

RESULTS OF WATER ANALYSIS

9 samples supplied by Ecoteam on 11/03/2024, Lab Job No. R1636.
 Samples submitted by Lisa Bolton, Your Job: SMC010-Blakebrook WQ - Groundwater - March 24
 13 Ewing Street LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8	Sample 9
		BQN1-B	BQN1-A	BQN1-D	BQN2-B	BQN2-A	BQN2-D	BQS1-S	BQS1-I	BQS1-D
	Job No.	R1636/1	R1636/2	R1636/3	R1636/4	R1636/5	R1636/6	R1636/7	R1636/8	R1636/9
Total Alkalinity (mg/L CaCO ₃ equivalent)	** Total Alkalinity - APHA 2320	231	86	122	107	154	337	115	369	134
Water Hardness (mg/L CaCO ₃ equivalent)	** Using Ca and Mg calculation	136	72	24	60	78	11	68	156	42
Total Oils and Grease (mg/L)	APHA 5520-D (hexane extractable)	<2	<2	<2	<2	<2	4	<2	2	4
Sodium (mg/L)	APHA 3125 ICPMS ¹⁰⁰⁰ 182	160	316	273	170	74.3	209	38.6	109	349
Potassium (mg/L)	APHA 3125 ICPMS ¹⁰⁰⁰ 182	3.68	7.65	2.42	7.80	4.28	1.79	3.29	5.14	4.19
Calcium (mg/L)	APHA 3125 ICPMS ¹⁰⁰⁰ 182	24.2	25.1	8.47	23.1	17.7	3.34	16.7	40.8	13.3
Magnesium (mg/L)	APHA 3125 ICPMS ¹⁰⁰⁰ 182	18.4	2.19	0.76	0.48	8.19	0.65	6.41	13.2	2.00
Sodium Absorption Ratio (SAR)	** By calculation	6.0	16.2	24.1	9.5	3.7	27.3	2.0	3.8	23.5
Chloride (mg/L)	APHA 3125 ICPMS ¹⁰⁰⁰ 182	271	566	403	324	138	156	89.1	63.3	470
Sulfate (mg/L SO ₄ ²⁻)	APHA 3125 ICPMS ¹⁰⁰⁰ 182	123	125	162	123	117	122	106	105	141
Chloride/Sulfate Ratio	** Calculation	2.2	4.5	2.5	2.6	1.2	1.3	0.8	0.6	3.3
Iron (mg/L)	Total Available - APHA 3125 ICPMS ¹⁰⁰⁰ 182	0.948	0.023	0.567	0.060	0.038	0.015	0.126	0.304	0.093
Lead (mg/L)	Total Available - APHA 3125 ICPMS ¹⁰⁰⁰ 182	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Iron (mg/L)	Dissolved - APHA 3125 ICPMS ¹⁰⁰⁰ 182	0.333	0.006	0.007	0.007	0.007	0.007	0.009	0.007	0.013
Lead (mg/L)	Dissolved - APHA 3125 ICPMS ¹⁰⁰⁰ 182	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BTEX										
Benzene (µg/L)	Subcontracted: SGS report SE 262096	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene (µg/L)	Subcontracted: SGS report SE 262096	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene (µg/L)	Subcontracted: SGS report SE 262096	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene (µg/L)	Subcontracted: SGS report SE 262096	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-xylene (µg/L)	Subcontracted: SGS report SE 262096	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes (µg/L)	Subcontracted: SGS report SE 262096	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Total BTEX (µg/L)	Subcontracted: SGS report SE 262096	<3	<3	<3	<3	<3	<3	<3	<3	<3
Naphthalene (VOC) (µg/L)	Subcontracted: SGS report SE 262096	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Recoverable Hydrocarbons (TRH)										
TRH C6-C9 (µg/L)	Subcontracted: SGS report SE 262096	<40	<40	<40	<40	<40	<40	<40	<40	<40
Benzene (F0) (µg/L)	Subcontracted: SGS report SE 262096	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10 (µg/L)	Subcontracted: SGS report SE 262096	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1) (µg/L)	Subcontracted: SGS report SE 262096	<50	<50	<50	<50	<50	<50	<50	<50	<50
LLTRH C10-C14 (µg/L)	Subcontracted: SGS report SE 262096	<50	<50	<50	<50	<50	<50	<50	<50	<50
LLTRH C15-C28 (µg/L)	Subcontracted: SGS report SE 262096	<100	<100	<100	<100	<100	<100	<100	<100	130
LLTRH C29-C36 (µg/L)	Subcontracted: SGS report SE 262096	<50	<50	<50	<50	<50	<50	<50	<50	64
LLTRH >C10-C16 (µg/L)	Subcontracted: SGS report SE 262096	<50	<50	<50	<50	<50	<50	<50	<50	100
LLTRH >C16-C34 (F3) (µg/L)	Subcontracted: SGS report SE 262096	<100	<100	<100	<100	<100	<100	<100	<100	130
LLTRH >C34-C40 (F4) (µg/L)	Subcontracted: SGS report SE 262096	<100	<100	<100	<100	<100	<100	<100	<100	<100
TRH Sum C10-C36 (µg/L)	Subcontracted: SGS report SE 262096	<100	<100	<100	<100	<100	<100	<100	<100	240
LLTRH C37-C40 (µg/L)	Subcontracted: SGS report SE 262096	<100	<100	<100	<100	<100	<100	<100	<100	<100
TRH C10-C14-Silica (µg/L)	Subcontracted: SGS report SE 262096A	..	..	..	..	..	..	..	..	<50
TRH C15-C28-Silica (µg/L)	Subcontracted: SGS report SE 262096A	..	..	..	..	..	..	..	..	<200
TRH C29-C36-Silica (µg/L)	Subcontracted: SGS report SE 262096A	..	..	..	..	..	..	..	..	<200
TRH C37-C40-Silica (µg/L)	Subcontracted: SGS report SE 262096A	..	..	..	..	..	..	..	..	<200
TRH >C10-C16-Silica (µg/L)	Subcontracted: SGS report SE 262096A	..	..	..	..	..	..	..	..	<60
TRH >C16-C34-Silica (µg/L)	Subcontracted: SGS report SE 262096A	..	..	..	..	..	..	..	..	<500
TRH >C34-C40-Silica (µg/L)	Subcontracted: SGS report SE 262096A	..	..	..	..	..	..	..	..	<500
TRH Sum C10-C36-Silica (µg/L)	Subcontracted: SGS report SE 262096A	..	..	..	..	..	..	..	..	<225
TRH Sum C10-C40-Silica (µg/L)	Subcontracted: SGS report SE 262096A	..	..	..	..	..	..	..	..	<320

