

RESULTS OF WATER ANALYSIS

5 samples collected by EAL (Troy Shepard) for Lismore City Council on 26/02/2020. Lab Job No. J1141.

Samples submitted by Eleisha Went. Your Job: PO 71869.

PO Box 23A LISMORE NSW 2480

Parameter	Methods reference	Sample 1 MCS01	Sample 2 MCS02	Sample 3 MCS03	Sample 4 MCS04	Sample 5 MCS05
	Job No.	J1141/1	J1141/2	J1141/3	J1141/4	J1141/5
pH	APHA 4500-H ⁺ -B	6.13	6.42	6.57	6.65	6.82
Conductivity (EC) (dS/m)	APHA 2510-B	0.161	0.182	0.261	0.266	0.243
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	109	124	177	181	165
Temperature (°C)	Onsite	25	25	25	25	25
Redox Potential (mV)	Onsite	131	191	200	231	149
Total Suspended Solids (mg/L)	GFC equiv. filter - APHA 2540-D	12	18	25	24	32
Turbidity (ntu)	APHA 2130	12	18	17	21	42
Dissolved Oxygen (mg/L O ₂)	** APHA 4500-O-G (Onsite method preferable)	3.3	4.1	6.0	3.9	3.5
Biochemical Oxygen Demand ₅ (mg/L O ₂)	APHA 5210-B	3.0	4.1	4.2	5.8	5.3
Total Phosphorus (mg/L P)	In house method W4	0.30	0.52	0.62	0.59	0.57
Total Nitrogen (mg/L N)	In house method W4	0.97	1.47	2.63	2.41	2.30
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN - NO _x	0.96	1.34	1.43	1.69	1.61
Nitrate (mg/L N)	APHA 4500 NO ₃ -F	<0.005	0.103	1.110	0.646	0.616
Ammonia (mg/L N)	APHA 4500 NH ₃ -H	0.023	0.071	0.238	0.088	0.016
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	1,900	2,600	2,400	2,400	2,900
Dissolved Organic Carbon (mg/L C)	** APHA 5310-B	19.6	17.0	15.5	17.3	18.2
BTEX						
Benzene (µg/L or ppb)	Subcontracted: SGS report SE 203377	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene (µg/L or ppb)	Subcontracted: SGS report SE 203377	<0.5	<0.5	0.6	<0.5	<0.5
Ethylbenzene (µg/L or ppb)	Subcontracted: SGS report SE 203377	<0.5	<0.5	<0.5	<0.5	<0.5
m+p-Xylene (µg/L or ppb)	Subcontracted: SGS report SE 203377	<1	<1	<1	<1	<1
o-Xylene (µg/L or ppb)	Subcontracted: SGS report SE 203377	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene (µg/L or ppb)	Subcontracted: SGS report SE 203377	<0.5	<0.5	<0.5	<0.5	<0.5
Total Recoverable Hydrocarbons (TRH)						
C6-C9 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 203377	<40	<40	<40	<40	<40
C10-C14 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 203377	<50	<50	<50	<50	<50
C15-C28 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 203377	<100	<100	<100	<100	<100
C29-C36 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 203377	68	56	100	90	65
C10-C16 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 203377	<60	<60	<60	<60	<60
C16-C34 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 203377	<200	<200	<200	<200	<200
C34-C40 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 203377	<100	<100	<100	<100	<100

Notes:

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to <2pH;
Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2012) 'Standard Methods for the Examination of Water & Wastewater', 22nd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
- ** NATA accreditation does not cover the performance of this service.
- .. Denotes not requested.
- This report is not to be reproduced except in full.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).
- Results relate only to the samples tested.
- This report was issued on 16/03/2020.



RESULTS OF LEACHATE ANALYSIS

2 samples supplied by Lismore City Council on 26/02/2020. Lab Job No. J1142.

Samples submitted by Eleisha Went. Your Job: PO 71869.

PO Box 23A LISMORE NSW 2480

PARAMETER		Sample 1 LD	Sample 2 TWP
		J1142/1	J1142/2
pH	APHA 4500-H+B	8.07	7.93
Conductivity (EC) (dS/m)	APHA 2510-B	3.79	4.19
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	2,577	2,849
Chemical Oxygen Demand (mg/L O ₂)	** APHA 5220-D	1,000	910
Bicarbonate (Alkalinity) (mg/L CaCO ₃ equivalent)	** Total Alkalinity - APHA 2320	870	960
Total Phosphorus (mg/L P)	APHA 4500 P-H	6.26	5.17
Total Nitrogen (mg/L N)	APHA 4500 N-C	209	162
Total Kjeldahl Nitrogen (mg/L N)	** CALCULATION: TN - NO _x	209	162
Nitrate (mg/L N)	APHA 4500 NO ₃ -F	<0.005	<0.005
Ammonia (mg/L N)	APHA 4500 NH ₃ -H	143	145
Arsenic (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	0.025	0.025
Sodium (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	340	365
Potassium (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	372	432
Calcium (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	78	86
Magnesium (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	39	42
Sodium Absorption Ratio (SAR)	** Calculation	7.8	8.1
Chloride (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	581	641
Sulfate (mg/L SO ₄ ²⁻)	APHA 3125 ICPMS ^{*note 1&2}	59	65
Chloride/Sulfate Ratio	** Calculation	9.9	9.8
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	29,000	21,000
Dissolved Organic Carbon (mg/L)	** APHA 5310-B	286	312
Fluoride (mg/L)	** APHA 4500-F-D	0.98	0.99

