RESULTS OF WATER ANALYSIS

6 samples supplied by Ground Water Data Collection Service on 2/09/2019 . Lab Job No.i5449

Samples submitted by Mathew Baker. Your Job: Lismore Floodplain Quarry

2 Tildon Drive CLUNES NSW 2480

Parameter	Methods reference	Sample 1 LFPB1 2/9/19	Sample 2 LFPB2 2/9/19	Sample 3 LFPB3 2/9/19	Sample 4 LFPB4 2/9/19	Sample 5 LFPB5 2/9/19	Sample 6 LFPSW1 2/9/19
	Job No.	*i5449/1*	*i5449/2*	*i5449/3*	*i5449/4*	*i5449/5*	*i5449/6*
pH	APHA 4500-H^+ -B	7.80	7.05	7.09	7.25	7.08	7.62
Conductivity (EC) (dS/m)	APHA 2510-B	1.37	2.55	2.06	3.71	2.18	0.482
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	933	1,736	1,400	2,522	1,480	328
Total Suspended Solids (mg/L)	GFC equiv. filter - APHA 2540-D	894	398	122	375	835	10
Bicarbonate (Alkalinity) (mg/L $CaCO_3$ equivalent)	** Total Alkalinity - APHA 2320	540	440	710	890	685	..
Biochemical Oxygen Demand$_5$ (mg/L O_2)	APHA 5210-B	2.8	< 1	1.1	< 1	2.0	..
Total Oils and Grease (mg/L)	APHA 5520-D (hexane extractable)	..	..	..	..	..	< 2
Total Phosphorus (mg/L P)	In house method W4	1.56	0.54	0.94	0.66	1.72	..
Phosphate (mg/L P)	APHA 4500 P-G	0.469	0.124	0.805	0.398	0.109	..
Total Nitrogen (mg/L N)	In house method W4	0.32	0.09	0.29	0.34	0.18	..
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN – NOx	0.31	0.09	0.29	0.34	0.18	..
Nitrate (mg/L N)	APHA 4500 NO_3-F	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	..
Nitrite (mg/L N)	APHA 4500 NO_2-I	0.005	0.006	< 0.005	< 0.005	< 0.005	..
Ammonia (mg/L N)	APHA 4500 NH_3-H	0.056	0.061	0.266	0.188	0.064	..
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	< 10	< 10	< 10	< 10	< 10	..
Silver (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	..
Aluminium (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	0.008	< 0.005	< 0.005	< 0.005	< 0.005	..
Arsenic (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	< 0.001	< 0.001	< 0.001	0.003	< 0.001	..
Cadmium (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	..
Chromium (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	..
Copper (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	0.002	0.001	0.003	0.008	< 0.001	..
Iron (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	0.009	0.007	< 0.005	< 0.005	< 0.005	..
Manganese (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	0.034	1.742	0.261	0.323	2.020	..
Nickel (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	< 0.001	0.002	0.001	0.002	0.002	..
Lead (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	..
Selenium (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	..
Zinc (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	0.094	0.003	0.003	0.036	0.010	..
Mercury (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	..
Calcium (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	26.7	170	107	157	155	..
Magnesium (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	30.1	129	101	144	104	..
Potassium (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	1.8	2.3	4.2	3.4	1.6	..
Sodium (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	267	130	192	405	163	..
Chloride (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	118	506	260	688	294	..
Sulfur (mg/L)	Dissolved - APHA 3125 ICPMS[*note 1&2]	7.97	3.15	0.61	10.3	26.8	..

Notes:

1. 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
2. Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
3. 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
4. For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
5. Analysis performed according to APHA (2017) 'Standard Methods for the Examination of Water & Wastewater', 23rd Edition, except where stated otherwise.
6. Analysis conducted between sample arrival date and reporting date.
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11. Results relate only to the samples tested.
12. This report was issued on 09/09/2019.

checked: .....
Graham Lancaster
Laboratory Manager

RESULTS OF WATER ANALYSIS

5 samples supplied by Gilbert and Sutherland Pty Ltd on 5/12/2019 . Lab Job No. i8641.
Samples submitted by Scott Porter. Your Job: 12067
5/232 Robina Town Centre Drive ROBINA QLD 4226

