



Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EW1500486	Page	: 1 of 4
Client	: WINGECARRIBEE SHIRE COUNCIL	Laboratory	: Environmental Division NSW South Coast
Contact	: MR Scott McAllan	Contact	: Glenn Davies
Address	: PO BOX 141 MOSSVALE NSW AUSTRALIA	Address	: 99 Kenny Street, Wollongong 2500 Unit 4 / 13 Geary Place, PO Box 3105, North Nowra 2541 AUSTRALIA
E-mail	: scott.mcallan@wsc.nsw.gov.au	E-mail	: glenn.davies@alsglobal.com
Telephone	: ----	Telephone	: 02 4225 3125
Facsimile	: ----	Facsimile	: 02 4225 3128
Project	: RRC Quarterly	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 11-FEB-2015
C-O-C number	: ----	Issue Date	: 23-FEB-2015
Sampler	: Craig Wilson	No. of samples received	: 6
Site	: ----	No. of samples analysed	: 6
Quote number	: WO/067/12		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been 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
Glenn Davies	Environmental Services Representative	Laboratory - Wollongong
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics

Address 99 Kenny Street, Wollongong 2500

Environmental Division NSW South Coast, PO Box 3105, North Nowra 2541, Australia. An ALS Limited Company

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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

- **Field tests completed on day of sampling/receipt.**
- **Ionic Balance out of acceptable limits due to analytes not quantified in this report.**
- **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.**



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

Client sampling date / time

				EPA 1	EPA 2	EPA 3	EPA 5	EPA 6
				11-FEB-2015 11:50	11-FEB-2015 11:35	11-FEB-2015 11:15	11-FEB-2015 11:25	11-FEB-2015 10:50
Compound	CAS Number	LOR	Unit	EW1500486-001	EW1500486-002	EW1500486-003	EW1500486-004	EW1500486-005
EA005FD: Field pH								
pH	----	0.1	pH Unit	4.3	4.0	4.1	7.7	8.2
EA010FD: Field Conductivity								
Electrical Conductivity (Non Compensated)	----	1	µS/cm	3700	594	3170	1830	613
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	----	10	mg/L	2450	388	1620	1020	440
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	<1	3	<1	----	----
Total Alkalinity as CaCO3	----	1	mg/L	<1	3	<1	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	178	1	<1	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	598	164	891	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	191	3	8	----	----
Magnesium	7439-95-4	1	mg/L	108	8	57	----	----
Sodium	7440-23-5	1	mg/L	422	98	569	----	----
Potassium	7440-09-7	1	mg/L	41	1	2	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.44	0.21	0.05	5.78	0.03
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	20.6	4.71	25.1	----	----
Total Cations	----	0.01	meq/L	37.8	5.10	29.9	----	----
Ionic Balance	----	0.01	%	29.5	3.96	8.63	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	22	1	3	25	28
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	----	----	----	<2	10
FWI-EN/001: Groundwater Sampling - Depth								
Depth	----	0.01	m	3.15	2.13	1.90	----	----



Analytical Results

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

Client sample ID

EPA 7

Client sampling date / time

11-FEB-2015 11:00

Compound	CAS Number	LOR	Unit	EW1500486-006	----	----	----	----
EA005FD: Field pH								
pH	----	0.1	pH Unit	7.7	----	----	----	----
EA010FD: Field Conductivity								
Electrical Conductivity (Non Compensated)	----	1	µS/cm	1660	----	----	----	----
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	----	10	mg/L	1270	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	1.34	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	115	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	91	----	----	----	----