Notes:

- Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals/ salts analysed by ICP-MS (Inductively Coupled Plasma - Mass Spectrometry) or ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry)
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion)
- For conductivity - 1 dS/m = 1 mS/cm = 1000 µS/cm
- Analysis performed according to APHA (2017) 'Standard Methods for the Examination of Water & Wastewater', 23rd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
- ** NATA accreditation does not cover the performance of this service.
- .. Denotes not requested.
- This report is not to be reproduced except in full.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).
- This report was issued on 10/03/2020.



checked:
Graham Lancaster
Laboratory Manager

Sample 10 MW16	Sample 11 MW17	Sample 12 MW18	Sample 13 MW19	Sample 14 MW20	Sample 15 MW21	Sample 16 MW22	Sample 17 MW23	Sample 18 MW25	Sample 19 MW26
J4794/10	J4794/11	J4794/12	J4794/13	J4794/14	J4794/15	J4794/16	J4794/17	J4794/18	J4794/19
16.18	19.06	9.2	19.04	..	..	..	..	..	..
0.89	0.63	0.99	0.97	..	..	..	..	..	..
2.75	4.32	4.22	3.5	1.49	1.2	2.84	3.57	4.32	0.99
7.06	7.03	7.02	7.27	6.54	6.39	6.57	8.32	8.73	7.63
0.862	1.32	0.805	0.675	4.10	2.88	8.58	2.64	2.58	3.45
586	894	547	459	2,789	1,959	5,836	1,796	1,752	2,344
20	23	20	20	20	21	22	21	21	21
99	-262	-384	-377	-32	-110	-104	-107	-281	79
3.0	4.9	1.3	1.1	3.8	1.1	1.6	3.0	2.0	4.3
23	222	290	34	180	147	551	477	384	572
<1	<1	1.7	4.3	13.8	<1	3.7	1.8	<1	3.8
0.27	0.31	0.60	0.70	1.75	1.52	0.32	1.80	2.23	3.28
0.60	44.30	0.87	3.52	4.34	6.57	2.46	2.22	4.94	21.3
0.49	40.96	0.85	3.50	4.05	6.46	2.46	2.13	4.87	21.3
0.432	42.4	0.008	0.361	0.670	0.012	<0.005	1.71	4.80	<0.005
0.018	0.015	0.513	3.01	4.08	6.18	1.75	0.186	0.017	19.3
161	52	113	293	477	493	1,225	559	489	639
2.530	54.4	2.34	15.6	18.0	18.6	10.68	13.8	51.2	44.1
14.1	153.1	29.7	149	78.2	59.6	724	38.2	49.0	48.3
0.396	33.3	25.6	154	62.1	59.7	504	40.5	43.8	98
11.5	0.99	3.67	4.01	9.77	10.8	8.55	15.0	12.2	12.1
313	251	220	973	1,107	1,201	2,197	848	952	1,150
67.2	149.1	38.1	16.042	38.3	26.8	3,220	24.1	14.1	24.06
4.66	1.68	5.77	61	28.9	44.8	0.682	35.2	67.8	48
0.09	0.29	0.11	0.14	0.34	0.43	1.04	0.53	0.53	0.32
30	60	20	<10	30	<10	50	40	<10	10
3.8	21.7	8.9	5.3	10.7	2.6	26.8	4.5	3.0	11.9
<0.01	0.02	<0.01	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
0.004	0.002	0.002	0.002	0.005	0.002	0.003	0.003	0.003	0.002
0.054	0.049	0.80	4.06	3.64	0.587	21.2	0.111	0.065	1.43
0.008	0.015	0.610	1.37	1.09	1.40	2.78	0.119	0.082	0.170
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<1	<1	<5	<1	<1	<1	<1	<1	<1	<1
<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
<100	<100	<100	<100	<100	<100	140	<100	<100	130
<50	<50	<50	<50	<50	<50	110	<50	<50	<50
<60	<60	<60	<60	<60	<60	<60	<60	<60	<60
<200	<200	<200	<200	<200	<200	230	<200	<200	<200
<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
<100	<100	<100	<100	<100	<100	250	<100	<100	130

RESULTS OF LEACHATE ANALYSIS

2 samples collected by EAL for Lismore City Council on 12/06/2020. Lab Job No. J4795.

