Murray Fraser. Your Project: Maxwell BSAL 630.12463.

(10 Kings Road NEW LAMBTON 2305)

SAMPLE ID	Lab Code	MOISTURE CONTENT (% of water in air-dry sample)	TOTAL GRAVEL > 2 mm (% of total oven-dry equivalent)	COARSE SAND 200-2000 µm (0.2-2.0 mm) (% of total oven-dry equivalent)	FINE SAND 20-200 µm (0.02-0.2 mm) (% of total oven-dry equivalent)	SILT 2-20 µm ISSS (% of total oven-dry equivalent)	CLAY < 2 µm (% of total oven-dry equivalent)	Total soil fractions (incl. Gravel)
D18 0-10	H0793/1	2.5%	0.8%	12.2%	34.1%	21.5%	31.4%	100.0%
D18 20-30	H0793/2	4.6%	0.1%	4.9%	28.0%	2.6%	64.5%	100.0%
D18 40-50	H0793/3	4.1%	2.1%	7.0%	21.2%	9.6%	60.1%	100.0%
D18 65-75	H0793/4	4.0%	1.0%	5.3%	26.1%	3.7%	64.0%	100.0%

Note:

1: The Hydrometer Analysis method was used to determine the percentage sand, silt and clay, modified from SOP meth004 (California Dept of Pesticide Regulation), using method of Gee & Bauder (1986), in *Methods of Soil Analysis. Part 1* Agron. Monogr. 9 (2nd Ed). Klute, A., American Soc. of Agronomy Inc., Soil Sci. Soc. America Inc., Madison WI: 383-411.

2: Australian Standard 1289.3.8.1-1997 (see attached)



CERTIFICATE OF ANALYSIS

Work Order	: EB1447699	Page	: 1 of 18
Client	: SLR Consulting Australia Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	: MS ADELE CALANDRA	Contact	: Customer Services EB
Address	: LEVEL 1, 241 DENNISON STREET BROADMEADOW NSW 2292	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: acalandra@slrconsulting.com	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: +61 02 4920 3000	Telephone	: +61-7-3243 7222
Facsimile	: +61 02 4961 3360	Facsimile	: +61-7-3243 7218
Project	: 630.11145	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 03-Dec-2014 13:40
C-O-C number	: ----	Date Analysis Commenced	: 08-Dec-2014
Sampler	: ----	Issue Date	: 12-Dec-2014 18:35
Site	: ----		
Quote number	: ----	No. of samples received	: 80
		No. of samples analysed	: 80

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

- **ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl (Method 15G1) is a more suitable method for the determination of exchange acidity (H⁺ + Al³⁺).**
- **ED008 (Exchangeable Cations) Sample EB1447699069 shows poor duplicate results due to sample heterogeneity. Confirmed by visual inspection.**



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 1 0-10 cm	Site 1 20-30 cm	Site 1 50-60 cm	Site 1 80-90 cm	Site 2 0-10 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-001	EB1447699-002	EB1447699-003	EB1447699-004	EB1447699-005
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		5.8	6.8	8.1	8.7	6.1
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		61	35	159	492	85
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		4.5	4.4	9.3	12.2	5.5
^ Exchangeable Magnesium	----	0.1	meq/100g		1.9	2.8	10.8	12.6	6.3
^ Exchangeable Potassium	----	0.1	meq/100g		0.8	0.4	0.2	0.1	0.8
^ Exchangeable Sodium	----	0.1	meq/100g		<0.1	0.2	2.3	3.4	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		7.3	7.9	22.6	28.5	12.9



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 2 10-20 cm	Site 2 50-60 cm	Site 2 80-90 cm	Site 3 0-10 cm	Site 3 20-30 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-006	EB1447699-007	EB1447699-008	EB1447699-009	EB1447699-010
				Result	Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.7	8.2	8.2	6.2	6.9
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		89	727	926	62	36
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		6.0	5.2	2.6	16.4	22.9
^ Exchangeable Magnesium	----	0.1	meq/100g		8.6	12.9	7.5	6.5	9.9
^ Exchangeable Potassium	----	0.1	meq/100g		0.7	<0.1	<0.1	0.9	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		0.3	2.2	1.7	<0.1	0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		15.7	20.5	11.9	24.0	33.3



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 3 50-60 cm	Site 4 0-10 cm	Site 4 20-30 cm	Site 4 50-60 cm	Site 4 80-90 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-011	EB1447699-012	EB1447699-013	EB1447699-014	EB1447699-015
				Result	Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.6	6.6	8.4	8.8	8.8
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		102	126	357	916	1060
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		33.4	5.2	11.0	21.6	9.3
^ Exchangeable Magnesium	----	0.1	meq/100g		11.6	7.6	14.5	11.3	12.0
^ Exchangeable Potassium	----	0.1	meq/100g		0.1	0.7	0.3	0.1	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		0.2	0.5	2.7	1.8	2.6
^ Cation Exchange Capacity	----	0.1	meq/100g		45.4	14.0	28.7	34.9	24.1



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 5 0-5 cm	Site 5 20-30 cm	Site 5 40-50 cm	Site 7 0-5 cm	Site 7 10-20 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-016	EB1447699-017	EB1447699-018	EB1447699-019	EB1447699-020
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.7	7.2	7.9	5.6	6.6
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		102	52	236	51	80
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		9.7	12.9	13.1	1.4	1.4
^ Exchangeable Magnesium	----	0.1	meq/100g		3.8	10.0	7.7	0.7	1.2
^ Exchangeable Potassium	----	0.1	meq/100g		1.1	0.7	0.5	0.5	0.4
^ Exchangeable Sodium	----	0.1	meq/100g		<0.1	0.8	0.3	<0.1	0.3
^ Cation Exchange Capacity	----	0.1	meq/100g		14.7	24.5	21.7	2.8	3.3



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 7 50-60 cm	Site 7 80-90 cm	Site 8 0-10 cm	Site 8 20-30 cm	Site 8 50-60 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-021	EB1447699-022	EB1447699-023	EB1447699-024	EB1447699-025
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.6	8.6	6.4	7.4	8.5
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		494	518	98	113	275
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		7.2	5.4	23.7	27.4	41.8
^ Exchangeable Magnesium	----	0.1	meq/100g		6.7	6.7	10.2	13.1	13.1
^ Exchangeable Potassium	----	0.1	meq/100g		0.1	0.2	1.0	0.2	0.1
^ Exchangeable Sodium	----	0.1	meq/100g		3.2	3.4	0.1	1.0	0.9
^ Cation Exchange Capacity	----	0.1	meq/100g		17.2	15.8	35.1	41.8	55.9



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 9 0-5 cm	Site 9 20-30 cm	Site 9 50-60 cm	Site 9 80-90 cm	Site 10 0-10 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-026	EB1447699-027	EB1447699-028	EB1447699-029	EB1447699-030
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.3	7.6	7.8	8.8	6.8
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		109	229	763	781	42
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		4.8	4.4	5.7	3.6	18.3
^ Exchangeable Magnesium	----	0.1	meq/100g		5.9	6.1	16.4	12.3	7.6
^ Exchangeable Potassium	----	0.1	meq/100g		0.7	0.3	0.2	0.2	1.4
^ Exchangeable Sodium	----	0.1	meq/100g		0.4	1.0	5.2	4.4	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		11.9	11.8	27.5	20.5	27.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 10 20-30 cm	Site 10 50-60 cm	Site 10 80-90 cm	Site 11 0-5 cm	Site 11 5-15 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-031	EB1447699-032	EB1447699-033	EB1447699-034	EB1447699-035
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.8	8.1	8.0	7.2	7.8
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		58	167	233	81	82
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		20.6	35.8	34.2	15.4	12.9
^ Exchangeable Magnesium	----	0.1	meq/100g		11.7	15.4	15.4	6.2	6.7
^ Exchangeable Potassium	----	0.1	meq/100g		0.3	0.2	0.2	0.9	0.3
^ Exchangeable Sodium	----	0.1	meq/100g		0.1	0.4	0.3	0.1	0.7
^ Cation Exchange Capacity	----	0.1	meq/100g		32.8	51.9	50.1	22.6	20.6



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				Site 11 50-60 cm	Site 11 80-90 cm	Site 12 0-10 cm	Site 12 20-30 cm	Site 12 40-50 cm
Client sampling date / time				[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit	EB1447699-036	EB1447699-037	EB1447699-038	EB1447699-039	EB1447699-040
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.6	8.5	5.8	6.7	7.6
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	701	1180	57	43	198
ED008: Exchangeable Cations								
^ Exchangeable Calcium	----	0.1	meq/100g	13.2	31.2	5.4	4.4	9.0
^ Exchangeable Magnesium	----	0.1	meq/100g	16.1	16.4	3.3	3.4	15.7
^ Exchangeable Potassium	----	0.1	meq/100g	0.3	0.2	1.0	0.7	0.9
^ Exchangeable Sodium	----	0.1	meq/100g	3.9	3.9	<0.1	0.2	2.9
^ Cation Exchange Capacity	----	0.1	meq/100g	33.6	51.7	9.8	8.9	28.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 12 80-90 cm	Site 13 0-8 cm	Site 13 20-30 cm	Site 13 50-60 cm	Site 13 80-90 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-041	EB1447699-042	EB1447699-043	EB1447699-044	EB1447699-045
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		9.0	6.5	8.2	8.5	8.8
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		916	111	225	984	1160
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		22.1	8.8	13.9	34.3	32.1
^ Exchangeable Magnesium	----	0.1	meq/100g		14.3	7.2	15.6	19.7	20.5
^ Exchangeable Potassium	----	0.1	meq/100g		0.1	1.1	0.5	0.3	0.3
^ Exchangeable Sodium	----	0.1	meq/100g		3.6	0.2	2.8	3.7	4.9
^ Cation Exchange Capacity	----	0.1	meq/100g		40.3	17.4	32.8	58.0	57.8



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 14 0-5 cm	Site 14 20-30 cm	Site 14 50-60 cm	Site 14 80-90 cm	Site 16 0-10 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-046	EB1447699-047	EB1447699-048	EB1447699-049	EB1447699-050
				Result	Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.3	7.8	8.7	8.9	7.1
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		47	148	649	904	83
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		6.2	10.3	31.8	29.2	10.2
^ Exchangeable Magnesium	----	0.1	meq/100g		4.4	11.3	16.1	17.3	5.1
^ Exchangeable Potassium	----	0.1	meq/100g		0.8	0.4	0.2	0.2	1.1
^ Exchangeable Sodium	----	0.1	meq/100g		<0.1	1.5	2.2	2.6	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		11.5	23.6	50.4	49.4	16.6



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 16 20-30 cm	Site 16 50-60 cm	Site 20 0-10 cm	Site 20 20-30 cm	Site 20 50-60 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-051	EB1447699-052	EB1447699-053	EB1447699-054	EB1447699-055
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.2	8.9	7.2	8.5	8.8
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		98	320	156	200	481
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		11.1	34.2	5.6	20.2	25.0
^ Exchangeable Magnesium	----	0.1	meq/100g		8.2	11.8	4.6	11.4	11.2
^ Exchangeable Potassium	----	0.1	meq/100g		0.4	0.2	0.7	0.4	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		0.9	1.2	<0.1	0.6	1.1
^ Cation Exchange Capacity	----	0.1	meq/100g		20.7	47.6	11.0	32.6	37.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 20 80-90 cm	Site 21 0-8 cm	Site 21 20-30 cm	Site 21 50-60 cm	Site 22 0-10 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-056	EB1447699-057	EB1447699-058	EB1447699-059	EB1447699-060
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.9	6.7	8.7	8.8	8.2
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		732	110	274	391	170
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		23.4	8.3	12.4	32.0	45.9
^ Exchangeable Magnesium	----	0.1	meq/100g		11.8	5.8	13.0	12.3	7.0
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	1.0	0.3	0.2	1.2
^ Exchangeable Sodium	----	0.1	meq/100g		1.5	0.2	1.6	1.4	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		37.0	15.3	27.5	46.0	54.3



