



## CERTIFICATE OF ANALYSIS

Work Order	: ES2410862	Page	: 1 of 6
Client	: Department of Climate Change, Energy, the Environment and Water	Laboratory	: Environmental Division Sydney
Contact Address	: [REDACTED]	Contact Address	: Customer Services ES [REDACTED]
Telephone	: [REDACTED]	Telephone	: [REDACTED]
Project	: Darling Baake River Health Program	Date Samples Received	: 03-Apr-2024 13:56
Order number	: ----	Date Analysis Commenced	: 06-Apr-2024
C-O-C number	: ----	Issue Date	: 10-Apr-2024 17:23
Sampler	: ----		
Site	: ----		
Quote number	: ES24DEPENWAT0001		
No. of samples received	: 20		
No. of samples analysed	: 20		



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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Project : Darling Baake River Health Program



### 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.

- 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.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	E1	E2	E3	E4	E5
Sampling date / time					25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2410862-001	ES2410862-002	ES2410862-003	ES2410862-004	ES2410862-005	
				Result	Result	Result	Result	Result	
ED040F: Dissolved Major Anions									
Silicon	7440-21-3	0.05	mg/L	3.84	3.84	3.65	3.59	3.84	
EK255A: Ammonia									
Ammonia as N	7664-41-7	0.005	mg/L	0.171	0.170	0.072	0.076	0.102	
EK257A: Nitrite									
Nitrite as N	14797-65-0	0.002	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	
EK258A: Nitrate									
Nitrate as N	14797-55-8	0.002	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	
EK259A: Nitrite and Nitrate (NOx)									
Nitrite + Nitrate as N	----	0.002	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	
EK261A: Total Kjeldahl Nitrogen									
Total Kjeldahl Nitrogen as N	----	0.01	mg/L	1.51	1.50	1.49	1.42	1.52	
EK262A: Total Nitrogen									
Dissolved Total Nitrogen as N	----	0.01	mg/L	0.91	0.94	0.87	0.90	0.96	
Total Nitrogen as N	----	0.01	mg/L	1.51	1.50	1.49	1.42	1.52	
EK267A: Total Phosphorus (Persulfate Digestion)									
Dissolved Total Phosphorus as P	----	0.005	mg/L	0.100	0.094	0.055	0.041	0.059	
Total Phosphorus as P	----	0.005	mg/L	0.234	0.231	0.181	0.162	0.185	
EK271A: Reactive Phosphorus									
Reactive Phosphorus as P	14265-44-2	0.001	mg/L	0.056	0.056	0.026	0.031	0.025	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	E6.5	E7	E8	E9	E11
Sampling date / time					28-Mar-2024 00:00	28-Mar-2024 00:00	28-Mar-2024 00:00	28-Mar-2024 00:00	28-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2410862-006	ES2410862-007	ES2410862-008	ES2410862-009	ES2410862-010	
				Result	Result	Result	Result	Result	
ED040F: Dissolved Major Anions									
Silicon	7440-21-3	0.05	mg/L	4.01	4.11	3.92	3.90	3.42	
EK255A: Ammonia									
Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.198	0.171	0.036	
EK257A: Nitrite									
Nitrite as N	14797-65-0	0.002	mg/L	<0.002	<0.002	0.002	<0.002	<0.002	
EK258A: Nitrate									
Nitrate as N	14797-55-8	0.002	mg/L	<0.002	<0.002	<0.002	0.003	<0.002	
EK259A: Nitrite and Nitrate (NOx)									
Nitrite + Nitrate as N	----	0.002	mg/L	<0.002	<0.002	0.003	0.003	<0.002	
EK261A: Total Kjeldahl Nitrogen									
Total Kjeldahl Nitrogen as N	----	0.01	mg/L	1.40	1.51	1.74	1.67	1.56	
EK262A: Total Nitrogen									