Samples submitted by Troy Shepard (EAL). Your Job: PO-71869 Leachate

PO Box 23A LISMORE NSW 2480

Parameter	Methods reference	Sample 1 Leachate Dam	Sample 2 Tryton Wedge Pit
	Job No.	J4795/1	J4795/2
pH	APHA 4500-H ⁺ -B	8.52	8.34
Conductivity (EC) (dS/m)	APHA 2510-B	1.74	6.93
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	1,185	4,714
Bicarbonate (Alkalinity) (mg/L CaCO ₃ equivalent)	** Total Alkalinity - APHA 2320	420	849
Chemical Oxygen Demand (mg/L O ₂)	** APHA 5220-D	400	2,300
Total Phosphorus (mg/L P)	In house method W4	1.27	4.56
Total Nitrogen (mg/L N)	In house method W4	35.6	186
Nitrate (mg/L N)	APHA 4500 NO ₃ ⁻ -F	2.22	9.33
Ammonia (mg/L N)	APHA 4500 NH ₃ -H	17.2	72.9
Sodium (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	207	689
Potassium (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	170	1180
Calcium (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	69	176
Magnesium (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	35	85
Sodium Absorption Ratio (SAR)	** By calculation	5.1	10.7
Chloride (mg/L)	APHA 3125 ICPMS ^{*note 1&2}	560	2,130
Sulfate (mg/L SO ₄ ²⁻)	APHA 3125 ICPMS ^{*note 1&2}	120	339
Chloride/Sulfate Ratio	** Calculation	4.7	6.3
Fluoride (mg/L)	** APHA 4500-F ⁻ -D	0.5	0.7
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	37,000	49,000
Dissolved Organic Carbon (mg/L)	APHA 5310-B	102	533
Arsenic (mg/L)	Total Available - APHA 3125 ICPMS ^{*note 1&2}	0.009	0.078
Pesticide analysis screen ^{^see note 10}			
Lindane (gamma BHC) (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.1	<0.1
Aldrin (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.1	<0.1
Dieldrin (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.1	<0.1
Endrin (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.1	<0.1
Beta Endosulfan (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.1	<0.1
Methoxychlor (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.1	<0.1
Mirex (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.1	<0.1
Other Organochlorine (OC) Pesticides (µg/L or ppb)	Subcontracted: SGS report SE 207598		
Dichlorvos (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.5	<0.5
Dimethoate (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.5	<0.5
Diazinon (Dimpylate) (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.5	<0.5
Methidathion (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.5	<0.5
Other Organophosphate (OP) Pesticides (µg/L or ppb)	Subcontracted: SGS report SE 207598	<0.2	<0.2

Notes:

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to pH <2; Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2017) 'Standard Methods for the Examination of Water & Wastewater', 23rd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
- ** NATA accreditation does not cover the performance of this service.
- ... Denotes not requested.
- This report is not to be reproduced except in full.
- In Pesticide Analysis Screening the following pesticides are included:
 - Organochlorine pesticide (OC's) screen: (Hexachlorobenzene (HCB), Alpha BHC, Lindane (gamma BHC), Heptachlor, Aldrin, Beta BHC, Delta BHC, Heptachlor epoxide, o,p'-DDE, Alpha Endosulfan, Gamma Chlordane, Alpha Chlordane, trans-Nonachlor, p,p'-DDE, Dieldrin, Endrin, o,p'-DDD, o,p'-DDT, Beta Endosulfan, p,p'-DDD, p,p'-DDT, Endosulfan sulphate, Endrin aldehyde, Methoxychlor, Endrin ketone, Isodrin, Mirex)
 - Organophosphorus pesticide (OP's) screen: (Dichlorvos, Dimethoate, Diazinon (Dimpylate), Fenitrothion, Malathion, Chlorpyrifos (Chlorpyrifos Ethyl), Parathion-ethyl (Parathion), Bromophos Ethyl, Methidathion, Ethion, Azinphos-methyl)
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).
- Results relate only to the samples tested.
- This report was issued on 30/06/2020.



RESULTS OF WATER ANALYSIS

6 samples collected by EAL for Lismore City Council on 17th June, 2020. Lab Job No.J4962