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 22 20-30 cm	Site 22 50-60 cm	Site 23 0-10 cm	Site 23 20-30 cm	Site 23 50-60 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-061	EB1447699-062	EB1447699-063	EB1447699-064	EB1447699-065
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.4	8.6	6.7	8.4	8.8
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		158	209	96	274	474
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		38.4	35.1	8.0	18.0	29.2
^ Exchangeable Magnesium	----	0.1	meq/100g		11.5	15.4	4.4	15.2	15.8
^ Exchangeable Potassium	----	0.1	meq/100g		0.3	0.3	1.0	0.5	0.3
^ Exchangeable Sodium	----	0.1	meq/100g		0.1	0.7	0.2	2.8	3.2
^ Cation Exchange Capacity	----	0.1	meq/100g		50.5	51.6	13.6	36.6	48.6



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 24 0-10 cm	Site 24 20-30 cm	Site 24 50-60 cm	Site 25 0-10 cm	Site 25 20-30 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-066	EB1447699-067	EB1447699-068	EB1447699-069	EB1447699-070
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.7	7.0	7.9	6.4	6.5
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		89	36	69	60	46
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		6.2	2.8	7.7	7.1	8.0
^ Exchangeable Magnesium	----	0.1	meq/100g		1.9	1.2	4.3	3.4	9.3
^ Exchangeable Potassium	----	0.1	meq/100g		0.9	0.8	1.6	1.1	0.7
^ Exchangeable Sodium	----	0.1	meq/100g		<0.1	<0.1	<0.1	<0.1	0.5
^ Cation Exchange Capacity	----	0.1	meq/100g		9.2	5.0	13.8	11.7	18.6



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 26 0-10 cm	Site 26 20-30 cm	Site 26 50-60 cm	Site 27 0-10 cm	Site 27 20-30 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-071	EB1447699-072	EB1447699-073	EB1447699-074	EB1447699-075
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.1	7.2	7.3	6.4	7.3
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		39	18	41	92	56
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		3.4	2.4	7.8	9.2	14.1
^ Exchangeable Magnesium	----	0.1	meq/100g		1.0	0.4	3.1	5.3	11.8
^ Exchangeable Potassium	----	0.1	meq/100g		0.7	0.3	0.7	1.1	0.4
^ Exchangeable Sodium	----	0.1	meq/100g		<0.1	<0.1	<0.1	<0.1	0.3
^ Cation Exchange Capacity	----	0.1	meq/100g		5.2	3.3	11.7	15.6	26.7



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 27 50-60 cm	Site 28 0-10 cm	Site 28 20-30 cm	Site 28 50-60 cm	Site 28 80-90 cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447699-076	EB1447699-077	EB1447699-078	EB1447699-079	EB1447699-080
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.3	6.3	7.0	6.9	7.9
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		219	31	17	11	47
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		34.9	2.5	2.3	1.3	3.5
^ Exchangeable Magnesium	----	0.1	meq/100g		15.3	0.7	0.4	0.3	2.3
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	0.5	0.4	0.3	0.3
^ Exchangeable Sodium	----	0.1	meq/100g		0.5	<0.1	<0.1	<0.1	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		50.9	3.8	3.3	1.9	6.4

CERTIFICATE OF ANALYSIS

Work Order	: EB1447707	Page	: 1 of 18
Client	: SLR Consulting Australia Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	: MS ADELE CALANDRA	Contact	: Customer Services EB
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Project	: 630.11145	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 03-Dec-2014 13:40
C-O-C number	: ----	Date Analysis Commenced	: 08-Dec-2014
Sampler	: ----	Issue Date	: 12-Dec-2014 12:41
Site	: ----		
Quote number	: ----	No. of samples received	: 81
		No. of samples analysed	: 76

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

- **ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl (Method 15G1) is a more suitable method for the determination of exchange acidity (H⁺ + Al³⁺).**



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 29 0-10cm	Site 29 20-30cm	Site 29 50-60cm	Site 29 80-90cm	Site 30 0-10cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-001	EB1447707-002	EB1447707-003	EB1447707-004	EB1447707-005
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.2	7.2	7.6	6.1	6.4
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		31	34	282	575	28
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		2.4	1.2	0.5	1.0	3.7
^ Exchangeable Magnesium	----	0.1	meq/100g		1.0	1.2	1.5	3.2	2.8
^ Exchangeable Potassium	----	0.1	meq/100g		0.5	0.2	<0.1	<0.1	0.7
^ Exchangeable Sodium	----	0.1	meq/100g		<0.1	0.2	0.8	1.4	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		4.0	2.8	2.9	5.8	7.4



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 30 20-30cm	Site 30 50-60cm	Site 30 90-100cm	Site 31 0-10cm	Site 31 20-30cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-006	EB1447707-007	EB1447707-008	EB1447707-009	EB1447707-010
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.3	8.6	8.1	5.9	7.1
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		158	860	798	35	213
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		8.2	19.2	2.3	5.4	8.3
^ Exchangeable Magnesium	----	0.1	meq/100g		6.8	11.4	11.0	3.0	13.5
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	0.3	0.2	0.6	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		1.2	2.1	3.7	<0.1	2.6
^ Cation Exchange Capacity	----	0.1	meq/100g		16.7	33.1	17.3	9.2	24.7



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 31 50-60cm	Site 31 80-90cm	Site 32 0-10cm	Site 32 20-30cm	Site 32 50-60cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-011	EB1447707-012	EB1447707-013	EB1447707-014	EB1447707-015
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.7	8.9	6.7	7.1	9.0
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		779	839	45	39	199
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		8.7	27.3	7.9	11.0	24.7
^ Exchangeable Magnesium	----	0.1	meq/100g		18.0	15.6	6.1	11.0	13.0
^ Exchangeable Potassium	----	0.1	meq/100g		0.3	0.2	1.0	0.8	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		4.4	3.0	<0.1	0.4	0.8
^ Cation Exchange Capacity	----	0.1	meq/100g		31.4	46.2	15.2	23.4	38.8



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 33 0-10cm	Site 33 40-50cm	Site 34 0-10cm	Site 34 20-30cm	Site 34 50-60cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-016	EB1447707-017	EB1447707-018	EB1447707-019	EB1447707-020
				Result	Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.0	8.8	5.9	6.9	8.2
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		51	339	26	36	141
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		7.1	17.4	8.2	9.0	9.6
^ Exchangeable Magnesium	----	0.1	meq/100g		11.3	17.4	4.8	5.0	6.1
^ Exchangeable Potassium	----	0.1	meq/100g		1.0	0.4	0.6	0.2	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		0.4	1.4	0.1	0.6	1.9
^ Cation Exchange Capacity	----	0.1	meq/100g		19.9	36.7	13.9	15.0	18.0



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 34 80-90cm	Site 35 0-10cm	Site 35 20-30cm	Site 35 50-60cm	Site 36 0-10cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-021	EB1447707-022	EB1447707-023	EB1447707-024	EB1447707-025
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.8	6.8	8.2	8.8	6.0
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		665	86	86	705	22
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		7.1	10.0	16.3	27.6	3.4
^ Exchangeable Magnesium	----	0.1	meq/100g		7.6	5.9	16.0	16.6	0.9
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	1.8	1.0	0.6	0.4
^ Exchangeable Sodium	----	0.1	meq/100g		3.2	<0.1	1.5	1.7	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		18.3	17.9	34.9	46.6	4.8



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 36 30-40cm	Site 36 50-60cm	Site 36 80-90cm	Site 38 0-10cm	Site 38 20-30cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-026	EB1447707-027	EB1447707-028	EB1447707-029	EB1447707-030
				Result	Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.9	7.4	7.8	6.7	7.4
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		9	33	55	86	90
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		2.1	9.1	12.1	7.6	9.3
^ Exchangeable Magnesium	----	0.1	meq/100g		0.8	6.8	10.9	4.7	12.6
^ Exchangeable Potassium	----	0.1	meq/100g		0.3	0.7	1.1	0.8	0.5
^ Exchangeable Sodium	----	0.1	meq/100g		<0.1	0.2	0.4	<0.1	0.8
^ Cation Exchange Capacity	----	0.1	meq/100g		3.2	16.9	24.6	13.2	23.3



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 38 50-60cm	Site 39 0-10cm	Site 39 30-40cm	Site 40 0-10cm	Site 40 20-30cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-031	EB1447707-032	EB1447707-033	EB1447707-034	EB1447707-035
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.8	6.4	7.2	6.9	8.3
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		388	56	64	51	267
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		27.5	8.2	11.9	6.8	8.4
^ Exchangeable Magnesium	----	0.1	meq/100g		14.9	4.0	10.6	4.8	14.8
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	0.8	0.4	0.8	0.6
^ Exchangeable Sodium	----	0.1	meq/100g		1.0	<0.1	0.6	<0.1	2.7
^ Cation Exchange Capacity	----	0.1	meq/100g		43.6	13.3	23.7	12.7	26.7



Analytical Results

Sub-Matrix: **SOIL**
 (Matrix: **SOIL**)

Client sample ID

				Site 40 50-60cm	Site 42 0-5cm	Site 42 20-30cm	Site 42 50-60cm	Site 43 0-10cm
Client sampling date / time				[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit	EB1447707-036	EB1447707-037	EB1447707-038	EB1447707-039	EB1447707-040
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.8	6.6	7.5	8.8	6.6
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	962	76	204	747	30
ED008: Exchangeable Cations								
^ Exchangeable Calcium	----	0.1	meq/100g	25.5	7.6	8.4	15.6	2.1
^ Exchangeable Magnesium	----	0.1	meq/100g	20.0	5.4	12.3	19.9	1.9
^ Exchangeable Potassium	----	0.1	meq/100g	0.3	1.0	0.7	0.4	0.4
^ Exchangeable Sodium	----	0.1	meq/100g	3.3	<0.1	1.3	2.5	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g	49.2	14.3	22.8	38.4	4.4



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 43 20-30cm	Site 43 50-60cm	Site 43 80-90cm	Site 46 0-10cm	Site 46 20-30cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-041	EB1447707-042	EB1447707-043	EB1447707-044	EB1447707-045
				Result	Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.8	9.0	9.1	6.6	7.9
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		104	450	467	83	230
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		3.3	1.6	2.2	7.2	13.0
^ Exchangeable Magnesium	----	0.1	meq/100g		10.1	7.1	6.6	4.0	8.9
^ Exchangeable Potassium	----	0.1	meq/100g		0.3	0.2	0.1	0.5	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		1.7	2.3	2.1	0.3	2.4
^ Cation Exchange Capacity	----	0.1	meq/100g		15.6	11.4	11.1	12.2	24.6



