

CERTIFICATE OF ANALYSIS

Work Order : **EW1801902**
Client : **WINGECARRIBEE SHIRE COUNCIL**
Contact : MR CHRIS MURPHY
Address : PO BOX 141
 MOSSVALE NSW
 AUSTRALIA
Telephone : ----
Project : RRC Quarterly
Order number : ----
C-O-C number : ----
Sampler : Robert DaLio
Site : ----
Quote number : WO/067/12
No. of samples received : 6
No. of samples analysed : 6

Page : 1 of 5
Laboratory : Environmental Division NSW South Coast
Contact : Glenn Davies
Address : 1/19 Ralph Black Dr, North Wollongong 2500
 4/13 Geary Pl, North Nowra 2541
 Australia NSW
Telephone : 02 42253125
Date Samples Received : 08-May-2018 15:40
Date Analysis Commenced : 09-May-2018
Issue Date : 15-May-2018 14:25



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Glenn Davies	Environmental Services Representative	Laboratory - Wollongong, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



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.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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

∅ = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- Sampling and sample data supplied by ALS Wollongong.
- Sampling completed as per FWI-EN001 Groundwater Sampling.
- Sampling completed as per FWI-EN002 Surface Water Sampling.
- Field tests completed on day of sampling/receipt.



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Client sample ID

				Point 1 MW1B (Front Gate)	Point 2 MW06 (Car Park)	Point 3 MW7 (South of Pond)	Point 5 SW01 (Upstream Stormwater)	Point 6 SW02 (Holding Pond)
Client sampling date / time				08-May-2018 00:00	08-May-2018 00:00	08-May-2018 00:00	08-May-2018 00:00	08-May-2018 00:00
Compound	CAS Number	LOR	Unit	EW1801902-001	EW1801902-002	EW1801902-003	EW1801902-005	EW1801902-006
				Result	Result	Result	Result	Result
EA005FD: Field pH								
pH	----	0.1	pH Unit	5.8	4.3	4.3	----	8.8
EA010FD: Field Conductivity								
Electrical Conductivity (Non Compensated)	----	1	µS/cm	5900	459	2780	----	981
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	3620	294	1370	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	----	----	----	----	67
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	116	<1	<1	----	----
Total Alkalinity as CaCO3	----	1	mg/L	116	<1	<1	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	88	2	<1	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	1500	136	862	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	197	<1	7	----	----
Magnesium	7439-95-4	1	mg/L	156	5	34	----	----
Sodium	7440-23-5	1	mg/L	647	74	436	----	----
Potassium	7440-09-7	1	mg/L	16	<1	1	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.06	0.15	0.01	----	5.22
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	46.5	3.88	24.3	----	----
Total Cations	----	0.01	meq/L	51.2	3.63	22.1	----	----
Ionic Balance	----	0.01	%	4.87	3.30	4.69	----	----
EN67 PK: Field Tests								
Field Observations	----	0.01	--	----	----	----	DRY	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	11	8	4	----	33



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Client sample ID

				Point 1 MW1B (Front Gate)	Point 2 MW06 (Car Park)	Point 3 MW7 (South of Pond)	Point 5 SW01 (Upstream Stormwater)	Point 6 SW02 (Holding Pond)
Client sampling date / time				08-May-2018 00:00	08-May-2018 00:00	08-May-2018 00:00	08-May-2018 00:00	08-May-2018 00:00
Compound	CAS Number	LOR	Unit	EW1801902-001	EW1801902-002	EW1801902-003	EW1801902-005	EW1801902-006
				Result	Result	Result	Result	Result
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	----	----	----	----	40
FWI-EN/001: Groundwater Sampling - Depth								
Depth	----	0.01	m	4.30	2.10	2.60	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Point 7 SW03 (Polishing Pond)	----	----	----	----
Client sampling date / time			08-May-2018 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	EW1801902-007	-----	-----	-----	-----
				Result	----	----	----	----
EA005FD: Field pH								
pH	----	0.1	pH Unit	8.7	----	----	----	----
EA010FD: Field Conductivity								
Electrical Conductivity (Non Compensated)	----	1	µS/cm	1290	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	53	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.07	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	36	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	5	----	----	----	----