Samples submitted by Eleisha Went. Your Job: PO 71869 Surface Waters

PO Box 23a LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
		MCS01	MCS02	MCS03	MCS04	MCS05	MCS06
	Job No.	J4962/1	J4962/2	J4962/3	J4962/4	J4962/5	J4962/6
pH	APHA 4500-H ⁺ -B	7.04	7.64	7.59	7.28	7.39	7.37
Conductivity (EC) (dS/m)	APHA 2510-B	0.233	0.484	0.495	0.339	0.513	..
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	158	329	337	231	349	..
Temperature (°C)	Onsite	17.4	18.6	18.6	16.9	16.6	..
Redox Potential (mV)	Onsite	-132	-80	-86	+38	+48	..
Total Suspended Solids (mg/L)	GFC equiv. filter - APHA 2540-D	21	20	32	58	33	37
Turbidity (NTU)	APHA 2130	14	13	15	42	27	..
Bicarbonate (Alkalinity) (mg/L CaCO ₃ equivalent)	** Total Alkalinity - APHA 2320	50	95	105	70	95	95
Dissolved Oxygen (mg/L O ₂)	** APHA 4500-O-G (Onsite method preferable)	3.8	4.0	3.5	3.5	3.8	..
Biochemical Oxygen Demand ₅ (mg/L O ₂)	APHA 5210-B	1.4	4.2	3.6	3.6	3.2	2.5
Total Phosphorus (mg/L P)	In house method W4	0.18	0.45	0.46	0.48	0.58	0.56
Phosphate (mg/L P)	APHA 4500 P-G	0.031	0.242	0.284	0.191	0.287	0.301
Total Nitrogen (mg/L N)	In house method W4	0.75	4.82	6.86	2.60	5.14	5.25
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN - NO _x	0.73	2.02	4.03	0.66	3.08	3.20
Nitrate (mg/L N)	APHA 4500 NO ₃ ⁻ -F	0.050	2.73	3.21	0.871	2.71	2.80
Ammonia (mg/L N)	APHA 4500 NH ₃ -H	0.089	0.282	0.391	0.302	0.715	0.802
Sodium (mg/L)	APHA 3125 ICPMS ^{note 1&2}	25.1	64.0	63	41.0	62	62.8
Potassium (mg/L)	APHA 3125 ICPMS ^{note 1&2}	5.8	12.8	13.0	6.2	11.7	12.2
Calcium (mg/L)	APHA 3125 ICPMS ^{note 1&2}	9.6	17.9	18.1	13.7	17.9	18.0
Magnesium (mg/L)	APHA 3125 ICPMS ^{note 1&2}	7.5	6.3	6.4	6.5	6.7	6.8
Sodium Absorption Ratio (SAR)	** By calculation	1.5	3.3	3.3	2.3	3.2	3.2
Chloride (mg/L)	APHA 3125 ICPMS ^{note 1&2}	41	51	53	35	49	59
Sulfur	APHA 3125 raw data - HIDE	2.7	10.5	9.5	5.1	9.2	9.6
Sulfate (mg/L SO ₄ ²⁻)	APHA 3125 ICPMS ^{note 1&2}	8.0	31.5	28.6	15.4	27.5	28.7
Chloride/Sulfate Ratio	** Calculation	5.1	1.6	1.8	2.3	1.8	2.0
Fluoride (mg/L)	** APHA 4500-F-D	0.1	0.3	0.3	0.2	0.3	0.3
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	260	510	680	570	530	490
Dissolved Organic Carbon (mg/L)	** Subcontracted- inhouse	15.6	12.7	12.5	14.4	13.5	13.5
Phenol (µg/L or ppb)	Subcontracted: SGS report SE 207738	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iron (mg/L)	Total Available - APHA 3125 ICPMS ^{note 1&2}	1.51	0.718	0.697	1.41	0.836	0.906
Manganese (mg/L)	Total Available - APHA 3125 ICPMS ^{note 1&2}	0.035	0.050	0.054	0.108	0.128	0.133
BTEX							
Benzene (µg/L or ppb)	Subcontracted: SGS report SE 207738	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene (µg/L or ppb)	Subcontracted: SGS report SE 207738	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene (µg/L or ppb)	Subcontracted: SGS report SE 207738	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-Xylene (µg/L or ppb)	Subcontracted: SGS report SE 207738	<1	<1	<1	<1	<1	<1
o-Xylene (µg/L or ppb)	Subcontracted: SGS report SE 207738	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene (µg/L or ppb)	Subcontracted: SGS report SE 207738	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Recoverable Hydrocarbons (TRH)							
C10-C14 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 207738	<50	<50	<50	<50	<50	<50
C15-C28 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 207738	<100	<100	<100	<100	<100	<100
C29-C36 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 207738	<50	<50	<50	<50	<50	<50
C10-C16 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 207738	<60	<60	<60	<60	<60	<60
C16-C34 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 207738	<200	<200	<200	<200	<200	<200
C34-C40 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 207738	<100	<100	<100	<100	<100	<100
Sum C10-C36 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 207738	<100	<100	<100	<100	<100	<100

Notes:

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to pH <2;
Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2017) 'Standard Methods for the Examination of Water & Wastewater', 23rd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
- ** NATA accreditation does not cover the performance of this service.
- .. Denotes not requested.
- This report is not to be reproduced except in full.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).
- Results relate only to the samples tested.
- This report was issued on 09/07/2020.



RESULTS OF WATER ANALYSIS

5 samples collected by EAL for Lismore City Council on 25/08/2020. Lab Job No. J7544.

Samples submitted by Troy Shepard (EAL). Your Job: Q20/124 PO 77501 Surface Water Quarterly.