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 46 50-60cm	Site 46 80-90cm	Site 48 0-10cm	Site 48 20-30cm	Site 48 60-70cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-046	EB1447707-047	EB1447707-048	EB1447707-049	EB1447707-050
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.1	7.6	6.3	6.1	5.1
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		816	674	71	20	342
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		17.2	6.6	5.7	0.6	3.3
^ Exchangeable Magnesium	----	0.1	meq/100g		10.4	6.7	1.7	0.6	5.6
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	0.2	0.5	0.3	<0.1
^ Exchangeable Sodium	----	0.1	meq/100g		2.8	2.4	<0.1	<0.1	1.2
^ Cation Exchange Capacity	----	0.1	meq/100g		30.8	16.0	8.0	1.8	10.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 48 100-110cm	Site 49 0-10cm	Site 49 20-30cm	Site 49 60-70cm	Site 49 90-100cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-051	EB1447707-052	EB1447707-053	EB1447707-054	EB1447707-055
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.5	7.5	8.7	9.0	8.9
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		383	225	168	693	1120
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		5.3	24.5	38.7	32.1	30.4
^ Exchangeable Magnesium	----	0.1	meq/100g		7.7	6.8	13.6	19.8	20.4
^ Exchangeable Potassium	----	0.1	meq/100g		0.1	1.2	0.2	0.2	0.1
^ Exchangeable Sodium	----	0.1	meq/100g		2.0	<0.1	0.2	2.3	3.3
^ Cation Exchange Capacity	----	0.1	meq/100g		15.3	32.6	52.8	54.5	54.2



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 51 0-10cm	Site 51 10-20cm	Site 51 50-60cm	Site 51 90-100cm	Site 53 0-10cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-060	EB1447707-061	EB1447707-062	EB1447707-063	EB1447707-064
				Result	Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.5	6.8	7.7	8.2	6.2
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		32	23	194	329	82
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		2.8	1.8	3.4	2.6	4.5
^ Exchangeable Magnesium	----	0.1	meq/100g		1.2	1.4	6.5	5.4	2.6
^ Exchangeable Potassium	----	0.1	meq/100g		0.5	0.3	0.3	0.3	0.6
^ Exchangeable Sodium	----	0.1	meq/100g		<0.1	<0.1	1.0	1.0	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		4.5	3.6	11.4	9.6	7.8



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 53 10-20cm	Site 53 20-30cm	Site 53 50-60cm	Site 53 90-100cm	Site 54 0-10cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-065	EB1447707-066	EB1447707-067	EB1447707-068	EB1447707-069
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.9	7.4	8.0	8.7	6.2
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		32	149	577	1030	35
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		1.5	3.0	1.8	12.7	4.1
^ Exchangeable Magnesium	----	0.1	meq/100g		1.2	5.6	7.3	11.6	1.4
^ Exchangeable Potassium	----	0.1	meq/100g		0.4	0.4	0.2	0.2	0.7
^ Exchangeable Sodium	----	0.1	meq/100g		0.1	1.2	2.2	2.0	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		3.2	10.3	11.5	26.6	6.3



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 54 20-30cm	Site 54 50-60cm	Site 56 0-10cm	Site 56 20-30cm	Site 57 0-10cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-070	EB1447707-071	EB1447707-072	EB1447707-073	EB1447707-074
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.4	8.9	7.0	8.2	6.4
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		42	335	159	221	93
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		10.6	31.4	8.4	18.3	7.6
^ Exchangeable Magnesium	----	0.1	meq/100g		6.9	9.2	4.4	6.0	3.2
^ Exchangeable Potassium	----	0.1	meq/100g		0.6	0.2	0.8	0.6	0.8
^ Exchangeable Sodium	----	0.1	meq/100g		1.0	1.0	<0.1	0.2	<0.1
Cation Exchange Capacity	----	0.1	meq/100g		19.2	42.0	13.8	25.2	11.7



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 57 30-40cm	Site 58 0-10cm	Site 58 20-30cm	Site 59 0-10cm	Site 59 20-30cm
Client sampling date / time					[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit		EB1447707-075	EB1447707-076	EB1447707-077	EB1447707-078	EB1447707-079
				Result	Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.6	6.8	8.1	6.8	7.9
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		282	83	92	72	169
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		31.0	9.2	10.0	8.2	16.2
^ Exchangeable Magnesium	----	0.1	meq/100g		13.2	4.8	12.5	3.6	9.2
^ Exchangeable Potassium	----	0.1	meq/100g		0.3	0.9	0.3	0.9	0.5
^ Exchangeable Sodium	----	0.1	meq/100g		1.5	<0.1	1.1	<0.1	0.3
^ Cation Exchange Capacity	----	0.1	meq/100g		46.1	15.0	24.0	12.9	26.3



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 59 50-60cm	----	----	----	----
Client sampling date / time					[03-Dec-2014]	----	----	----	----
Compound	CAS Number	LOR	Unit		EB1447707-080	-----	-----	-----	-----
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.9	----	----	----	----
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		321	----	----	----	----
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		31.7	----	----	----	----
^ Exchangeable Magnesium	----	0.1	meq/100g		11.9	----	----	----	----
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	----	----	----	----
^ Exchangeable Sodium	----	0.1	meq/100g		0.9	----	----	----	----
^ Cation Exchange Capacity	----	0.1	meq/100g		44.7	----	----	----	----

CERTIFICATE OF ANALYSIS

Work Order	: EB1510282	Page	: 1 of 2
Client	: SLR Consulting Australia Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	: MS ADELE CALANDRA	Contact	: Customer Services EB
Address	: LEVEL 1, 241 DENNISON STREET BROADMEADOW NSW 2292	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: acalandra@slrconsulting.com	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: +61 02 4920 3000	Telephone	: +61-7-3243 7222
Facsimile	: +61 02 4961 3360	Facsimile	: +61-7-3243 7218
Project	: 630.11145	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 08-Jan-2015 08:05
C-O-C number	: ----	Date Analysis Commenced	: 09-Jan-2015
Sampler	: ----	Issue Date	: 15-Jan-2015 16:27
Site	: ----		
Quote number	: ----	No. of samples received	: 5
		No. of samples analysed	: 5

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				Site 40 80-90cm	Site 52 0-10cm	Site 52 20-30cm	Site 52 50-60cm	Site 52 90-100cm
Client sampling date / time				[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]	[03-Dec-2014]
Compound	CAS Number	LOR	Unit	EB1510282-001	EB1510282-002	EB1510282-003	EB1510282-004	EB1510282-005
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.9	7.1	8.2	8.7	9.0
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	893	142	455	1040	1140
ED008: Exchangeable Cations								
^ Exchangeable Calcium	----	0.1	meq/100g	18.0	6.0	20.5	26.6	30.9
^ Exchangeable Magnesium	----	0.1	meq/100g	18.4	5.1	11.7	15.1	12.2
^ Exchangeable Potassium	----	0.1	meq/100g	0.2	0.8	0.3	0.3	0.3
^ Exchangeable Sodium	----	0.1	meq/100g	2.2	0.2	1.3	3.2	2.4
^ Cation Exchange Capacity	----	0.1	meq/100g	38.9	12.2	34.0	45.2	46.0

SOIL TEST REPORT

Page 1 of 7

Scone Research Centre

REPORT NO: SCO14/252R1

REPORT TO: Adele Calandra
SLR Consulting
10 Kings Road
New Lambton NSW 2305

REPORT ON: One hundred and sixty soil samples
Your ref: 630.11145

PRELIMINARY RESULTS
ISSUED: Not issued

REPORT STATUS: Final

DATE REPORTED: 15 December 2014

METHODS: Information on test procedures can be obtained from Scone
Research Centre

TESTING CARRIED OUT ON SAMPLE AS RECEIVED
THIS DOCUMENT MAY NOT BE REPRODUCED EXCEPT IN FULL



SR Young
(Laboratory Manager)

SOIL CONSERVATION SERVICE
Scone Research Centre

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Report No: SCO14/252R1
Client Reference: Adele Calandra
SLR Consulting
10 Kings Road
New Lambton NSW 2305

Lab No	Method	P7B/2 Particle Size Analysis (%)					Colour	
	Sample Id	clay	silt	f sand	c sand	gravel	Dry	Moist
1	Site 1 0-10 cm	15	22	41	22	<1	7.5YR 4/4	7.5YR 3/3
2	Site 1 20-30 cm	17	14	28	22	19	7.5YR 5/3	7.5YR 4/2
3	Site 1 50-60 cm	58	13	20	9	<1	7.5YR 4/6	7.5YR 3/4
4	Site 1 80-90 cm	54	12	23	11	<1	7.5YR 4/6	7.5YR 3/4
5	Site 2 0-10 cm	39	11	29	13	8	10YR 5/2	10YR 3/2
6	Site 2 10-20 cm	50	13	23	13	1	10YR 5/2	10YR 3/2
7	Site 2 50-60 cm	48	11	26	13	2	10YR 5/2	10YR 4/2
8	Site 2 80-90 cm	46	11	26	13	4	10YR 5/3	10YR 4/3
9	Site 3 0-10 cm	34	28	33	5	<1	7.5YR 4/3	7.5YR 3/2
10	Site 3 20-30 cm	59	18	20	3	<1	5YR 4/4	5YR 3/4
11	Site 3 50-60 cm	42	18	26	13	1	5YR 4/4	7.5YR 3/3
12	Site 4 0-10 cm	29	10	36	20	5	7.5YR 5/2	7.5YR 4/1
13	Site 4 20-30 cm	53	9	23	14	1	10YR 5/2	10YR 4/2
14	Site 4 50-60 cm	40	6	29	18	7	10YR 5/3	10YR 4/3
15	Site 4 80-90 cm	48	9	22	16	5	10YR 6/4	10YR 5/4
16	Site 5 0-5 cm	21	12	34	29	4	7.5YR 5/3	7.5YR 3/2
17	Site 5 20-30 cm	42	14	21	23	<1	10YR 5/4	10YR 4/4
18	Site 5 40-50 cm	43	15	18	24	<1	10YR 4/4	10YR 4/4
19	Site 7 0-5 cm	3	17	45	30	5	10YR 5/3	10YR 3/3
20	Site 7 10-20 cm	12	17	37	30	4	10YR 6/3	10 R 4/3
21	Site 7 50-60 cm	27	22	28	22	1	10YR 6/4	10YR 5/4
22	Site 7 80-90 cm	35	23	16	24	2	10YR 5/4	10YR 4/4
23	Site 8 0-10 cm	44	25	26	5	<1	7.5YR 3/3	7.5 R 3/3
24	Site 8 20-30 cm	61	20	17	2	<1	7.5YR 3/4	7.5YR 3/4
25	Site 8 50-60 cm	49	18	22	10	1	7.5YR 5/3	7.5YR 4/4
26	Site 9 0-5 cm	13	30	45	11	1	10YR 4/4	10YR 3/3
27	Site 9 20-30 cm	17	35	36	12	<1	10YR 5/3	10YR 3/3
28	Site 9 50-60 cm	65	18	13	4	0	7.5YR 4/3	10YR 4/4
29	Site 9 80-90 cm	51	23	21	5	<1	7.5YR 4/6	7.5YR 4/6

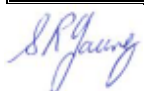


SOIL CONSERVATION SERVICE
Scone Research Centre

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Report No: SCO14/252R1
Client Reference: Adele Calandra
SLR Consulting
10 Kings Road
New Lambton NSW 2305

