

CERTIFICATE OF ANALYSIS

Page **Work Order** : EW2400595 : 1 of 5

Client : WINGECARRIBEE SHIRE COUNCIL Laboratory : Environmental Division NSW South Coast

Contact : Resource Contact : Aneta Prosaroski

Address Address : 1/19 Ralph Black Dr, North Wollongong 2500 NSW Australia : PO BOX 141

MOSSVALE NSW

AUSTRALIA

Telephone Telephone : 02 42253125

Project : RRC Quarterly **Date Samples Received** : 08-Feb-2024 14:45

: 00262511 Order number Date Analysis Commenced : 08-Feb-2024

Sampler

: Robert DaLio

Site

Quote number : EW23WINSHI0002

No. of samples received : 6 No. of samples analysed . 6



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

Issue Date

: 07-Mar-2024 11:28

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

C-O-C number

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.

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Ankit Joshi Senior Chemist - Inorganics Sydney Inorganics, Smithfield, NSW Laboratory - Wollongong, NSW Robert DaLio Sampler

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General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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 Contract 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
- ø = ALS is not NATA accredited for these tests.
- ~ = Indicates an estimated value.
- Analytical work for this work order will be conducted at ALS Sydney.
- As per QWI EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions Chloride, Alkalinity and Sulfate; and Major Cations Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- lonic Balance out of acceptable limits for sample 1 due to analytes not quantified in this report.
- pH performed by ALS Wollongong via in-house method EA005FD and EN67 PK.
- Sampling and sample data supplied by ALS Wollongong.
- Electrical conductivity performed by ALS Wollongong via in-house method EA010FD and EN67 PK.
- Sampling completed as per FWI-EN001 Groundwater Sampling.
- Sampling and groundwater depth measurements completed by ALS Wollongong via inhouse sampling method EN/67.11 Groundwater Sampling Via Method.
- Sampling completed as per FWI-EN002 Surface Water Sampling.
- Field tests completed on day of sampling/receipt.
- Sampling completed by ALS Wollongong in accordance with in-house sampling method EN/67.4 Lakes and Reservoirs
- Sample collection of Ground Waters by in-house EN67 where the "surface layer of the aquifer was sampled".
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.



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Analytical Results



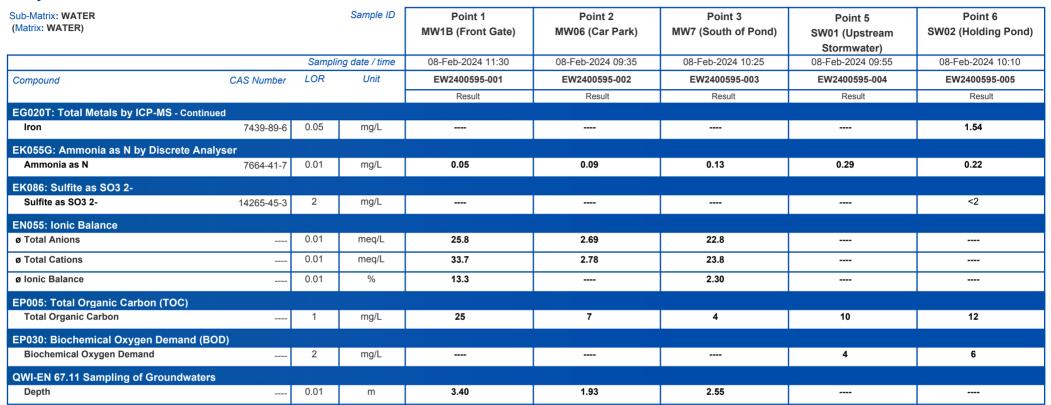


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Analytical Results



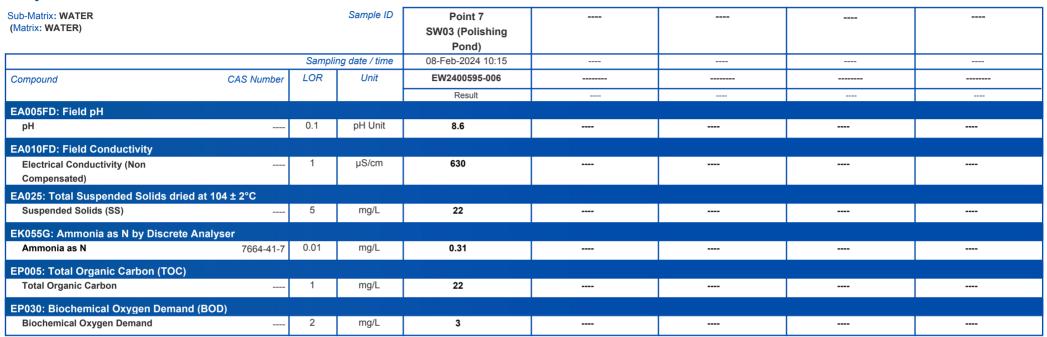


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Analytical Results



Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP005: Total Organic Carbon (TOC)

(WATER) EK055G: Ammonia as N by Discrete Analyser

(WATER) ED045G: Chloride by Discrete Analyser

(WATER) ED041G: Sulfate (Turbidimetric) as SO4 2- by DA

(WATER) ED037P: Alkalinity by PC Titrator

(WATER) ED093F: Dissolved Major Cations

(WATER) EA015: Total Dissolved Solids dried at 180 \pm 5 $^{\circ}\text{C}$

(WATER) EN055: Ionic Balance

(WATER) EP030: Biochemical Oxygen Demand (BOD)

(WATER) EA025: Total Suspended Solids dried at 104 ± 2°C

(WATER) EK086: Sulfite as SO3 2-

(WATER) EG020T: Total Metals by ICP-MS

