

COFFS HARBOUR LABORATORY

Environmental Analysis

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GALINTEL
KEVINELKS
P. O. BOX 396
COFFS HARBOUR NSW 2450

BATCHNUMBER: 18/2081
No. of SAMPLES: 10
DATE COLLECTED: 24/09/18
DATE RECEIVED: 25/09/18
TIME RECEIVED: 09:20
DATE TESTING COMMENCED:
25/09/18

REPORT OF ANALYSIS

SAMPLE REFERENCE	SAMPLE DESCRIPTION
18/2081/1	POINT 1
18/2081/2	POINT 2A
18/2081/3	POINT 2B
18/2081/4	POINT 3
18/2081/5	POINT 4
18/2081/6	POINT 5
18/2081/7	POINT 6
18/2081/8	POINT 7
18/2081/9	POINT 8
18/2081/10	POINT 9

ANALYSIS	UNITS	18/2081/1	18/2081/2	18/2081/3	18/2081/4	METHOD NO	
pH	pH unit	4.7	6.9	6.9	6.9	APHA 4500-H+B	
Conductivity	µS/cm	221	159	126	89	APHA 2510 B	
Total Suspended Solids	mg/L	22	36	33	6	APHA 2540 D	
Total Dissolved Solids	mg/L	141	102	80	57	EL7B	
Total Hardness	mg CaCO ₃ /L	21	37	27	17	EL9A	
Alkalinity	mg CaCO ₃ /L	<2	23	17	12	APHA 2320 B	
Chloride	mg/L	57	23	18	11	EL10A	
Sulfate	mg/L	1.4	7.8	6.3	2.4	EL9A	
Calcium	mg/L	7.7	11	8.3	5.9	EL9A	
Magnesium	mg/L	0.38	1.9	1.5	0.51	EL9A	
Sodium	mg/L	2.9	11	9.3	3.0	EL9A	
Potassium	mg/L	0.90	1.8	1.5	0.90	EL9A	
Zinc - Total*	ug/L	15,000	1,320	1,060	2,490	NT2 47	
Zinc - Filtered*	ug/L	17,300	1,580	1,220	2,570	NT2 47	
Copper - Total*	ug/L	250	20	17	37	NT2 47	
Copper - Filtered*	ug/L	330	24	20	35	NT2 47	
Nickel-Total*	ug/L	400	32	7.6	2.6	NT2 47	
Nickel-Filtered*	ug/L	420	33	7.3	2.6	NT2 47	
Manganese - Total*	ug/L	1,702.5	420	33	7.3	2.6	NT2 47
	ug/L (chemical) & 1.570 (Microbiolog)			86	29	NT2 47	

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian and International standards.

ANALYSIS	UNITS	18/2081/1	18/2081/2	18/2081/3	18/2081/4	METHODNO
Manganese - Filtered*	ug/L	610	150	89	31	NT2 47
Iron - Total*	ug/L	12,300	1,580	1,100	180	NT2 47
Iron - Filtered*	ug/L	13,700	1,560	680	140	NT2 47
Lead - Total*	ug/L	17	41	43	7	NT2 47
Lead - Filtered*	ug/L	53	45	46	6.4	NT2 47
Cobalt -Total*	ug/L	5.9	1.4	1.0	<1	NT2 47
Cobalt -Filtered*	ug/L	6.2	1.7	1.0	<1	NT2 47
Chromium - Trivalent*	ug/L	4.0	3.7	2.2	4.8	NT2 47
Chromium - Hexavalent*	mg/L	0.033	<0.001	<0.001	<0.001	NW D2
Chromium - Total*	ug/L	37	4	2	5	NT2 47
Ammonia Nitrogen	mg/L	0.50	<0.05	<0.05	0.06	EL13F