Dissolved Total Nitrogen as N	----	0.01	mg/L	0.84	0.84	1.02	0.97	0.91	
Total Nitrogen as N	----	0.01	mg/L	1.40	1.51	1.74	1.67	1.56	
EK267A: Total Phosphorus (Persulfate Digestion)									
Dissolved Total Phosphorus as P	----	0.005	mg/L	0.035	0.042	0.071	0.062	0.026	
Total Phosphorus as P	----	0.005	mg/L	0.283	0.267	0.157	0.232	0.181	
EK271A: Reactive Phosphorus									
Reactive Phosphorus as P	14265-44-2	0.001	mg/L	0.014	0.020	0.046	0.043	0.012	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	E12	E13	E14	E15	Weth-metals-SURF
Sampling date / time					28-Mar-2024 00:00	28-Mar-2024 00:00	28-Mar-2024 00:00	27-Mar-2024 00:00	27-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2410862-011	ES2410862-012	ES2410862-013	ES2410862-014	ES2410862-015	
				Result	Result	Result	Result	Result	
ED040F: Dissolved Major Anions									
Silicon	7440-21-3	0.05	mg/L	3.46	3.29	3.24	3.20	6.89	
EK255A: Ammonia									
Ammonia as N	7664-41-7	0.005	mg/L	0.104	0.112	0.168	0.267	0.107	
EK257A: Nitrite									
Nitrite as N	14797-65-0	0.002	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	
EK258A: Nitrate									
Nitrate as N	14797-55-8	0.002	mg/L	<0.002	<0.002	<0.002	<0.002	0.363	
EK259A: Nitrite and Nitrate (NOx)									
Nitrite + Nitrate as N	----	0.002	mg/L	<0.002	<0.002	<0.002	<0.002	0.363	
EK261A: Total Kjeldahl Nitrogen									
Total Kjeldahl Nitrogen as N	----	0.01	mg/L	1.66	1.99	2.46	2.48	0.91	
EK262A: Total Nitrogen									
Dissolved Total Nitrogen as N	----	0.01	mg/L	0.97	1.01	1.10	1.22	1.01	
Total Nitrogen as N	----	0.01	mg/L	1.66	1.99	2.46	2.48	1.27	
EK267A: Total Phosphorus (Persulfate Digestion)									
Dissolved Total Phosphorus as P	----	0.005	mg/L	0.034	0.019	0.034	0.042	0.205	
Total Phosphorus as P	----	0.005	mg/L	0.165	0.097	0.276	0.247	0.409	
EK271A: Reactive Phosphorus									
Reactive Phosphorus as P	14265-44-2	0.001	mg/L	0.018	0.015	0.011	0.020	0.183	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Weth-metals-BW	B1	B2	B3	B4
Sampling date / time					27-Mar-2024 00:00	27-Mar-2024 00:00	25-Mar-2024 00:00	28-Mar-2024 00:00	28-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2410862-016	ES2410862-017	ES2410862-018	ES2410862-019	ES2410862-020	
				Result	Result	Result	Result	Result	
ED040F: Dissolved Major Anions									
Silicon	7440-21-3	0.05	mg/L	5.75	3.86	3.93	5.97	4.09	
EK255A: Ammonia									
Ammonia as N	7664-41-7	0.005	mg/L	0.114	0.094	0.195	0.461	<0.005	
EK257A: Nitrite									
Nitrite as N	14797-85-0	0.002	mg/L	0.022	<0.002	<0.002	<0.002	0.002	
EK258A: Nitrate									
Nitrate as N	14797-55-8	0.002	mg/L	0.235	<0.002	<0.002	0.005	0.002	
EK259A: Nitrite and Nitrate (NOx)									
Nitrite + Nitrate as N	----	0.002	mg/L	0.257	<0.002	<0.002	0.005	0.004	
EK261A: Total Kjeldahl Nitrogen									
Total Kjeldahl Nitrogen as N	----	0.01	mg/L	1.22	1.48	1.54	2.82	1.39	
EK262A: Total Nitrogen									
Dissolved Total Nitrogen as N	----	0.01	mg/L	0.95	0.84	0.95	1.70	0.81	
Total Nitrogen as N	----	0.01	mg/L	1.48	1.48	1.54	2.83	1.39	
EK267A: Total Phosphorus (Persulfate Digestion)									
Dissolved Total Phosphorus as P	----	0.005	mg/L	0.179	0.082	0.091	0.136	0.044	
Total Phosphorus as P	----	0.005	mg/L	0.349	0.255	0.254	0.286	0.264	
EK271A: Reactive Phosphorus									
Reactive Phosphorus as P	14265-44-2	0.001	mg/L	0.164	0.061	0.074	0.068	0.024	