



Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EW1401400	Page	: 1 of 4
Client	: WINGECARRIBEE SHIRE COUNCIL	Laboratory	: Environmental Division NSW South Coast
Contact	: MR ROBERT SAVERINO	Contact	: Glenn Davies
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Project	: RRC Analysis	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 08-MAY-2014
C-O-C number	: ----	Issue Date	: 19-MAY-2014
Sampler	: ----	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

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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

- **EN055: Ionic Balance out of acceptable limits for samples EPA1 and EPA3 due to analytes not quantified in this report.**
- **EP005 : NPOC analysis was carried out for sample ID EPA 2 due to high inorganic carbon content.**
- **Sampling and sample data supplied by ALS Wollongong.**



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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.

Signatories

Position

Accreditation Category

Ankit Joshi

Inorganic Chemist

Sydney Inorganics

Ashesh Patel

Inorganic Chemist

Sydney Inorganics

Glenn Davies

Environmental Services Representative

Laboratory - Wollongong

Hoa Nguyen

Senior Inorganic Chemist

Sydney Inorganics

Shobhna Chandra

Metals Coordinator

Sydney Inorganics



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

Client sampling date / time

				EPA 1	EPA 2	EPA 3	EPA 5	EPA 6
				08-MAY-2014 12:30	08-MAY-2014 13:10	08-MAY-2014 13:05	08-MAY-2014 12:50	08-MAY-2014 12:55
Compound	CAS Number	LOR	Unit	EW1401400-001	EW1401400-002	EW1401400-003	EW1401400-004	EW1401400-005
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	----	10	mg/L	2640	351	2200	1020	455
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	31	<1	<1	----	----
Total Alkalinity as CaCO3	----	1	mg/L	31	<1	<1	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	307	<1	<1	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	522	178	1000	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	193	<1	19	----	----
Magnesium	7439-95-4	1	mg/L	101	10	68	----	----
Sodium	7440-23-5	1	mg/L	330	93	583	----	----
Potassium	7440-09-7	1	mg/L	41	<1	3	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.36	0.17	0.03	0.01	1.55
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	21.7	5.02	28.2	----	----
Total Cations	----	0.01	meq/L	33.4	4.87	32.0	----	----
Ionic Balance	----	0.01	%	21.1	1.56	6.25	----	----
EN67 PK: Field Tests								
pH	----	0.1	pH Unit	5.3	4.4	5.4	8.9	8.4
Electrical Conductivity (Non Compensated)	----	1	µS/cm	3460	615	3940	2040	787
Depth	----	0.01	m	3.66	2.49	2.64	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	25	----	<1	25	33
Nonpurgeable Organic Carbon	----	1	mg/L	----	3	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	----	----	----	<2	<2



Analytical Results

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

Client sample ID

EPA 7

Client sampling date / time

08-MAY-2014 13:15

Compound	CAS Number	LOR	Unit	EW1401400-006	----	----	----	----
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	----	10	mg/L	836	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.38	----	----	----	----
EN67 PK: Field Tests								
pH	----	0.1	pH Unit	8.5	----	----	----	----
Electrical Conductivity (Non Compensated)	----	1	µS/cm	1470	----	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	34	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	<2	----	----	----	----