Lab No	Method	P7B/2 Particle Size Analysis (%)					Colour	
	Sample Id	clay	silt	f sand	c sand	gravel	Dry	Moist
30	Site 10 0-10 cm	34	29	30	7	<1	10YR 4/3	10YR 3/3
31	Site 10 20-30 cm	54	23	19	4	0	7.5YR 3/4	7.5YR 3/4
32	Site 10 50-60 cm	58	25	14	3	<1	7.5YR 4/4	7.5YR 3/4
33	Site 10 80-90 cm	56	13	18	12	1	7.5YR 4/4	7.5YR 4/4
34	Site 11 0-10 cm	38	14	32	15	1	10YR 4/3	10YR 3/3
35	Site 11 20-30 cm	41	16	27	15	1	10YR 4/3	10YR 3/3
36	Site 11 50-60 cm	58	12	19	10	1	10YR 4/3	10YR 3/3
37	Site 11 80-90 cm	61	22	10	7	<1	10YR 6/4	10YR 5/6
38	Site 12 0-5 cm	19	21	40	18	2	10YR 5/3	10YR 3/3
39	Site 12 5-15 cm	22	24	33	18	3	10YR 5/3	10YR 3/3
40	Site 12 40-50 cm	58	13	20	9	<1	10YR 5/3	10YR 4/3
41	Site 12 80-90 cm	46	21	32	1	<1	10YR 6/3	10YR 5/4
42	Site 13 0-8 cm	26	11	46	15	2	10YR 4/3	10YR 3/3
43	Site 13 20-30 cm	61	8	24	7	<1	10YR 4/3	10YR 3/3
44	Site 13 50-60 cm	62	11	18	8	1	7.5YR 5/4	7.5YR 4/6
45	Site 13 80-90 cm	68	8	16	8	<1	7.5YR 5/4	7.5YR 4/6
46	Site 14 0-5 cm	20	16	44	19	1	10YR 4/3	10YR 3/3
47	Site 14 20-30 cm	44	8	29	19	<1	10YR 4/3	10YR 4/3
48	Site 14 50-60 cm	51	11	24	13	1	7.5YR 5/4	7.5YR 4/6
49	Site 14 80-90 cm	49	14	25	12	<1	7.5YR 6/4	7.5YR 5/6
50	Site 16 0-10 cm	29	16	39	15	1	7.5YR 4/4	7.5YR 3/4
51	Site 16 20-30 cm	43	18	26	12	1	10YR 6/4	10YR 4/6
52	Site 16 50-60 cm	47	13	24	15	1	10YR 5/4	10YR 4/6
53	Site 20 0-10 cm	20	14	26	32	8	10YR 4/3	10YR 3/3
54	Site 20 20-30 cm	35	13	25	26	1	10YR 5/4	10YR 4/4
55	Site 20 50-60 cm	33	13	23	28	3	7.5YR 5/4	7.5YR 4/6
56	Site 20 80-90 cm	40	13	21	25	1	10YR 6/4	10YR 5/6
57	Site 21 0-8 cm	24	17	41	17	1	7.5YR 4/3	7.5YR 3/4
58	Site 21 20-30 cm	45	14	26	15	<1	7.5YR 4/4	7.5YR 4/4
59	Site 21 50-60 cm	30	21	37	12	<1	7.5YR 5/4	7.5YR 4/6



SOIL CONSERVATION SERVICE**Scone Research Centre**

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Report No: SCO14/252R1
Client Reference: Adele Calandra
SLR Consulting
10 Kings Road
New Lambton NSW 2305

Lab No	Method	P7B/2 Particle Size Analysis (%)					Colour	
	Sample Id	clay	silt	f sand	c sand	gravel	Dry	Moist
60	Site 22 0-10 cm	35	18	34	12	1	10YR 4/3	10YR 3/3
61	Site 22 20-30 cm	43	31	18	7	1	10YR 6/4	10YR 5/4
62	Site 22 50-60 cm	46	26	21	6	1	10YR 6/4	10YR 4/6
63	Site 23 0-10 cm	15	26	38	14	7	10YR 5/3	10YR 3/3
64	Site 23 20-30 cm	58	19	17	6	<1	10YR 4/2	10YR 3/3
65	Site 23 50-60 cm	55	17	16	9	3	2.5Y 4/2	2.5Y 3/3
66	Site 24 0-10 cm	10	15	35	40	<1	7.5YR 4/3	7.5YR 3/3
67	Site 24 20-30 cm	12	17	38	32	1	5YR 6/3	5YR 4/4
68	Site 24 50-60 cm	46	13	21	20	0	5YR 5/6	5YR 4/6
69	Site 25 0-10 cm	14	21	46	15	4	10YR 4/4	10YR 3/3
70	Site 25 20-30 cm	51	16	24	9	<1	7.5YR 5/6	7.5YR 4/6
71	Site 26 0-10 cm	10	13	31	46	<1	10YR 5/3	10YR 3/3
72	Site 26 20-30 cm	10	12	33	43	2	7.5YR 6/3	7.5YR 4/4
73	Site 26 50-60 cm	41	12	15	31	1	7.5YR 5/6	7.5YR 5/6
74	Site 27 0-10 cm	18	20	50	11	1	7.5YR 4/4	7.5YR 2.5/3
75	Site 27 20-30 cm	49	11	34	6	0	7.5YR 4/4	7.5YR 3/4
76	Site 27 50-60 cm	42	26	24	7	1	7.5YR 5/6	7.5YR 4/6
77	Site 28 0-10 cm	4	11	19	65	1	10YR 5/3	10YR 3/3
78	Site 28 20-30 cm	5	14	18	60	3	10YR 5/3	10YR 3/3
79	Site 28 50-60 cm	5	12	16	54	13	10YR 7/2	10YR 6/4
80	Site 28 80-90 cm	32	8	16	30	14	2.5Y 7/4	2.5Y 6/4
81	Site 29 0-10 cm	12	15	32	38	3	10YR 5/3	10YR 3/3
82	Site 29 20-30 cm	13	16	31	36	4	10YR 7/2	10YR 6/2
83	Site 29 50-60 cm	34	9	25	28	4	10YR 7/3	10YR 6/3
84	Site 29 80-90 cm	31	3	36	30	<1	7.5YR 5/6	7.5YR 4/6
85	Site 30 0-10 cm	21	12	32	29	6	10YR 5/2	10YR 3/2
86	Site 30 20-30 cm	31	11	25	27	6	10YR 5/2	10YR 3/2
87	Site 30 50-60 cm	54	9	16	18	3	10YR 5/3	10YR 4/3
88	Site 30 90-100 cm	58	29	11	2	0	2.5Y 7/4	2.5Y 6/4



SOIL CONSERVATION SERVICE
Scone Research Centre

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Report No: SCO14/252R1
Client Reference: Adele Calandra
SLR Consulting
10 Kings Road
New Lambton NSW 2305

Lab No	Method	P7B/2 Particle Size Analysis (%)					Colour	
	Sample Id	clay	silt	f sand	c sand	gravel	Dry	Moist
89	Site 31 0-10 cm	20	20	42	17	1	10YR 4/3	10YR 3/3
90	Site 31 20-30 cm	64	8	21	7	<1	7.5YR 4/4	7.5YR 3/4
91	Site 31 50-60 cm	65	9	17	8	1	7.5YR 4/6	5YR 4/4
92	Site 31 80-90 cm	65	8	17	10	<1	7.5YR 5/6	7.5YR 5/6
93	Site 32 0-10 cm	33	29	25	12	1	7.5YR 5/3	7.5YR 4/3
94	Site 32 20-30 cm	55	27	12	6	<1	10YR 5/3	10YR 4/3
95	Site 32 50-60 cm	45	30	12	7	6	10YR 5/3	10YR 4/3
96	Site 33 0-10 cm	42	22	25	7	4	10YR 4/4	10YR 3/3
97	Site 33 40-50 cm	58	23	13	4	2	10YR 5/4	10YR 4/3
98	Site 34 0-10 cm	27	30	35	8	<1	10YR 5/2	10YR 3/2
99	Site 34 20-30 cm	29	18	37	16	<1	10YR 5/3	10YR 4/2
100	Site 34 50-60 cm	28	21	28	23	<1	7.5YR 5/1	7.5YR 3/1
101	Site 34 80-90 cm	41	11	21	27	<1	10YR 6/4	10YR 5/4
102	Site 35 0-10 cm	27	20	27	16	10	7.5YR 5/2	7.5YR 3/2
103	Site 35 20-30 cm	54	14	19	11	2	7.5YR 5/3	7.5 YR 4/2
104	Site 35 50-60 cm	58	12	18	10	2	7.5YR 5/3	7.5YR 4/3
105	Site 36 0-10 cm	5	15	30	47	3	7.5YR 5/2	7.5YR 3/2
106	Site 36 30-40 cm	8	15	33	31	13	7.5YR 7/2	7.5YR 5/2
107	Site 36 50-60 cm	36	13	27	23	1	10YR 6/4	10YR 5/4
108	Site 36 80-90 cm	48	13	24	14	1	10YR 6/3	10YR 5/3
109	Site 38 0-10 cm	19	36	36	8	1	7.5YR 4/3	7.5YR 3/3
110	Site 38 20-30 cm	58	23	15	3	1	7.5YR 5/4	5YR 4/3
111	Site 38 50-60 cm	48	26	16	7	3	7.5YR 5/4	7.5YR 4/4
112	Site 39 0-10 cm	22	31	38	9	<1	7.5YR 4/3	7.5YR 3/3
113	Site 39 30-40 cm	60	23	14	3	<1	5YR 5/4	5YR 4/3
114	Site 40 0-10 cm	22	24	41	11	2	7.5YR 5/3	7.5YR 3/3
115	Site 40 20-30 cm	53	16	24	7	<1	7.5YR 5/4	7.5YR 4/4
116	Site 40 50-60 cm	57	15	22	6	<1	5YR 5/4	5YR 4/4



SOIL CONSERVATION SERVICE**Scone Research Centre**

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Report No: SCO14/252R1
Client Reference: Adele Calandra
SLR Consulting
10 Kings Road
New Lambton NSW 2305