PO Box 23A LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
	Job No.	J7544/1	J7544/2	J7544/3	J7544/4	J7544/5	J7544/6
		MCS01	MCS02	MCS03	MCS04	MCS05	MCS06
pH	APHA 4500-H ⁺ -B	7.07	7.68	7.34	7.42	7.47	..
Conductivity (EC) (dS/m)	APHA 2510-B	0.262	0.623	0.638	0.538	0.631	..
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	178	424	434	366	429	..
Temperature (°C)	** Onsite	18.7	19.6	18.8	18.6	18.1	..
Redox Potential (mV)	** Onsite	182	177	189	167	178	..
Total Suspended Solids (mg/L)	GFC equiv. filter - APHA 2540-D	14	9	53	30	25	25
Turbidity (ntu)	APHA 2130	16	8	5	6	7	..
Dissolved Oxygen (mg/L O ₂)	** APHA 4500-O-G (Onsite method preferable)	6.2	6.0	6.2	6.6	6.3	..
Biochemical Oxygen Demand ₅ (mg/L O ₂)	APHA 5210-B	2.7	5.9	8.3	5.0	5.3	5.4
Total Phosphorus (mg/L P)	In house method W4	0.09	0.66	0.88	0.60	0.77	0.73
Total Nitrogen (mg/L N)	In house method W4	1.54	7.73	8.31	6.81	8.99	8.89
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN - NO _x	1.44	7.63	8.21	6.71	8.89	8.89
Nitrate (mg/L N)	APHA 4500 NO ₃ -F	<0.005	4.63	5.02	4.12	5.22	5.19
Ammonia (mg/L N)	APHA 4500 NH ₃ -H	1.29	0.856	1.05	1.12	1.66	1.66
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	26	390	520	520	390	390
Dissolved Organic Carbon (mg/L C)		7.9	11.7	11.9	11.3	12.2	11.9
BTEX							
Benzene (µg/L or ppb)	Subcontracted: SGS report SE 210506	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene (µg/L or ppb)	Subcontracted: SGS report SE 210506	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene (µg/L or ppb)	Subcontracted: SGS report SE 210506	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m+p-Xylene (µg/L or ppb)	Subcontracted: SGS report SE 210506	<1	<1	<1	<1	<1	<1
o-Xylene (µg/L or ppb)	Subcontracted: SGS report SE 210506	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene (µg/L or ppb)	Subcontracted: SGS report SE 210506	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Recoverable Hydrocarbons (TRH)							
C6-C9 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 210506	<40	<40	<40	<40	<40	<40
C10-C14 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 210506	<50	<50	<50	<50	<50	<50
C15-C28 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 210506	<100	110	120	120	130	140
C29-C36 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 210506	<50	77	100	<50	120	100
C10-C16 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 210506	<60	<60	<60	<60	<60	<60
C16-C34 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 210506	<200	<200	200	<200	230	230
C10-C36 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 210506	<100	190	220	120	250	240
C34-C40 Fraction (µg/L or ppb)	Subcontracted: SGS report SE 210506	<100	<100	<100	<100	<100	<100

Notes:

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to <2pH;
Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2012) 'Standard Methods for the Examination of Water & Wastewater', 22nd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
- ** NATA accreditation does not cover the performance of this service.
- .. Denotes not requested.
- This report is not to be reproduced except in full.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).
- Results relate only to the samples tested.
- This report was issued on 09/09/2020.



RESULTS OF WATER ANALYSIS

6 samples collected by EAL for Lismore City Council on 25/11/2020. Lab Job No. K1004.
 Samples submitted by Eleisha Went. Your Job: Q20/124 PO 77501 Surface Waters.
 PO Box 23A LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
		MCS01	MCS02	MCS03	MCS04	MCS05	MCS06
	Job No.	K1004/1	K1004/2	K1004/3	K1004/4	K1004/5	K1004/6
pH	APHA 4500-H ⁺ -B	7.20	7.81	7.68	7.59	7.59	7.59
Conductivity (EC) (dS/m)	APHA 2510-B	0.464	0.723	0.727	0.731	0.735	0.735
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	316	492	494	497	500	500
Temperature (°C)	Onsite	21	3	16	49	19	18
Redox Potential (mV)	Onsite	279	289	295	295	286	286
Total Suspended Solids (mg/L)	GFC equiv. filter - APHA 2540-D	19	4	20	57	16	17
Turbidity (ntu)	APHA 2130	21	3	16	49	19	18
Dissolved Oxygen (mg/L O ₂)	** APHA 4500-O-G (Onsite method preferable)	4.7	6.4	5.3	4.1	4.9	4.9
Biochemical Oxygen Demands (mg/L O ₂)	APHA 5210-B	8.0	2.5	5.0	4.0	3.0	<1
Total Phosphorus (mg/L P)	In house method W4	0.43	0.44	0.62	0.83	0.73	0.72
Total Nitrogen (mg/L N)	In house method W4	1.57	6.62	6.62	6.40	4.69	5.02
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN - NO _x	1.57	1.53	1.86	2.61	2.33	2.57
Nitrate (mg/L N)	APHA 4500 NO ₃ -F	<0.005	4.890	4.540	3.510	2.190	2.200
Ammonia (mg/L N)	APHA 4500 NH ₃ -H	0.016	0.334	0.539	1.100	0.929	1.150
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	250	900	1,750	3,200	1,550	1,450
Dissolved Organic Carbon (mg/L C)	** inhouse	14.9	9.1	9.4	11.2	10.0	9.8
BTEX							
Benzene (µg/L or ppb)	Subcontracted: SGS report SE214135	<0.5	<0.5	<0.5	<0.5	<0.5	..
Toluene (µg/L or ppb)	Subcontracted: SGS report SE214135	<0.5	<0.5	<0.5	<0.5	<0.5	..
Ethylbenzene (µg/L or ppb)	Subcontracted: SGS report SE214135	<0.5	<0.5	<0.5	<0.5	<0.5	..
m+p-Xylene (µg/L or ppb)	Subcontracted: SGS report SE214135	<1	<1	<1	<1	<1	..
o-Xylene (µg/L or ppb)	Subcontracted: SGS report SE214135	<0.5	<0.5	<0.5	<0.5	<0.5	..
Naphthalene (µg/L or ppb)	Subcontracted: SGS report SE214135	<0.5	<0.5	<0.5	<0.5	<0.5	..
Total Recoverable Hydrocarbons (TRH)							
C10-C14 Fraction (µg/L or ppb)	Subcontracted: SGS report SE214135	<50	<50	<50	<50	<50	..
C15-C28 Fraction (µg/L or ppb)	Subcontracted: SGS report SE214135	130	<100	<100	<100	<100	..
C29-C36 Fraction (µg/L or ppb)	Subcontracted: SGS report SE214135	220	<50	<50	<50	<50	..
C10-C16 Fraction (µg/L or ppb)	Subcontracted: SGS report SE214135	<60	<60	<60	<60	<60	..
C16-C34 Fraction (µg/L or ppb)	Subcontracted: SGS report SE214135	320	<200	<200	<200	<200	..
C34-C40 Fraction (µg/L or ppb)	Subcontracted: SGS report SE214135	<100	<100	<100	<100	<100	..

