



## CERTIFICATE OF ANALYSIS

Work Order	: ES2434949	Page	: 1 of 4
Client	: Department of Climate Change, Energy, the Environment and Water	Laboratory	: Environmental Division Sydney
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: [REDACTED]	Address	: [REDACTED]
Telephone	: ----	Telephone	: [REDACTED]
Project	: Darling Baaka River Health Program	Date Samples Received	: 28-Oct-2024 10:25
Order number	: ----	Date Analysis Commenced	: 28-Oct-2024
C-O-C number	: ----	Issue Date	: 01-Nov-2024 15:50
Sampler	: ----		
Site	: ----		
Quote number	: ES24DEPENWAT0001		
No. of samples received	: 10		
No. of samples analysed	: 10		



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, unless the sampling was conducted by ALS. 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.

Signatories	Position	Accreditation Category
[REDACTED]	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

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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  
∅ = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- EK271A-CM: Samples for Ultra-Trace Reactive Phosphorus by FIA should be frozen upon sampling. If not, low-level results (below 0.01 mg/L) may bias low.

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### Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	S15	S21	S22	S23	S24
Sampling date / time				17-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00	16-Oct-2024 00:00	14-Oct-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2434949-001	ES2434949-002	ES2434949-003	ES2434949-004	ES2434949-005	
				Result	Result	Result	Result	Result	
<b>ED040F: Dissolved Major Anions</b>									
Sulfate as SO4 2-	14808-79-8	1	mg/L	21	24	20	20	19	
Sulfur as S	63705-05-5	1	mg/L	7	8	6	6	6	
Silicon as SiO2	14464-46-1	0.1	mg/L	8.0	10.4	11.3	7.2	4.4	
Silicon	7440-21-3	0.05	mg/L	3.74	4.86	5.27	3.38	2.07	
<b>EK255A: Ammonia</b>									
Ammonia as N	7664-41-7	0.005	mg/L	<0.005	0.007	<0.005	<0.005	0.755	
<b>EK257A: Nitrite</b>									
Nitrite as N	14797-65-0	0.002	mg/L	<0.002	0.004	0.003	<0.002	0.069	
<b>EK258A: Nitrate</b>									
Nitrate as N	14797-55-8	0.002	mg/L	0.028	0.043	0.228	0.049	0.070	
<b>EK259A: Nitrite and Nitrate (NOx)</b>									
Nitrite + Nitrate as N	----	0.002	mg/L	0.028	0.047	0.231	0.049	0.139	
<b>EK261A: Total Kjeldahl Nitrogen</b>									
Total Kjeldahl Nitrogen as N	----	0.01	mg/L	1.50	2.89	1.21	1.46	2.93	
<b>EK262A: Total Nitrogen</b>									
Dissolved Total Nitrogen as N	----	0.01	mg/L	0.95	0.85	1.10	0.96	2.65	
Total Nitrogen as N	----	0.01	mg/L	1.53	2.94	1.44	1.51	3.07	
<b>EK267A: Total Phosphorus (Persulfate Digestion)</b>									
Dissolved Total Phosphorus as P	----	0.005	mg/L	0.100	0.142	0.170	0.158	0.041	
Total Phosphorus as P	----	0.005	mg/L	0.332	0.814	0.371	0.400	0.221	
<b>EK271A: Reactive Phosphorus</b>									
Reactive Phosphorus as P	14265-44-2	0.001	mg/L	0.058	0.068	0.100	0.092	0.004	

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### Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	S25	S26	S27	S28	S32
Sampling date / time				14-Oct-2024 00:00	14-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	15-Oct-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2434949-006	ES2434949-007	ES2434949-008	ES2434949-009	ES2434949-010	
				Result	Result	Result	Result	Result	
<b>ED040F: Dissolved Major Anions</b>									
Sulfate as SO4 2-	14808-79-8	1	mg/L	14	18	20	18	21	
Sulfur as S	63705-05-5	1	mg/L	5	6	7	6	7	
Silicon as SiO2	14464-46-1	0.1	mg/L	3.3	6.0	4.3	4.9	11.9	
Silicon	7440-21-3	0.05	mg/L	1.56	2.81	1.99	2.30	5.56	
<b>EK255A: Ammonia</b>									
Ammonia as N	7664-41-7	0.005	mg/L	0.035	<0.005	<0.005	<0.005	<0.005	
<b>EK257A: Nitrite</b>									
Nitrite as N	14797-65-0	0.002	mg/L	0.006	<0.002	0.002	<0.002	0.002	
<b>EK258A: Nitrate</b>									
Nitrate as N	14797-55-8	0.002	mg/L	0.007	0.004	0.005	0.008	0.042	
<b>EK259A: Nitrite and Nitrate (NOx)</b>									
Nitrite + Nitrate as N	----	0.002	mg/L	0.013	0.004	0.007	0.008	0.044	
<b>EK261A: Total Kjeldahl Nitrogen</b>									
Total Kjeldahl Nitrogen as N	----	0.01	mg/L	2.59	2.78	4.06	2.31	1.42	
<b>EK262A: Total Nitrogen</b>									
Dissolved Total Nitrogen as N	----	0.01	mg/L	1.78	1.91	1.56	1.29	1.19	
Total Nitrogen as N	----	0.01	mg/L	2.60	2.78	4.07	2.32	1.46	
<b>EK267A: Total Phosphorus (Persulfate Digestion)</b>									
Dissolved Total Phosphorus as P	----	0.005	mg/L	0.057	0.065	0.088	0.047	0.185	
Total Phosphorus as P	----	0.005	mg/L	0.248	0.282	0.624	0.329	0.394	
<b>EK271A: Reactive Phosphorus</b>									
Reactive Phosphorus as P	14265-44-2	0.001	mg/L	0.004	0.003	0.033	0.015	0.087	