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 re-issued on 5/04/2024 and replaces the report issued on 4/04/2024. pH and EC removed at clients' request.



BLAKEBROOK QUARRY- GROUNDWATER QUALITY ASSESSMENT

Sampling Observations- March 2024.

Sample Information	Blakebrook Quarry Groundwater Well Sampling Information								
	SOUTH			NORTH 1			NORTH 2		
Site Name	BQS1S	BQS1I	BQS1D	BQN1B	BQN1A	BQN1D	BQN2B	BQN2A	BQN2D
Well Type	Shallow	Intermediate	Deep	Shallow	Intermediate	Deep	Shallow	Intermediate	Deep
Date	08/03/24	08/03/24	08/03/24	08/03/24	08/03/24	08/03/24	08/03/24	08/03/24	08/03/24
Time	10:50	11:30	11:50	12:50	13:55	13:00	9:50	8:30	8:40
Recorded Depth 1	23.77	47.8	78.54	7.42	46.30	100.14	29.15	29.96	87.58
Recorded Depth 2	24.12	48.38	78.44	7.62	46.10	100.86	29.54	30.10	87.60
Level Meter Calibrated	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Battery Level	50%	50%	50%	50%	50%	50%	50%	50%	50%
Memory Level	78%	78%	78%	75%	71%	81%	81%	84%	81%
Sample Method	Bottom filling bailer from screen zone	Bottom filling bailer from screen zone	Hydro sleeve bailer from screen zone	12-volt submersible pump	Bottom filling bailer from screen zone	Hydro sleeve bailer from screen zone	Bottom filling bailer from screen zone	Bottom filling bailer from screen zone	Hydro sleeve bailer from screen zone
Odour	Not Present	Not Present	Present-Sulfur	Not Present	Not Present	Not Present	Not Present	Not Present	Present-Sulfur
Site/Water Observations	Clear	Clear	Clear, small particles	Clear	Clear	Clear, small particles	Clear	Clear	Clear
Fresh Water WQOs	Water Quality Observations								
pH	7.05	7.26	7.84	7.01	10.66	8.47	10.86	7.79	8.45
EC μ S/m	0.24	0.55	1.34	0.80	1.42	1.06	0.84	0.39	0.77
DO (%)	65.93	62.82	50.65	6.91	73.29	57.17	59.15	86.28	52.06
Temperature (°C)	22.86	23.16	23.43	20.61	23.30	22.91	22.33	22.27	23.06
ORP	159.93	101.77	23.15	-17.9	42.3	44.8	78.50	98.88	90.83