Notes:

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to <2pH;
Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma- Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2012) 'Standard Methods for the Examination of Water & Wastewater', 22nd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
- ** NATA accreditation does not cover the performance of this service.
- .. Denotes not requested.
- This report is not to be reproduced except in full.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/ or on request).
- Results relate only to the samples tested.
- This report was issued on 10/12/2020.



RESULTS OF LEACHATE ANALYSIS

2 samples collected by EAL for Lismore City Council on 25/11/2020. Lab Job No. K1005.
 Samples submitted by Eleisha Went. Your Job: Q20/124 PO 77501 Leachate
 PO Box 23A LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2
		Leachate Dam	Tryton Wedge Pit
	Job No.	K1005/1	K1005/2
pH	APHA 4500-H ⁺ B	8.53	8.99
Conductivity (EC) (dS/m)	APHA 2510-B	3.410	12.780
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	2,319	8,690
Bicarbonate (Alkalinity) (mg/L CaCO ₃ equivalent)	** Total Alkalinity - APHA 2320	230	250
Chemical Oxygen Demand (mg/L O ₂)	** APHA 5220-D	550	1,300
Total Phosphorus (mg/L P)	In house method W4	3.34	8.85
Total Nitrogen (mg/L N)	In house method W4	46	159
Nitrate (mg/L N)	APHA 4500 NO ₃ -F	<0.05	<0.05
Ammonia (mg/L N)	APHA 4500 NH ₃ -H	7.9	33.2
Sodium (mg/L)	APHA 3125 ICPMS ^{note 1&2}	438	1272
Potassium (mg/L)	APHA 3125 ICPMS ^{note 1&2}	254	1661
Calcium (mg/L)	APHA 3125 ICPMS ^{note 1&2}	83	335
Magnesium (mg/L)	APHA 3125 ICPMS ^{note 1&2}	59	213
Sodium Absorption Ratio (SAR)	** By calculation	9.0	13.4
Chloride (mg/L)	APHA 3125 ICPMS ^{note 1&2}	754	3,177
Sulfate (mg/L SO ₄ ²⁻)	APHA 3125 ICPMS ^{note 1&2}	73	240
Chloride/Sulfate Ratio	** Calculation	10.4	13.2
Fluoride (mg/L)	** APHA 4500-F-D	1.7	1.8
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	34,000	59,000
Dissolved Organic Carbon (mg/L)	APHA 5310-B	177	814
Arsenic (mg/L)	Total Available - APHA 3125 ICPMS ^{note 1&2}	0.022	0.029
Pesticide analysis screen ^{see notes}			
Hexachlorobenzene (HCB) (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Alpha BHC (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Lindane (gamma BHC) (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Heptachlor (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Aldrin (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Beta BHC (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Delta BHC (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Heptachlor epoxide (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
o,p'-DDE (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Alpha Endosulfan (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Gamma Chlordane (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Alpha Chlordane (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
trans-Nonachlor (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
p,p'-DDE (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Dieldrin (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Endrin (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
o,p'-DDD (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
o,p'-DDT (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Beta Endosulfan (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
p,p'-DDD (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
p,p'-DDT (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Endosulfan sulphate (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Endrin aldehyde (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Methoxychlor (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Endrin ketone (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Isodrin (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Mirex (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.1	<0.1
Dichlorvos (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.5	<0.5
Dimethoate (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.5	<0.5
Diazinon (Dimpylate) (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.5	<0.5
Fenitrothion (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.2	<0.2
Malathion (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl) (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.2	<0.2
Parathion-ethyl (Parathion) (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.2	<0.2
Bromophos Ethyl (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.2	<0.2
Methodathion (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.5	<0.5
Ethion (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.2	<0.2
Azinphos-methyl (µg/L or ppb)	Subcontracted: SGS report SE 214134	<0.2	<0.2

Notes:

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to pH <2;
Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2017) 'Standard Methods for the Examination of Water & Wastewater', 23rd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
- ** NATA accreditation does not cover the performance of this service.
- ... Denotes not requested.
- This report is not to be reproduced except in full.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal on request).
- Results relate only to the samples tested.
- This report was issued on 10/12/2020.