Lab No	Method	P7B/2 Particle Size Analysis (%)					Colour	
	Sample Id	clay	silt	f sand	c sand	gravel	Dry	Moist
117	Site 42 0-5 cm	24	21	36	15	4	10YR 5/2	10YR 4/2
118	Site 42 20-30 cm	52	21	20	5	2	7.5YR 5/3	7.5YR 4/2
119	Site 42 50-60 cm	71	20	7	2	<1	10YR 6/2	10YR 5/2
120	Site 43 0-10 cm	10	18	34	37	1	7.5YR 6/2	7.5YR 4/2
121	Site 43 20-30 cm	34	14	22	30	<1	10YR 6/3	10YR 5/3
122	Site 43 50-60 cm	32	14	23	31	<1	10YR 6/4	10YR 5/4
123	Site 43 80-90 cm	34	10	24	28	4	7.5YR 5/4	7.5YR 4/4
124	Site 46 0-10 cm	20	29	40	11	<1	10YR 5/3	10YR 4/2
125	Site 46 20-30 cm	56	21	19	4	0	10YR 5/3	10YR 4/3
126	Site 46 50-60 cm	55	21	20	4	<1	10YR 5/4	10YR 4/4
127	Site 46 80-90 cm	49	23	24	4	0	7.5YR 5/3	7.5YR 4/3
128	Site 48 0-10 cm	9	16	28	45	2	7.5YR 5/2	7.5YR 3/2
129	Site 48 20-30 cm	8	11	27	45	9	10YR 7/2	10YR 5/3
130	Site 48 60-70 cm	39	7	25	27	2	2.5Y 7/4	2.5Y 6/4
131	Site 48 100-110 cm	34	9	28	26	3	10YR 5/4	10YR 4/4
132	Site 49 0-10 cm	39	18	29	13	1	10YR 4/2	10YR 3/2
133	Site 49 20-30 cm	63	17	15	5	<1	2.5Y 6/3	2.5Y 5/3
134	Site 49 60-70 cm	64	13	16	6	1	2.5Y 6/3	2.5Y 5/4
135	Site 49 90-100 cm	65	15	15	5	<1	10YR 6/3	10YR 5/4
136	Site 50 0-10 cm	nt	nt	nt	nt	nt	nt	nt
137	Site 50 20-30 cm	nt	nt	nt	nt	nt	nt	nt
138	Site 50 50-60 cm	nt	nt	nt	nt	nt	nt	nt
139	Site 50 80-90 cm	nt	nt	nt	nt	nt	nt	nt
140	Site 51 0-10 cm	7	11	49	32	1	10YR 5/4	10YR 4/4
141	Site 51 10-20 cm	13	12	50	25	<1	7.5YR 6/4	7.5YR 5/6
142	Site 51 50-60 cm	46	9	31	14	<1	5YR 5/6	5YR 5/6
143	Site 51 90-100 cm	28	3	42	27	<1	5YR 5/6	5YR 5/6

nt-not tested



SOIL CONSERVATION SERVICE
Scone Research Centre

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Report No: SCO14/252R1
Client Reference: Adele Calandra
SLR Consulting
10 Kings Road
New Lambton NSW 2305

Lab No	Method	P7B/2 Particle Size Analysis (%)					Colour	
	Sample Id	clay	silt	f sand	c sand	gravel	Dry	Moist
144	Site 53 0-10 cm	14	16	44	25	1	10YR 5/4	10YR 4/4
145	Site 53 10-20 cm	15	23	42	19	1	10YR 6/3	10YR 4/4
146	Site 53 20-30 cm	62	11	18	9	<1	5YR 4/6	5YR 4/6
147	Site 53 50-60 cm	66	9	17	6	2	5YR 4/6	5YR 4/6
148	Site 53 90-100 cm	47	12	29	12	<1	10YR 4/6	10YR 4/6
149	Site 54 0-10 cm	14	14	47	22	3	10YR 4/4	10YR 3/4
150	Site 54 20-30 cm	55	11	25	9	<1	7.5YR 4/4	7.5YR 4/4
151	Site 54 50-60 cm	44	30	15	10	1	7.5YR 5/6	7.5YR 4/6
152	Site 56 0-10 cm	29	20	35	12	4	7.5YR 5/4	7.5YR 4/4
153	Site 56 20-30 cm	55	16	23	5	1	10YR 5/4	10YR 4/4
154	Site 57 0-10 cm	19	22	35	22	2	10YR 4/2	10YR 3/2
155	Site 57 30-40 cm	57	15	12	10	6	10YR 5/4	10YR 4/4
156	Site 58 0-10 cm	21	18	34	17	10	10YR 5/3	10YR 3/3
157	Site 58 20-30 cm	57	17	18	7	1	10YR 5/4	10YR 4/4
158	Site 59 0-10 cm	24	19	37	18	2	10YR 4/3	10YR 3/3
159	Site 59 20-30 cm	52	13	22	11	2	10YR 5/4	10YR 4/4
160	Site 59 50-60 cm	47	22	17	11	3	7.5YR 5/4	7.5YR 4/6
161	Site 40 80-90 cm	40	51	7	2	0	10YR 7/3	10YR 6/4
162	Site 52 0-10 cm	26	18	37	17	2	7.5YR 5/3	7.5YR 3/4
163	Site 52 20-30 cm	58	15	18	9	<1	7.5YR 4/4	7.5YR 4/4
164	Site 52 50-60 cm	56	13	20	10	1	7.5YR 4/6	7.5YR 4/6
165	Site 52 90-100 cm	54	30	12	4	<1	10YR 6/4	10YR 5/6



END OF TEST REPORT

CERTIFICATE OF ANALYSIS

Work Order	: EB1511046	Page	: 1 of 12
Client	: SLR Consulting Australia Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	: MR A KOPPERS	Contact	: Customer Services EB
Address	: LEVEL 1, 241 DENNISON STREET BROADMEADOW NSW 2292	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: akoppers@slrconsulting.com	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: +61 02 4908 4500	Telephone	: +61-7-3243 7222
Facsimile	: +61 02 4908 4501	Facsimile	: +61-7-3243 7218
Project	: 630.11145_2015	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 20-Jan-2015 13:05
C-O-C number	: ----	Date Analysis Commenced	: 22-Jan-2015
Sampler	: ----	Issue Date	: 31-Jan-2015 19:27
Site	: ----		
Quote number	: ----	No. of samples received	: 49
		No. of samples analysed	: 49

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Greg Vogel	Laboratory Manager	Brisbane Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

- **ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl (Method 15G1) is a more suitable method for the determination of exchange acidity (H⁺ + Al³⁺).**



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 15 0-10 cm	Site 15 20-30 cm	Site 15 50-60 cm	Site 15 80-90 cm	Site 45 0-10 cm
Client sampling date / time					[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]
Compound	CAS Number	LOR	Unit		EB1511046-001	EB1511046-002	EB1511046-003	EB1511046-004	EB1511046-005
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.4	7.2	8.0	8.5	7.3
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		74	80	591	858	113
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		13.1	17.4	17.4	26.1	13.5
^ Exchangeable Magnesium	----	0.1	meq/100g		8.0	13.2	16.2	17.0	11.4
^ Exchangeable Potassium	----	0.1	meq/100g		1.1	0.8	0.4	0.2	0.4
^ Exchangeable Sodium	----	0.1	meq/100g		<0.1	1.0	2.3	2.9	1.5
^ Cation Exchange Capacity	----	0.1	meq/100g		22.2	32.3	36.4	46.3	26.8



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 45 20-30 cm	Site 45 50-60 cm	Site 55 0-10 cm	Site 55 20-30 cm	Site 55 50-60 cm
Client sampling date / time					[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]
Compound	CAS Number	LOR	Unit		EB1511046-006	EB1511046-007	EB1511046-008	EB1511046-009	EB1511046-010
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.5	8.5	6.4	7.5	8.0
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		45	768	164	67	605
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		8.4	29.5	8.3	9.3	26.6
^ Exchangeable Magnesium	----	0.1	meq/100g		6.1	12.3	3.5	5.5	6.7
^ Exchangeable Potassium	----	0.1	meq/100g		0.7	0.1	1.1	0.8	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		0.2	1.7	<0.1	0.3	0.8
^ Cation Exchange Capacity	----	0.1	meq/100g		15.4	43.7	12.9	15.9	34.3



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				Site 61 0-10 cm	Site 61 20-30 cm	Site 61 45-55 cm	Site 62 0-10 cm	Site 62 20-30 cm
Client sampling date / time				[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]
Compound	CAS Number	LOR	Unit	EB1511046-011	EB1511046-012	EB1511046-013	EB1511046-014	EB1511046-015
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	7.2	7.9	8.5	6.4	7.4
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	31	131	416	70	47
ED008: Exchangeable Cations								
^ Exchangeable Calcium	----	0.1	meq/100g	9.1	11.8	16.4	7.1	4.6
^ Exchangeable Magnesium	----	0.1	meq/100g	8.0	14.8	18.1	5.3	3.5
^ Exchangeable Potassium	----	0.1	meq/100g	1.2	0.6	0.2	0.6	0.2
^ Exchangeable Sodium	----	0.1	meq/100g	0.1	1.0	2.2	0.2	0.4
^ Cation Exchange Capacity	----	0.1	meq/100g	18.5	28.3	37.0	13.2	8.6



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 62 35-45 cm	Site 62 70-80 cm	Site 63 0-5 cm	Site 63 10-20 cm	Site 63 40-50 cm
Client sampling date / time					[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]
Compound	CAS Number	LOR	Unit		EB1511046-016	EB1511046-017	EB1511046-018	EB1511046-019	EB1511046-020
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.4	8.6	6.2	6.3	8.6
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		152	856	29	55	774
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		5.0	5.6	3.7	2.4	5.7
^ Exchangeable Magnesium	----	0.1	meq/100g		5.6	11.4	2.2	2.4	10.1
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	0.3	0.5	0.1	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		0.8	3.6	<0.1	0.4	3.4
^ Cation Exchange Capacity	----	0.1	meq/100g		11.6	20.8	6.4	5.3	19.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 63 80-90 cm	Site 65 0-10 cm	Site 65 40-50 cm	Site 65 60-70 cm	Site 65 80-90 cm
Client sampling date / time					[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]
Compound	CAS Number	LOR	Unit		EB1511046-021	EB1511046-022	EB1511046-023	EB1511046-024	EB1511046-025
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		8.7	6.9	8.1	8.4	8.6
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		873	61	527	1190	1310
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		16.2	8.6	10.1	24.7	18.6
^ Exchangeable Magnesium	----	0.1	meq/100g		12.2	5.8	10.8	15.9	20.0
^ Exchangeable Potassium	----	0.1	meq/100g		0.3	0.6	0.3	0.2	0.1
^ Exchangeable Sodium	----	0.1	meq/100g		3.3	0.4	3.0	4.4	7.1
^ Cation Exchange Capacity	----	0.1	meq/100g		31.9	15.5	24.2	45.1	45.8



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 68 0-10 cm	Site 68 15-25 cm	Site 68 50-60 cm	Site 68 75-85 cm	Site 70 0-10 cm
Client sampling date / time					[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]
Compound	CAS Number	LOR	Unit		EB1511046-026	EB1511046-027	EB1511046-028	EB1511046-029	EB1511046-030
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.9	7.6	8.4	8.7	7.2
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		66	30	740	1060	20
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		5.9	1.7	12.7	28.5	3.4
^ Exchangeable Magnesium	----	0.1	meq/100g		2.4	0.8	12.6	13.7	1.8
^ Exchangeable Potassium	----	0.1	meq/100g		0.6	0.3	0.4	0.3	0.5
^ Exchangeable Sodium	----	0.1	meq/100g		<0.1	<0.1	3.2	2.9	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		9.0	3.0	29.0	45.5	5.8



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 70 10-20 cm	Site 70 50-60 cm	Site 70 80-90 cm	Site 71 0-10 cm	Site 71 20-30 cm
Client sampling date / time					[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]
Compound	CAS Number	LOR	Unit		EB1511046-031	EB1511046-032	EB1511046-033	EB1511046-034	EB1511046-035
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.7	8.9	9.0	7.2	7.2
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		21	580	720	44	53
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		1.9	11.0	23.0	6.9	13.6
^ Exchangeable Magnesium	----	0.1	meq/100g		1.1	8.0	8.4	6.0	12.6
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	0.3	0.3	0.7	0.4
^ Exchangeable Sodium	----	0.1	meq/100g		0.1	2.4	1.8	0.2	1.5
^ Cation Exchange Capacity	----	0.1	meq/100g		3.4	21.8	33.7	13.8	28.1