Parameter	Methods reference	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
		LFPB1	LFPB2	LFPB3	LFPB4	LFPB5
	Job No.	*i8641/1*	*i8641/2*	*i8641/3*	*i8641/4*	*i8641/5*
pH	APHA 4500-H^+-B	7.52	6.94	6.97	7.00	7.27
Conductivity (EC) (dS/m)	APHA 2510-B	1.338	2.430	2.332	3.450	2.192
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	910	1,652	1,586	2,346	1,491
Total Dissolved Solids (mg/L)	** APHA 2540C - Evaporation of filtrate	809	1,860	1,505	2,217	1,341
Total Suspended Solids (mg/L)	GFC equiv. filter - APHA 2540-D	15	13	12	8	<1
Biochemical Oxygen Demand$_5$ (mg/L O_2)	APHA 5210-B	2.0	1.7	1.8	1.7	<0.5
Total Oils and Grease (mg/L)	APHA 5520-D (hexane extractable)	2	3	3	3	3
Total Phosphorus (mg/L P)	In house method W4	0.48	0.39	0.63	0.36	0.13
Phosphate (mg/L P)	APHA 4500 P-G	0.448	0.096	0.550	0.338	0.087
Total Nitrogen (mg/L N)	In house method W4	0.05	<0.01	0.09	0.12	0.03
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN – NOx	0.05	..	0.08	0.12	0.03
Nitrate (mg/L N)	APHA 4500 NO_3^--F	<0.005	<0.005	0.007	<0.005	0.005
Nitrite (mg/L N)	APHA 4500 NO_2^--I	<0.005	<0.005	<0.005	<0.005	<0.005
Ammonia (mg/L N)	APHA 4500 NH_3-H	0.046	0.050	0.079	0.077	0.019
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	<10	<10	<10	<10	<10
Silver (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	<0.010	<0.010	<0.010	<0.010	<0.010
Aluminium (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	0.151	0.059	0.032	0.042	0.034
Arsenic (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	0.002	<0.001	<0.001	0.005	<0.001
Cadmium (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	<0.001	<0.001	<0.001	<0.001	<0.001
Copper (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	0.004	<0.001	0.045	0.017	0.020
Iron (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	0.079	0.994	0.091	0.057	0.026
Manganese (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	0.013	1.848	0.186	0.376	1.418
Nickel (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	0.003	0.001	0.002	0.011	0.005
Lead (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	<0.001	<0.001	0.001	0.002	<0.001
Selenium (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	<0.002	<0.002	<0.002	<0.002	<0.002
Zinc (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	0.015	0.006	0.011	0.074	0.061
Mercury (mg/L)	Total Available - APHA 3125 ICPMS*note 1&2	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Silver (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	<0.010	<0.010	<0.010	<0.010	<0.010
Aluminium (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	<0.001	0.003	0.005	0.005	0.002
Cadmium (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	0.001	<0.001	<0.001	<0.001	<0.001
Copper (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	0.003	<0.001	0.039	0.009	0.018
Iron (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	0.024	0.227	0.006	0.006	0.008
Manganese (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	0.011	1.848	0.182	0.372	1.416
Nickel (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	0.002	0.001	0.003	0.012	0.004
Lead (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	<0.002	<0.002	0.008	<0.002	<0.002
Zinc (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	0.011	0.005	0.010	0.070	0.062
Mercury (mg/L)	Dissolved - APHA 3125 ICPMS*note 1&2	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Notes:

1. 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
2. Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
3. 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
4. For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
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checked: .....
Graham Lancaster
Laboratory Manager

RESULTS OF WATER ANALYSIS

5 samples supplied by Gilbert and Sutherland Pty Ltd on 18/12/2019. Lab Job No. i9117.
Samples submitted by Scott Porter. Your Job: 12067 - additional
5/232 Robina Town Centre Drive ROBINA QLD 4226

Parameter	Methods reference	Sample 1 LFPB1	Sample 2 LFPB2	Sample 3 LFPB3	Sample 4 LFPB4	Sample 5 LFPB5
	Job No.	*i9117/1*	*i9117/2*	*i9117/3*	*i9117/4*	*i9117/5*
Bicarbonate (Alkalinity) (mg/L $CaCO_3$ equivalent)	** Total Alkalinity - APHA 2320	510	430	580	780	530
Calcium (mg/L)	APHA 3125 ICPMS*note 1&2	26.2	172	136	166	160
Magnesium (mg/L)	APHA 3125 ICPMS*note 1&2	30.0	127	119	156	102
Potassium (mg/L)	APHA 3125 ICPMS*note 1&2	2.4	3.2	3.8	3.4	2.5
Sodium (mg/L)	APHA 3125 ICPMS*note 1&2	222	115	167	381	150
Chloride (mg/L)	APHA 3125 ICPMS*note 1&2	41.0	499	329	638	280
Sulfur (mg/L)	APHA 3125 ICPMS*note 1&2	10.2	4.62	2.56	19.6	34.7

Notes:

1. 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
2. Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
3. 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
4. Analysis performed according to APHA (2017) 'Standard Methods for the Examination of Water & Wastewater', 23rd Edition, except where stated otherwise.
5. Analysis conducted between sample arrival date and reporting date.
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10. Results relate only to the samples tested.
11. This report was issued on 19/12/2019.

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checked: .....
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Laboratory Manager