RESULTS OF WATER ANALYSIS

19 samples collected by EAL for Lismore City Council on the 26/11/2020- Lab. Job No. K1061

Analysis requested by Eleisha Went. Your Project: PO 77501 Groundwater

PO Box 23A LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10	Sample 11	Sample 12	Sample 13	Sample 14	Sample 15	Sample 16	Sample 17	Sample 18	Sample 19
		MW01	MW02	MW03	MW09	MW11	MW12	MW13	MW14	MW15	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW23	MW25	MW26
	Job No.	K1061/1	K1061/2	K1061/3	K1061/4	K1061/5	K1061/6	K1061/7	K1061/8	K1061/9	K1061/10	K1061/11	K1061/12	K1061/13	K1061/14	K1061/15	K1061/16	K1061/17	K1061/18	K1061/19
pH	APHA 4500-H ⁺ -B	6.11	6.25	6.77	7.00	6.65	8.13	7.09	7.18	6.45	7.59	7.33	7.08	7.02	6.37	6.20	6.49	7.56	7.25	7.42
Conductivity (EC) (dS/m)	APHA 2510-B	0.43	3.37	1.874	0.66	8.00	4.29	4.29	2.82	7.950	0.93	1.311	1.40	4.01	3.43	3.39	9.98	3.10	3.86	4.25
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	294	2,292	1,274	451	5,440	2,917	2,917	1,916	5,406	635	891	949	2,727	2,332	2,305	6,786	2,108	2,625	2,890
Redox Potential (mV)	Onsite	322	333.0	332.0	327.0	-22	139.0	126	171.0	106	162.0	173.0	181.0	30.0	136.0	156.0	122	199.00	248	178
Dissolved Oxygen (mg/L O ₂)	** APHA 4500-OG (Onsite method preferable)	1.31	2.08	0.92	1.33	3.86	2.09	0.92	1.46	0.88	1.04	1.61	1.02	0.55	1.60	0.40	0.91	2.65	3.86	1.12
Biochemical Oxygen Demands (mg/L O ₂)	APHA 5210-B	1.9	<1	4.0	1.8	8.1	2.9	12.2	14.2	4.3	0.4	28.7	6.3	15.6	5.6	3.3	2.4	7.4	7.3	34.4
Total Phosphorous (mg/L P)	In house method W4	0.560	0.096	0.145	0.560	0.247	0.03	1.06	2.070	0.036	0.343	1.347	0.537	0.91	1.82	1.628	0.04	1.92	1.94	3.05
Total Nitrogen (mg/L N)	In house method W4	3.923	0.95	1.41	0.62	6.0	23.17	2.33	9.31	3.527	0.65	13.54	0.58	5.90	6.24	7.12	3.38	3.94	5.6	23.2
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN - NO ₃	1.89	0.95	1.40	0.55	6.00	23.13	2.33	9.31	3.53	0.16	13.53	0.51	5.87	6.01	7.12	2.38	0.67	0.30	23.13
Nitrate (mg/L N)	APHA 4500 NO ₃ -F	2.030	<0.005	0.01	0.062	<0.005	0.038	<0.005	0.005	<0.005	0.494	0.007	0.070	0.027	0.231	<0.005	1.00	3.27	5.350	0.110
Ammonia (mg/L N)	APHA 4500 NH ₃ -H	0.629	0.036	0.513	<0.005	5.92	23.10	1.880	7.910	2.970	<0.005	10.000	0.254	5.58	6.03	7.020	1.150	0.202	<0.005	20.6
Dissolved Organic Carbon (mg/L C)	** inhouse APHA 5310-B	2.5	1.4	16.3	4.1	12.2	7.2	11.5	4.9	20.6	2.5	17.6	4.9	5.0	2.6	2.2	<0.1	4.9	3.8	10.8
RIEX																				
Benzene (µg/L or ppb)	Subcontracted: SGS report 214263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene (µg/L or ppb)	Subcontracted: SGS report 214263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene (µg/L or ppb)	Subcontracted: SGS report 214263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m+p-Xylene (µg/L or ppb)	Subcontracted: SGS report 214263	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene (µg/L or ppb)	Subcontracted: SGS report 214263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene (µg/L or ppb)	Subcontracted: SGS report 214263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Recoverable Hydrocarbons (TRH)																				
C5-C9 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
C10-C14 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15-C28 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<100	380	130	<100	130	<100	110	<100	130	<100	100	140	<100	<100	<100	<100	<100	<100	<100
C29-C36 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<50	85	100	<50	87	<50	68	<50	64	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C10-C16 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60
C16-C34 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<200	420	200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
C34-C40 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100

- Notes:**
- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to <2pH; Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
 - Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
 - 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
 - For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
 - Analysis performed according to APHA (2012) 'Standard Methods for the Examination of Water & Wastewater', 22nd Edition, except where stated otherwise.
 - Analysis conducted between sample arrival date and reporting date.
 - ** NATA accreditation does not cover the performance of this service.
 - .. Denotes not requested.
 - This report is not to be reproduced except in full.
 - All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).