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 71 50-60 cm	Site 71 75-85 cm	Site 74 0-10 cm	Site 74 12-20 cm	Site 74 35-45 cm
Client sampling date / time					[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]
Compound	CAS Number	LOR	Unit		EB1511046-036	EB1511046-037	EB1511046-038	EB1511046-039	EB1511046-040
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		9.0	8.9	6.3	6.9	7.9
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		602	855	27	26	293
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		27.5	24.6	4.4	3.3	6.0
^ Exchangeable Magnesium	----	0.1	meq/100g		14.0	12.3	2.3	2.7	8.4
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	0.2	0.6	0.2	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		2.6	2.4	<0.1	0.3	1.6
^ Cation Exchange Capacity	----	0.1	meq/100g		44.3	39.6	7.4	6.7	16.4



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 74 75-85 cm	Site 75 0-10 cm	Site 75 20-30 cm	Site 75 45-55 cm	Site 75 70-80 cm
Client sampling date / time					[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]
Compound	CAS Number	LOR	Unit		EB1511046-041	EB1511046-042	EB1511046-043	EB1511046-044	EB1511046-045
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		7.5	6.3	6.7	6.4	6.6
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		768	58	25	54	24
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		6.9	6.2	3.3	10.2	6.0
^ Exchangeable Magnesium	----	0.1	meq/100g		11.4	3.8	2.2	6.1	3.4
^ Exchangeable Potassium	----	0.1	meq/100g		0.2	0.8	0.4	0.5	0.2
^ Exchangeable Sodium	----	0.1	meq/100g		2.8	<0.1	<0.1	0.1	<0.1
^ Cation Exchange Capacity	----	0.1	meq/100g		21.5	11.0	6.0	17.0	9.8



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Site 76 0-10 cm	Site 76 20-30 cm	Site 76 50-60 cm	Site 76 70-80 cm	----
Client sampling date / time					[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	[20-Jan-2015]	----
Compound	CAS Number	LOR	Unit		EB1511046-046	EB1511046-047	EB1511046-048	EB1511046-049	-----
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		6.1	8.2	7.6	8.9	----
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		33	345	241	1090	----
ED008: Exchangeable Cations									
^ Exchangeable Calcium	----	0.1	meq/100g		3.2	4.0	4.3	14.9	----
^ Exchangeable Magnesium	----	0.1	meq/100g		2.6	8.8	9.3	12.3	----
^ Exchangeable Potassium	----	0.1	meq/100g		0.8	0.2	0.2	0.3	----
^ Exchangeable Sodium	----	0.1	meq/100g		0.1	3.4	3.4	3.8	----
^ Cation Exchange Capacity	----	0.1	meq/100g		6.9	16.5	17.4	31.4	----

SOIL TEST REPORT

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Scone Research Centre

REPORT NO: SCO15/007R1

REPORT TO: Adam Koppers
SLR Consulting
10 Kings Road
New Lambton NSW 2305

REPORT ON: Forty-nine soil samples
Your ref: #630.11145

PRELIMINARY RESULTS

ISSUED: Not issued

REPORT STATUS: Final

DATE REPORTED: 30 January 2015

METHODS: Information on test procedures can be obtained from Scone
Research Centre

TESTING CARRIED OUT ON SAMPLE AS RECEIVED
THIS DOCUMENT MAY NOT BE REPRODUCED EXCEPT IN FULL



SOIL CONSERVATION SERVICE
Scone Research Centre

Report No: SCO15/007R1
Client Reference: Adam Koppers
SLR Consulting
10 Kings Road
New Lambton NSW 2305

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Lab No	Method	P7B/2 Particle Size Analysis (%)					Colour	
	Sample Id	clay	silt	f sand	c sand	gravel	Dry	Moist
1	Site 15 0-10 cm	36	19	29	16	<1	10YR 4/3	10YR 3/2
2	Site 15 20-30 cm	59	12	19	9	1	10YR 3/3	10YR 3/3
3	Site 15 50-60 cm	58	16	17	9	<1	10YR 4/2	10YR 3/3
4	Site 15 80-90 cm	62	26	7	4	1	10YR 6/4	10YR 5/6
5	Site 45 0-10 cm	31	15	37	14	3	7.5YR 4/4	7.5YR 3/4
6	Site 45 20-30 cm	55	12	25	8	<1	7.5YR 5/4	7.5YR 4/4
7	Site 45 50-60 cm	43	20	34	3	<1	10YR 6/4	10YR 5/4
8	Site 55 0-10 cm	31	18	33	18	<1	7.5YR 5/3	7.5YR 3/3
9	Site 55 20-30 cm	58	19	15	8	<1	7.5YR 6/4	7.5YR 4/4
10	Site 55 50-60 cm	50	25	17	6	2	7.5YR 7/3	7.5YR 5/4
11	Site 61 0-10 cm	34	36	23	7	<1	7.5YR 5/3	7.5YR 3/2
12	Site 61 20-30 cm	60	28	10	2	<1	7.5YR 5/3	7.5YR 4/3
13	Site 61 45-55 cm	59	31	8	2	<1	10YR 6/4	10YR 5/4
14	Site 62 0-10 cm	25	14	44	16	1	10YR 5/3	10YR 4/2
15	Site 62 20-30 cm	20	9	43	23	5	7.5YR 5/3	7.5YR 3/3
16	Site 62 35-45 cm	32	9	37	21	1	7.5YR 5/3	7.5YR 4/3
17	Site 62 70-80 cm	41	10	33	15	1	7.5YR 5/4	7.5YR 4/3
18	Site 63 0-5 cm	14	8	41	34	3	7.5YR 5/3	7.5YR 3/2
19	Site 63 10-20 cm	14	12	41	30	3	7.5YR 6/2	7.5YR 3/2
20	Site 63 40-50 cm	46	10	24	19	1	5YR 4/6	5YR 4/6
21	Site 63 80-90 cm	49	9	24	18	<1	5YR 4/6	5YR 4/6
22	Site 65 0-10 cm	28	16	39	15	2	7.5YR 5/2	7.5YR 3/2
23	Site 65 40-50 cm	42	15	31	12	1	7.5YR 5/2	7.5YR 3/2
24	Site 65 60-70 cm	56	12	22	10	<1	10YR 4/2	10YR 3/2
25	Site 65 80-90 cm	76	10	11	3	<1	10YR 5/2	10YR 5/3

SOIL CONSERVATION SERVICE
Scone Research Centre

Report No: SCO15/007R1
Client Reference: Adam Koppers
SLR Consulting
10 Kings Road
New Lambton NSW 2305

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Lab No	Method	P7B/2 Particle Size Analysis (%)					Colour	
	Sample Id	clay	silt	f sand	c sand	gravel	Dry	Moist
26	Site 68 0-10 cm	12	15	37	30	6	7.5YR 4/3	7.5YR 3/3
27	Site 68 15-25 cm	10	13	40	31	6	7.5YR 6/2	7.5YR 4/3
28	Site 68 50-60 cm	58	8	20	13	1	10YR 4/6	7.5YR 5/4
29	Site 68 75-85 cm	57	13	20	8	2	7.5YR 5/6	7.5YR 4/6
30	Site 70 0-10 cm	17	12	32	35	4	7.5YR 4/3	7.5YR 3/3
31	Site 70 10-20 cm	10	13	34	37	6	7.5YR 6/2	7.5YR 4/3
32	Site 70 50-60 cm	42	10	22	24	2	7.5YR 4/6	5YR 4/4
33	Site 70 80-90 cm	10	41	17	30	2	10YR 5/4	7.5YR 5/4
34	Site 71 0-10 cm	26	17	33	22	2	10YR 4/3	10YR 3/3
35	Site 71 20-30 cm	54	15	16	15	<1	10YR 4/4	10YR 3/4
36	Site 71 50-60 cm	45	17	20	17	1	10YR 5/4	10YR 4/4
37	Site 71 75-85 cm	36	11	26	24	3	10YR 5/4	10YR 4/4
38	Site 74 0-10 cm	17	36	39	8	<1	10YR 5/3	10YR 3/3
39	Site 74 12-20 cm	17	30	43	10	<1	10YR 6/2	10YR 4/3
40	Site 74 35-45 cm	46	25	26	3	0	10YR 5/4	10YR 4/4
41	Site 74 75-85 cm	52	20	26	2	0	10YR 5/4	10YR 3/6
42	Site 75 0-10 cm	26	12	30	32	<1	10YR 4/4	10YR 3/3
43	Site 75 20-30 cm	15	6	13	64	2	10YR 4/4	10YR 3/4
44	Site 75 45-55 cm	40	19	30	11	<1	10YR 3/3	10YR 3/4
45	Site 75 70-80 cm	24	9	40	27	<1	10YR 5/4	10YR 3/4
46	Site 76 0-10 cm	19	17	35	21	8	7.5YR 4/3	7.5YR 3/3
47	Site 76 20-30 cm	48	12	24	16	<1	10YR 4/4	10YR 4/4
48	Site 76 50-60 cm	53	11	24	12	<1	7.5YR 5/4	7.5YR 4/6
49	Site 76 70-80 cm	56	8	23	12	1	7.5YR 5/4	7.5YR 4/6

END OF TEST REPORT



Appendix E



Soil Salinity Criteria Calculations

Table 1 Maxwell Project Soil Salinity Criteria Calculations

Site	Sample Depth (m)	EC 1:5 (dS/m)	PSA Texture	Multiplier Factor	ECe
1	0.0 – 0.10	0.049	Silty Loam	9.5	0.5
	0.20 – 0.30	0.137	Silty Clay Loam	8.6	1.2
	0.40 – 0.50	0.481	Silty Clay Loam	8.6	4.1
	0.65 – 0.75	1.064	Light Clay	8.6	9.2
3	0.0 – 0.10	0.023	Loamy Sand	23	0.5
	0.20 – 0.30	0.010	Loamy Sand	23	0.2
	0.40 – 0.50	0.040	Clay Loam	8.6	0.3
5	0.0 – 0.10	0.121	Light-Medium Clay	8.6	1.0
	0.20 – 0.30	0.164	Heavy Clay	5.8	1.0
	0.40 – 0.50	0.497	Heavy Clay	5.8	2.9
	0.65 – 0.75	0.635	Heavy Clay	5.8	3.7
6	0.0 – 0.10	0.031	Loamy Sand	23	0.7
	0.10 – 0.20	0.039	Loamy Sand	23	0.9
	0.30 – 0.40	0.058	Light Clay	8.6	0.5
	0.50 – 0.60	0.058	Clay Loam	8.6	0.5
7	0.0 – 0.10	0.052	Loam	9.5	0.5
	0.20 – 0.30	0.087	Medium Clay	7.5	0.7
	0.40 – 0.50	0.264	Light Clay	8.6	2.3
8	0.0 – 0.10	0.098	Silty Clay	8.6	0.8
	0.20 – 0.30	0.363	Silty Clay	8.6	3.1
	0.40 – 0.50	1.075	Medium Clay	7.5	8.1
	0.65 – 0.75	1.332	Heavy Clay	5.8	7.7
9	0.0 – 0.10	0.070	Silty Clay	8.6	0.6
	0.20 – 0.30	0.192	Silty Clay	8.6	1.7
	0.40 – 0.50	0.826	Medium Clay	7.5	6.2
	0.65 – 0.75	0.961	Heavy Clay	5.8	5.6
11	0.0 – 0.10	0.395	Clay Loam	8.6	3.4
	0.20 – 0.30	0.136	Heavy Clay	5.8	0.8
	0.40 – 0.50	0.328	Heavy Clay	5.8	1.9
	0.65 – 0.75	0.475	Medium Clay	7.5	3.6
12	0.0 – 0.10	0.187	Silty Clay	8.6	1.6
	0.20 – 0.30	0.154	Heavy Clay	5.8	0.9
	0.40 – 0.50	0.261	Medium Clay	7.5	2.0
	0.65 – 0.75	0.491	Medium Clay	7.5	3.7
14	0.0 – 0.10	0.124	Sandy Loam	14	1.7
	0.20 – 0.30	0.221	Light Clay	8.6	1.9
	0.40 – 0.50	0.592	Silty Clay	8.6	5.1
15	0.0 – 0.10	0.094	Silty Loam	9.5	0.9
	0.20 – 0.30	0.060	Heavy Clay	5.8	0.3
	0.40 – 0.50	0.131	Silty Clay Loam	8.6	1.1
	0.65 – 0.75	0.385	Clay Loam	8.6	3.3
16	0.0 – 0.10	0.100	Silty Clay Loam	8.6	0.9
	0.20 – 0.30	0.093	Heavy Clay	5.8	0.5
	0.40 – 0.50	0.284	Heavy Clay	5.8	1.6