ANALYSIS	UNITS	18/2081/5	18/2081/6	18/2081/7	18/2081/8	METHODNO
pH	pH unit	6.4	5.8	3.8	5.3	APHA4500-H+ B
Conductivity	µS/cm	82	240	370	70	APHA 2510 B
Total Suspended Solids	mg/L	15	10	9	5	APHA 2540 D
Total Dissolved Solids	mg/L	52	154	237	44	EL7B
Total Hardness	mg CaCO ₃ /L	14	24	17	7	EL9A
Alkalinity	mg CaCO ₃ /L	11	4	<2	2	APHA 2320 B
Chloride	mg/L	8.6	58	91	12	EL10A
Sulfate	mg/L	3.1	11	3.8	1.7	EL9A
Calcium	mg/L	3.8	3.5	2.9	2.2	EL9A
Magnesium	mg/L	1.0	3.7	2.3	0.37	EL9A
Sodium	mg/L	4.0	29	17	2.6	EL9A
Potassium	mg/L	2.7	1.1	0.89	0.17	EL9A
Zinc - Total*	ug/L	170	2,490	20,500	2,450	NT2 47
Zinc - Filtered*	ug/L	170	2,590	22,300	2,510	NT2 47
Copper - Total*	ug/L	11	24	180	100	NT2 47
Copper - Filtered*	ug/L	9.1	26	190	14	NT2 47
Nickel-Total*	ug/L	<1	1.8	44	8.3	NT2 47
Nickel-Filtered*	ug/L	<1	1.4	45	8.3	NT2 47
Manganese - Total*	ug/L	43	57	130	380	NT2 47
Manganese - Filtered*	ug/L	38	57	130	370	NT2 47
Iron - Total*	ug/L	310	82	1,920	1,170	NT2 47
Iron - Filtered*	ug/L	120	82	1,950	550	NT2 47
Lead - Total*	ug/L	27	2	4,100	29	NT2 47
Lead - Filtered*	ug/L	17	2.2	4,290	25	NT2 47
Cobalt -Total*	ug/L	<1	<1	2.3	<1	NT2 47
Cobalt -Filtered*	ug/L	<1	<1	2.2	<1	NT2 47
Chromium - Trivalent*	ug/L	1.7	<1	17	<1	NT2 47
Chromium - Hexavalent*	mg/L	<0.001	<0.001	0.007	<0.001	NW D2
Chromium - Total*	ug/L	2	<1	24	<1	NT2 47
Ammonia Nitrogen	mg/L	<0.05	0.67	2.97	0.39	EL13F



Accredited for compliance with ISO/IEC 17025.
[Accreditation Numbers: 12359 (Chemical) & 14565 (Microbiological)]

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ANALYSIS	UNITS	18/2081/9	18/2081/10			METHODNO
pH	pH unit	7.4	7.5			APHA 4500-H+ B
Conductivity	µS/cm	106	36,300			APHA 2510 B
Total Suspended Solids	mg/L	4	8			APHA 2540 D
Total Dissolved Solids	mg/L	68	23,200			EL7B
Total Hardness	mg CaCO ₃ /L	25	4,180			EL9A
Alkalinity	mg CaCO ₃ /L	21	86			APHA 2320 B
Chloride	mg/L	8.9	16,700			EL10A
Sulfate	mg/L	2.6	1,820			EL9A
Calcium	mg/L	9.4	270			EL9A
Magnesium	mg/L	0.43	850			EL9A
Sodium	mg/L	3.8	6,860			EL9A
Potassium	mg/L	1.4	336			EL9A
Zinc - Total*	ug/L	1,130	48			NT2 47
Zinc - Filtered*	ug/L	1,280	55			NT2 47
Copper - Total*	ug/L	17	2			NT2 47
Copper - Filtered*	ug/L	16	2.6			NT2 47
Nickel-Total*	ug/L	<1	1.0			NT2 47
Nickel-Filtered*	ug/L	<1	1.1			NT2 47
Manganese - Total*	ug/L	22	50			NT2 47
Manganese - Filtered*	ug/L	22	52			NT2 47
Iron - Total*	ug/L	97	140			NT2 47
Iron - Filtered*	ug/L	44	140			NT2 47
Lead - Total*	ug/L	2	<1			NT2 47
Lead - Filtered*	ug/L	1.1	1.0			NT2 47
Cobalt -Total*	ug/L	<1	<1			NT2 47
Cobalt -Filtered*	ug/L	<1	<1			NT2 47
Chromium - Trivalent*	ug/L	2.4	<1			NT2 47
Chromium - Hexavalent*	mg/L	<0.001	<0.001			NW D2
Chromium - Total*	ug/L	2	<1			NT2 47
Ammonia Nitrogen	mg/L	<0.05	<0.05			EL13F