checked:
Graham Lancaster
Laboratory Manager

RESULTS OF WATER ANALYSIS

19 samples collected by EAL for Lismore City Council on the 26/11/2020- Lab. Job No. K1061

Analysis requested by Eleisha Went. Your Project: PO 77501 Groundwater

PO Box 23A LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10	Sample 11	Sample 12	Sample 13	Sample 14	Sample 15	Sample 16	Sample 17	Sample 18	Sample 19
		MW01	MW02	MW03	MW09	MW11	MW12	MW13	MW14	MW15	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW23	MW25	MW26
	Job No.	K1061/1	K1061/2	K1061/3	K1061/4	K1061/5	K1061/6	K1061/7	K1061/8	K1061/9	K1061/10	K1061/11	K1061/12	K1061/13	K1061/14	K1061/15	K1061/16	K1061/17	K1061/18	K1061/19
pH	APHA 4500-H ⁺ -B	6.11	6.25	6.77	7.00	6.65	8.13	7.09	7.18	6.45	7.59	7.33	7.08	7.02	6.37	6.20	6.49	7.56	7.25	7.42
Conductivity (EC) (dS/m)	APHA 2510-B	0.43	3.37	1.874	0.66	8.00	4.29	4.29	2.82	7.950	0.93	1.311	1.40	4.01	3.43	3.39	9.98	3.10	3.86	4.25
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	294	2,292	1,274	451	5,440	2,917	2,917	1,916	5,406	635	891	949	2,727	2,332	2,305	6,786	2,108	2,625	2,890
Redox Potential (mV)	Onsite	322	333.0	332.0	327.0	-22	139.0	126	171.0	106	162.0	173.0	181.0	30.0	136.0	156.0	122	199.00	248	178
Dissolved Oxygen (mg/L O ₂)	** APHA 4500-OG (Onsite method preferable)	1.31	2.08	0.92	1.33	3.86	2.09	0.92	1.46	0.88	1.04	1.61	1.02	0.55	1.60	0.40	0.91	2.65	3.86	1.12
Biochemical Oxygen Demands (mg/L O ₂)	APHA 5210-B	1.9	<1	4.0	1.8	8.1	2.9	12.2	14.2	4.3	0.4	28.7	6.3	15.6	5.6	3.3	2.4	7.4	7.3	34.4
Total Phosphorous (mg/L P)	In house method W4	0.560	0.096	0.145	0.560	0.247	0.03	1.06	2.070	0.036	0.343	1.347	0.537	0.91	1.82	1.628	0.04	1.92	1.94	3.05
Total Nitrogen (mg/L N)	In house method W4	3.923	0.95	1.41	0.62	6.0	23.17	2.33	9.31	3.527	0.65	13.54	0.58	5.90	6.24	7.12	3.38	3.94	5.6	23.2
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN - NO ₃	1.89	0.95	1.40	0.55	6.00	23.13	2.33	9.31	3.53	0.16	13.53	0.51	5.87	6.01	7.12	2.38	0.67	0.30	23.13
Nitrate (mg/L N)	APHA 4500 NO ₃ -F	2.030	<0.005	0.01	0.062	<0.005	0.038	<0.005	0.005	<0.005	0.494	0.007	0.070	0.027	0.231	<0.005	1.00	3.27	5.350	0.110
Ammonia (mg/L N)	APHA 4500 NH ₃ -H	0.629	0.036	0.513	<0.005	5.92	23.10	1.880	7.910	2.970	<0.005	10.000	0.254	5.58	6.03	7.020	1.150	0.202	<0.005	20.6
Dissolved Organic Carbon (mg/L C)	** inhouse APHA 5310-B	2.5	1.4	16.3	4.1	12.2	7.2	11.5	4.9	20.6	2.5	17.6	4.9	5.0	2.6	2.2	<0.1	4.9	3.8	10.8
RIEX																				
Benzene (µg/L or ppb)	Subcontracted: SGS report 214263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene (µg/L or ppb)	Subcontracted: SGS report 214263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene (µg/L or ppb)	Subcontracted: SGS report 214263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m+p-Xylene (µg/L or ppb)	Subcontracted: SGS report 214263	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene (µg/L or ppb)	Subcontracted: SGS report 214263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene (µg/L or ppb)	Subcontracted: SGS report 214263	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Recoverable Hydrocarbons (TRH)																				
C5-C9 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
C10-C14 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15-C28 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<100	380	130	<100	130	<100	110	<100	130	<100	100	140	<100	<100	<100	<100	<100	<100	<100
C29-C36 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<50	85	100	<50	87	<50	68	<50	64	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C10-C16 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60
C16-C34 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<200	420	200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
C34-C40 Fraction (µg/L or ppb)	Subcontracted: SGS report 214263	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100

- Notes:**
- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to <2pH; Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
 - Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
 - 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
 - For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
 - Analysis performed according to APHA (2012) 'Standard Methods for the Examination of Water & Wastewater', 22nd Edition, except where stated otherwise.
 - Analysis conducted between sample arrival date and reporting date.
 - ** NATA accreditation does not cover the performance of this service.
 - .. Denotes not requested.
 - This report is not to be reproduced except in full.
 - All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).



checked:
Graham Lancaster
Laboratory Manager