Site	Sample Depth (m)	EC 1:5 (dS/m)	PSA Texture	Multiplier Factor	ECe
	0.65 – 0.75	0.284	Heavy Clay	5.8	1.6
17	0.0 – 0.10	0.049	Sandy Loam	14	0.7
	0.20 – 0.30	0.021	Loamy Sand	23	0.5
	0.40 – 0.50	0.025	Loamy Sand	23	0.6
	0.65 – 0.75	0.108	Light Clay	8.6	0.9
18	0.0 – 0.10	0.022	Loamy Sand	23	0.5
	0.20 – 0.30	0.143	Clay Loam	8.6	1.2
	0.40 – 0.50	0.318	Clay Loam	8.6	2.7
	0.65 – 0.75	0.907	Clay Loam	8.6	7.8
19	0.0 – 0.10	0.039	Loam	9.5	0.4
	0.20 – 0.30	0.027	Silty Loam	9.5	0.3
	0.40 – 0.50	0.046	Clay Loam	8.6	0.4
	0.65 – 0.75	0.059	Clay Loam	8.6	0.5
22	0.0 – 0.10	0.027	Silty Loam	9.5	0.3
	0.20 – 0.30	0.120	Clay Loam	8.6	1.0
	0.40 – 0.50	0.248	Clay Loam	8.6	2.1
	0.65 – 0.75	0.815	Clay Loam	8.6	7.0
24	0.0 – 0.10	0.095	Silty Loam	9.5	0.9
	0.20 – 0.30	0.127	Light-Medium Clay	8.6	1.1
	0.40 – 0.50	0.486	Light-Medium Clay	8.6	4.2
	0.65 – 0.75	1.107	Silty Clay Loam	8.6	9.5
25	0.0 – 0.10	0.096	Silty Loam	9.5	0.9
	0.20 – 0.30	0.141	Medium Clay	7.5	1.1
	0.40 – 0.50	0.547	Heavy Clay	5.8	3.2
	0.65 – 0.75	1.012	Silty Clay Loam	8.6	8.7
26	0.0 – 0.10	0.089	Silty Loam	9.5	0.8
	0.20 – 0.30	0.388	Light Clay	8.6	3.3
	0.40 – 0.50	0.908	Silty Clay Loam	8.6	7.8
	0.65 – 0.75	1.105	Heavy Clay	5.8	6.4
27	0.0 – 0.10	0.061	Loam	9.5	0.6
	0.20 – 0.30	0.333	Light-Medium Clay	8.6	2.9
	0.40 – 0.50	0.852	Light-Medium Clay	8.6	7.3
30	0.0 – 0.10	0.113	Heavy Clay	5.8	0.7
	0.20 – 0.30	0.156	Heavy Clay	5.8	0.9
	0.40 – 0.50	0.400	Medium Clay	7.5	3.0
	0.65 – 0.75	0.568	Light Clay	8.6	4.9
D18 SLR (2015)	0.0 – 0.10	0.269	Clay Loam	8.6	2.3
	0.20 – 0.30	0.332	Heavy Clay	5.8	1.9
	0.40 – 0.50	1.161	Heavy Clay	5.8	6.7
	0.65 – 0.75	1.583	Heavy Clay	5.8	9.2

Table 2 SLR (2015) Soil Salinity Criteria Calculations

SLR (2015)	Horizon Depth (cm)	EC1:5 (dS/m)	PSA Texture	Multiplier Factor	ECe
Site 1	0-10	0.061	Loam	9.5	0.6
	10-35	0.035	Loam	9.5	0.3
	35-65	0.159	Heavy Clay	5.8	0.9
	65-95	0.492	Heavy Clay	5.8	2.9
Site 2	0-10	0.085	Light-Medium Clay	8.6	0.7
	10-20	0.089	Heavy Clay	5.8	0.5
	20-60	0.727	Medium Clay	7.5	5.5
	60-90	0.926	Medium Clay	7.5	6.9
Site 3	0-10	0.062	Silty Clay Loam	8.6	0.5
	10-40	0.036	Heavy Clay	5.8	0.2
	40-60	0.102	Light-Medium Clay	8.6	0.9
Site 4	0-10	0.126	Clay Loam	8.6	1.1
	10-30	0.357	Heavy Clay	5.8	2.1
	30-60	0.916	Light-medium Clay	8.6	7.9
	60-100	1.060	Heavy Clay	5.8	6.1
Site 5	0-5	0.102	Loam	9.5	1.0
	5-30	0.052	Light-Medium Clay	8.6	0.4
	30-50	0.236	Light-Medium Clay	8.6	2.0
Site 7	0-5	0.051	Loamy Sand	23	1.2
	5-20	0.080	Loam	9.5	0.8
	20-60	0.494	Clay Loam	8.6	4.2
	60-100	0.518	Clay Loam	8.6	4.5
Site 8	0-10	0.098	Silty Clay	8.6	0.8
	10-40	0.113	Heavy Clay	5.8	0.7
	40-70	0.275	Medium Clay	7.5	2.1
Site 9	0-5	0.109	Silty Loam	9.5	1.0
	5-30	0.229	Silty Loam	9.5	2.2
	30-65	0.763	Heavy Clay	5.8	4.4
	65-120	0.781	Heavy Clay	5.8	4.5
Site 10	0-10	0.042	Silty Clay Loam	8.6	0.4
	10-40	0.058	Heavy Clay	5.8	0.3
	40-80	0.167	Silty Clay	8.6	1.4
	80-100	0.233	Heavy Clay	5.8	1.4
Site 11	0-10	0.081	Light Clay	8.6	0.7
	10-40	0.082	Light-Medium Clay	8.6	0.7
	40-70	0.701	Heavy Clay	5.8	4.1
	70-100	1.180	Heavy Clay	5.8	6.8
Site 12	0-5	0.057	Loam	9.5	0.5
	5-15	0.043	Loam	9.5	0.4
	15-50	0.198	Heavy Clay	5.8	1.1
	50-100	0.916	Medium Clay	7.5	6.9
Site 13	0-8	0.111	Clay Loam	8.6	1.0
	8-50	0.225	Heavy Clay	5.8	1.3
	50-60	0.984	Heavy Clay	5.8	5.7

SLR (2015)	Horizon Depth (cm)	EC1:5 (dS/m)	PSA Texture	Multiplier Factor	ECe
	60-100	1.160	Heavy Clay	5.8	6.7
Site 14	0-5	0.047	Loam	9.5	0.4
	5-40	0.148	Light-Medium Clay	8.6	1.3
	40-65	0.649	Heavy Clay	5.8	3.8
	65-90	0.904	Medium Clay	7.5	6.8
Site 15	0-10	0.074	Clay Loam	8.6	0.6
	10-60	0.080	Heavy Clay	5.8	0.5
		0.591	Heavy Clay	5.8	3.4
	60-100	0.858	Silty Clay	8.6	7.4
Site 16	0-10	0.083	Clay Loam	8.6	0.7
	10-45	0.098	Light-Medium Clay	8.6	0.8
	45-90	0.320	Medium Clay	7.5	2.4
Site 20	0-10	0.156	Loam	9.5	1.5
	10-30	0.200	Light Clay	8.6	1.7
	30-60	0.481	Clay Loam	8.6	4.1
	60-90	0.732	Light-Medium Clay	8.6	6.3
Site 21	0-8	0.110	Clay Loam	8.6	0.9
	8-45	0.274	Light-Medium Clay	8.6	2.4
	45-75	0.391	Clay Loam	8.6	3.4
Site 22	0-10	0.170	Clay Loam	8.6	1.5
	10-50	0.158	Silty Clay	8.6	1.4
	50-90	0.209	Silty Clay	8.6	1.8
Site 23	0-12	0.096	Silty Loam	9.5	0.9
	12-30	0.274	Heavy Clay	5.8	1.6
	30-60	0.474	Heavy Clay	5.8	2.7
Site 24	0-15	0.089	Loamy Sand	23	2.0
	15-35	0.036	Loam	9.5	0.3
	35-60	0.069	Medium Clay	7.5	0.5
Site 25	0-15	0.060	Loam	9.5	0.6
	15-50	0.046	Heavy Clay	5.8	0.3
Site 26	0-15	0.039	Loamy Sand	23	0.9
	15-45	0.018	Sandy Loam	14	0.3
	45-65	0.041	Light-Medium Clay	8.6	0.4
Site 27	0-10	0.092	Loam	9.5	0.9
	10-45	0.056	Medium Clay	7.5	0.4
	45-80	0.219	Silty Clay	8.6	1.9
Site 28	0-20	0.031	Loamy Sand	23	0.7
	20-40	0.017	Loamy Sand	23	0.4
	40-65	0.011	Loamy Sand	23	0.3
	65-120	0.047	Light Clay	8.6	0.4
Site 29	0-10	0.031	Loam	9.5	0.3
	10-35	0.034	Loam	9.5	0.3
	35-60	0.282	Light Clay	8.6	2.4
	60-100	0.575	Sandy Clay	8.6	4.9
Site 30	0-10	0.028	Clay Loam	8.6	0.2