ANALYSIS	UNITS	18/2081/1	18/2081/2	18/2081/3	18/2081/4	METHODNO
TOTAL RECOVERABLE HYDROCARBONS						
TRHC6-C9*	ug/L	<25	<25	<25	<25	NGCMS 1121
TRHC10-C14*	ug/L	<25	<25	<25	<25	NGCMS 1112
TRHC15-C28*	ug/L	<100	<100	<100	<100	NGCMS 1112
TRHC29-C36*	ug/L	<100	<100	<100	<100	NGCMS 1112
TOTAL RECOVERABLE HYDROCARBON*						
TRHC6-C10	ug/L	<25	<25	<25	<25	NGCMS 1121
TRHC6-C10 less BTEX(F1)	ug/L	<25	<25	<25	<25	NGCMS 1121
TRH>C10-C16	ug/L	<25	<25	<25	<25	NGCMS 1112
TRH>C10 - C16 less Naph (F2)	ug/L	<25	<25	<25	<25	NGCMS 1112
TRH>C16-C34(F3)	ug/L	<100	<100	<100	<100	NGCMS 1112
TRH>C34-C40(F4)	ug/L	<100	<100	<100	<100	NGCMS 1112



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ANALYSIS	UNITS	18/2081/5	18/2081/6	18/2081/7	18/2081/8	METHODNO
TOTAL RECOVERABLE HYDROCARBONS						
TRHC6-C9*	ug/L	<25	<25	<25	<25	NGCMS 1121
TRHC10-C14*	ug/L	<25	<25	<25	<25	NGCMS 1112
TRHC15-C28*	ug/L	<100	<100	<100	<100	NGCMS 1112
TRHC29-C36*	ug/L	<100	<100	<100	<100	NGCMS 1112
TOTAL RECOVERABLE HYDROCARBON*						
TRHC6- C10	ug/L	<25	<25	<25	<25	NGCMS 1121
TRHC6- C10 less BTEX(F1)	ug/L	<25	<25	<25	<25	NGCMS 1121
TRH>C10-C16	ug/L	<25	<25	<25	<25	NGCMS 1112
TRH>C10 - C16 less Naph (F2)	ug/L	<25	<25	<25	<25	NGCMS 1112
TRH>C16-C34(F3)	ug/L	<100	<100	<100	<100	NGCMS 1112
TRH>C34-C40(F4)	ug/L	<100	<100	<100	<100	NGCMS 1112

ANALYSIS	UNITS	18/2081/9	18/2081/10			METHODNO
TOTAL RECOVERABLE HYDROCARBONS						
TRHC6-C9*	ug/L	<25	<25			NGCMS 1121
TRHC10-C14*	ug/L	<25	<25			NGCMS 1112
TRHC15-C28*	ug/L	<100	<100			NGCMS 1112
TRHC29-C36*	ug/L	<100	<100			NGCMS 1112
TOTAL RECOVERABLE HYDROCARBON*						
TRHC6- C10	ug/L	<25	<25			NGCMS 1121
TRHC6- C10 less BTEX(F1)	ug/L	<25	<25			NGCMS 1121
TRH>C10-C16	ug/L	<25	<25			NGCMS 1112
TRH>C10 - C16 less Naph (F2)	ug/L	<25	<25			NGCMS 1112
TRH>C16-C34(F3)	ug/L	<100	<100			NGCMS 1112
TRH>C34-C40(F4)	ug/L	<100	<100			NGCMS 1112

Comments

Sample(s) collected by client and analysed as received in accordance with "Standard Methods for the Examination of Water & Wastewater", 22nd Edition, 2012, APHA. Raw data sheets stating analysis dates are available upon request.

Tests marked with '#' are not covered by NATA Accreditation.

Note: Microbiological results are membrane presumptive.

*Analysis conducted by a subcontracted laboratory (NATA Accreditation Number 198) RN 1210023.

Chromium Trivalent is calculated from the difference between Chromium Total and Chromium Hexavalent.

The filtered analyses were conducted on acidified 'field filtered' samples, however it was noted that there were sediments visible in these bottles which may result in elevated levels of trace metals in solution.

Report Date: 9/10/18



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[Accreditation Numbers: 12359 (Chemical) & 14565 (Microbiological)]

Approved:

G. Giles
Geraldine Giles - Delegate for

B J Wadleigh
Laboratory Manager