SLR (2015)	Horizon Depth (cm)	EC1:5 (dS/m)	PSA Texture	Multiplier Factor	ECe
	10-30	0.158	Clay Loam	8.6	1.4
	30-60	0.860	Heavy Clay	5.8	5.0
	60-110	0.798	Silty Clay	8.6	6.9
Site 31	0-15	0.035	Loam	9.5	0.3
	15-35	0.213	Heavy Clay	5.8	1.2
	35-60	0.779	Heavy Clay	5.8	4.5
	60-100	0.839	Heavy Clay	5.8	4.9
Site 32	0-10	0.045	Silty Clay Loam	8.6	0.4
	10-40	0.039	Silty Clay	8.6	0.3
	40-60	0.199	Silty Clay	8.6	1.7
Site 33	0-10	0.051	Light-Medium Clay	8.6	0.4
	10-60	0.339	Heavy Clay	5.8	2.0
Site 34	0-15	0.026	Silty Clay Loam	8.6	0.2
	15-30	0.036	Clay Loam	8.6	0.3
	30-60	0.141	Clay Loam	8.6	1.2
	60-130	0.665	Light-Medium Clay	8.6	5.7
Site 35	0-10	0.086	Clay Loam	8.6	0.7
	10-50	0.086	Heavy Clay	5.8	0.5
	50-70	0.705	Heavy Clay	5.8	4.1
Site 36	0-25	0.022	Loamy Sand	23	0.5
	25-45	0.009	Loamy Sand	23	0.2
	45-65	0.033	Light Clay	8.6	0.3
	65-90	0.055	Medium Clay	7.5	0.4
Site 38	0-15	0.086	Silty Loam	9.5	0.8
	15-45	0.090	Heavy Clay	5.8	0.5
	45-65	0.388	Silty Clay	8.6	3.3
Site 39	0-10	0.056	Silty Loam	9.5	0.5
	10-50	0.064	Heavy Clay	5.8	0.4
Site 40	0-10	0.051	Loam	9.5	0.5
	10-35	0.267	Heavy Clay	5.8	1.5
	35-70	0.962	Heavy Clay	5.8	5.6
	70-110	0.893	Silty Clay Loam	8.6	7.7
Site 42	0-5	0.076	Clay Loam	8.6	0.7
	5-30	0.204	Heavy Clay	5.8	1.2
	30-65	0.747	Heavy Clay	5.8	4.3
Site 43	0-15	0.030	Loamy Sand	23	0.7
	15-50	0.104	Clay Loam	8.6	0.9
	50-75	0.450	Clay Loam	8.6	3.9
	75-120	0.467	Light Clay	8.6	4.0
Site 45	0-10	0.113	Clay Loam	8.6	1.0
	10-45	0.045	Heavy Clay	5.8	0.3
	45-60	0.768	Light-Medium Clay	8.6	6.6
Site 46	0-12	0.083	Silty Loam	9.5	0.8
	12-35	0.230	Heavy Clay	5.8	1.3
	35-75	0.816	Heavy Clay	5.8	4.7

SLR (2015)	Horizon Depth (cm)	EC1:5 (dS/m)	PSA Texture	Multiplier Factor	ECe
	75-120	0.674	Medium Clay	7.5	5.1
Site 48	0-10	0.071	Loamy Sand	23	1.6
	10-50	0.020	Loamy Sand	23	0.5
	50-100	0.342	Light Clay	8.6	2.9
	100-120	0.383	Light Clay	8.6	3.3
Site 49	0-10	0.225	Light Clay	8.6	1.9
	10-60	0.168	Heavy Clay	5.8	1.0
	60-90	0.693	Heavy Clay	5.8	4.0
	90-120	1.120	Heavy Clay	5.8	6.5
Site 51	0-10	0.032	Loamy Sand	23	0.7
	10-20	0.023	Loam	9.5	0.2
	20-70	0.194	Medium Clay	7.5	1.5
	70-120	0.329	Sandy Clay Loam	9.5	3.1
Site 52	0-20	0.142	Clay Loam	8.6	1.2
	20-50	0.455	Heavy Clay	5.8	2.6
	50-90	1.040	Heavy Clay	5.8	6.0
	90-120	1.140	Silty Clay	8.6	9.8
Site 53	0-10	0.082	Loam	9.5	0.8
	10-20	0.032	Loam	9.5	0.3
	20-50	0.149	Heavy Clay	5.8	0.9
	50-90	0.577	Heavy Clay	5.8	3.3
	90-130	1.030	Medium Clay	7.5	7.7
Site 54	0-15	0.035	Loam	9.5	0.3
	15-50	0.042	Heavy Clay	5.8	0.2
	50-90	0.335	Silty Clay	8.6	2.9
Site 55	0-10	0.164	Clay Loam	8.6	1.4
	10-50	0.067	Heavy Clay	5.8	0.4
	50-95	0.605	Silty Clay	8.6	5.2
Site 56	0-10	0.159	Clay Loam	8.6	1.4
	10-40	0.221	Heavy Clay	5.8	1.3
Site 57	0-10	0.093	Loam	9.5	0.9
	10-40	0.282	Heavy Clay	5.8	1.6
Site 58	0-10	0.083	Loam	9.5	0.8
	10-40	0.092	Heavy Clay	5.8	0.5
Site 59	0-15	0.072	Clay Loam	8.6	0.6
	15-35	0.169	Heavy Clay	5.8	1.0
	35-70	0.321	Medium Clay	7.5	2.4
Site 61	0-15	0.031	Silty Clay Loam	8.6	0.3
	15-35	0.131	Silty Clay	8.6	1.1
	35-55	0.416	Silty Clay	8.6	3.6
Site 62	0-15	0.070	Clay Loam	8.6	0.6
	15-30	0.047	Clay Loam	8.6	0.4
	30-70	0.152	Clay Loam	8.6	1.3
	70-100	0.856	Light-Medium Clay	8.6	7.4
Site 63	0-5	0.029	Sandy Loam	14	0.4

SLR (2015)	Horizon Depth (cm)	EC1:5 (dS/m)	PSA Texture	Multiplier Factor	ECe
	5-20	0.055	Loam	9.5	0.5
	20-75	0.774	Medium Clay	7.5	5.8
	75-100	0.873	Medium Clay	7.5	6.5
Site 65	0-30	0.061	Clay Loam	8.6	0.5
	30-50	0.527	Light-Medium Clay	8.6	4.5
	50-75	1.190	Heavy Clay	5.8	6.9
	75-110	1.310	Heavy Clay	5.8	7.6
Site 68	0-12	0.066	Loam	9.5	0.6
	12-30	0.030	Loam	9.5	0.3
	30-70	0.740	Heavy Clay	5.8	4.3
	70-110	1.060	Heavy Clay	5.8	6.1
Site 70	0-10	0.020	Loam	9.5	0.2
	10-20	0.021	Loam	9.5	0.2
	20-70	0.580	Light-Medium Clay	8.6	5.0
	70-120	0.720	Silty Loam	9.5	6.8
Site 71	0-10	0.044	Clay Loam	8.6	0.4
	10-30	0.053	Heavy Clay	5.8	0.3
	30-75	0.602	Medium Clay	7.5	4.5
	75-110	0.855	Light Clay	8.6	7.4
Site 74	0-12	0.027	Silty Loam	9.5	0.3
	12-20	0.026	Silty Loam	9.5	0.2
	20-50	0.293	Silty Clay	8.6	2.5
	50-100	0.768	Heavy Clay	5.8	4.5
Site 75	0-20	0.058	Clay Loam	8.6	0.5
	20-30	0.025	Sandy Loam	14	0.4
	30-55	0.054	Light Clay	8.6	0.5
	55-100	0.024	Clay Loam	8.6	0.2
Site 76	0-20	0.033	Loam	9.5	0.3
	20-40	0.345	Medium Clay	7.5	2.6
	40-60	0.241	Heavy Clay	5.8	1.4
	60-95	1.090	Heavy Clay	5.8	6.3

Appendix F



Consideration of Gateway Panel Comments Drayton South Coal Project

Consideration of comments in the *Report by the Mining & Petroleum Gateway Panel to Accompany a Conditional Gateway Certificate for the Drayton South Coal Project* (April 2015) is provided in the table below.

Comment	Response/Consideration
Firstly, the justification for the re-classification of sites 11, 15 and 18 as non-BSAL (refer Figures 5, 6 and 7) based on failure to meet the salinity criteria (Criteria 11) is difficult to corroborate based on data supplied. The soil salinity values as documented for Sites 11 and 15 do not exceed the criteria, and if the reported interpretation (SLR 2015b; Table 36) is applying a factor to convert values to saturated extract equivalence, this is certainly not explained or the texture assumptions elucidated.	Soil salinity thresholds to assess BSAL status are detailed in the Interim Protocol. The Interim Protocol requires soil salinity to be evaluated using saturated extract data values (ECe). In accordance with Section 7 of the Interim Protocol, ECe can be measured indirectly using EC (1:5) values and applying an appropriate 'conversion factor' based on soil texture. SLR used laboratory analysed particle size analysis (PSA) data to determine the soil texture and subsequently applied the conversion factor to convert EC1:5 (dS/m) data values to ECe values. This was conducted for each major soil horizon. The conversion factors applied were in accordance with the values provided in the Interim Protocol by Slavic and Petterson (1993). Data regarding the conversion of EC1:5 to ECe has been provided for all laboratory analysed sites in Appendix E. Site 11 fails BSAL Criteria 11 as ECe values exceed the thresholds within 600 mm.
For Site 15, given the documented soil physical attributes, it is unclear how the site would fail the criteria using conversion factors suggested in the BSAL Protocol (OEI & OASFS, 2013).	Site 15 fails BSAL Criteria 12 (chemical barrier to effective rooting depth) with soil salinity exceeding thresholds in the subsoil horizon.
Site 18 is a check site and the salinity values are not reported. The BSAL Protocol requires a laboratory analysis to be provided in order to accurately assess a site against the salinity criteria.	Site 18 was a check site in SLR (2015) and therefore salinity values were not available at the time of this report. The soil collected as Site 18 was sent for laboratory analysis as part of this assessment. This laboratory analysis showed that Site 18 fails BSAL Criteria 11 as ECe is 6.7 dS/m at 400 mm. Site 18 also fails Criteria 12 with ESP 19.9 at 400 mm.

Comment	Response/Consideration
Secondly, the dominant soil type for Soil Unit 2, as documented in Section 3.2, Table 10 (SLR, 2015b), is described as a 'Self-Mulching brown Vertosol, deep, non-sodic with slightly saline subsoil and high CEC'. As the dominant soil type for Soil Unit 2, the properties recorded for this soil would qualify the Unit as BSAL.	The dominant soil type within Soil Mapping Unit 2 is represented by SLR (2015) Sites 11, 17 and 18 with these sites comprising greater than 70% of the soil mapping unit area; whilst the sub-dominant soil type is represented by SLR (2015) Sites 15 and 16. Section 9.6.2 of the Interim Protocol states "<i>All soil map units will have some soil variation. The dominant soil type upon which BSAL status is determined should comprise great than 70 per cent of a soil map unit.</i>" Section 9.6.3 of the Interim Protocol further confirms "<i>BSAL status is determined on the dominant soil type within a soil map unit.</i>" It is noted that Self-Mulching Brown Vertosols are classified as having high inherent soil fertility, however all three sites representing the dominant soil type in Soil Mapping Unit 2 (Sites 11, 17 and 18) fail one or more of the BSAL criteria.
Thirdly, in light of the above issues, the soil description provided for Site 10 (BSAL verified) and its location adjacent to the northern boundary of the revised Soil Unit 2, suggests that the site may be more accurately included within Soil Unit 2.	Site 10 is a non-saline, Eutrophic Brown Chromosol. This site has been mapped within 'Soil Unit 10 – Subnatric Brown Sodosol – Unit B' as it is more closely related or similar to this dominant soil type due to its duplex textural characteristics and landscape position rather than the cracking clays associated with Brown Vertosols of Soil Mapping Unit 2. SLR recommends that Site 10 remain mapped within Soil Mapping Unit 10.

