



CERTIFICATE OF ANALYSIS

Work Order	: ES2318510	Page	: 1 of 10
Client	: DEPARTMENT OF PLANNING AND ENVIRONMENT (NSW-DPE)	Laboratory	: Environmental Division Sydney
Contact	: OEH	Contact	: Customer Services ES
Address	: [REDACTED] Lidcombe 2141	Address	: [REDACTED]
Telephone	: ----	Telephone	: [REDACTED]
Project	: 20230179	Date Samples Received	: 02-Jun-2023 15:30
Order number	: 4500806025	Date Analysis Commenced	: 02-Jun-2023
C-O-C number	: ----	Issue Date	: 06-Jun-2023 18:28
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 39		
No. of samples analysed	: 39		



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



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 Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	234404	234405	234406	234407	234408
Sampling date / time				23-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2318510-001	ES2318510-002	ES2318510-003	ES2318510-004	ES2318510-005	
				Result	Result	Result	Result	Result	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	0.02	<0.01	<0.01	0.03	0.07	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	---	0.01	mg/L	<0.01	0.01	0.01	0.02	0.07	
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.05	0.06	0.05	0.05	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	234409	234410	234411	234412	234413
Sampling date / time				23-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2318510-006	ES2318510-007	ES2318510-008	ES2318510-009	ES2318510-010	
				Result	Result	Result	Result	Result	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	0.07	0.10	0.03	----	----	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L	0.05	0.04	0.04	0.02	<0.01	
EK061F: Filtered Total Kjeldahl Nitrogen as N (TKN)									
Dissolved TKN as N	----	0.1	mg/L	----	----	----	0.6	0.6	
EK062F: Filtered Total Nitrogen as N									
^ Filtered Total Nitrogen as N	----	0.1	mg/L	----	----	----	0.6	0.6	
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L	----	----	----	0.02	0.08	
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.02	0.22	0.08	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	234414	234415	234416	234417	234418
Sampling date / time			23-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2318510-011	ES2318510-012	ES2318510-013	ES2318510-014	ES2318510-015
				Result	Result	Result	Result	Result
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.05	0.02	0.04	0.04	0.01
EK061F: Filtered Total Kjeldahl Nitrogen as N (TKN)								
Dissolved TKN as N	----	0.1	mg/L	0.7	0.7	0.7	0.8	0.5
EK062F: Filtered Total Nitrogen as N								
^ Filtered Total Nitrogen as N	----	0.1	mg/L	0.8	0.7	0.7	0.8	0.5
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser								
Filtered Total Phosphorus as P	----	0.01	mg/L	0.10	0.07	0.07	0.08	0.22



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	234419	234420	234421	234422	234423
Sampling date / time			23-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2318510-016	ES2318510-017	ES2318510-018	ES2318510-019	ES2318510-020
				Result	Result	Result	Result	Result
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.03	<0.01	<0.01	0.01	0.02
EK061F: Filtered Total Kjeldahl Nitrogen as N (TKN)								
Dissolved TKN as N	----	0.1	mg/L	0.6	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	1.0	0.9	1.0	1.0
EK062F: Filtered Total Nitrogen as N								
^ Filtered Total Nitrogen as N	----	0.1	mg/L	0.6	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	1.0	0.9	1.0	1.0
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser								
Filtered Total Phosphorus as P	----	0.01	mg/L	0.14	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	0.08	0.15	0.18	0.17



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	234424	234425	234426	234427	234428
Sampling date / time				23-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2318510-021	ES2318510-022	ES2318510-023	ES2318510-024	ES2318510-025	
				Result	Result	Result	Result	Result	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	----	----	----	----	<0.01	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.05	<0.01	0.03	0.01	
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.0	1.1	0.7	1.0	----	
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L	1.0	1.2	0.7	1.0	----	
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L	0.14	0.14	0.32	0.20	----	
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	----	----	----	0.04	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	234429	234430	234431	234433	234434
Sampling date / time				23-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2318510-026	ES2318510-027	ES2318510-028	ES2318510-029	ES2318510-030	
				Result	Result	Result	Result	Result	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.12	0.10	0.04	----	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.06	0.08	0.04	0.02	
EK061F: Filtered Total Kjeldahl Nitrogen as N (TKN)									
Dissolved TKN as N	----	0.1	mg/L	----	----	----	----	0.6	
EK062F: Filtered Total Nitrogen as N									
^ Filtered Total Nitrogen as N	----	0.1	mg/L	----	----	----	----	0.6	
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L	----	----	----	----	0.07	
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.06	0.02	0.05	0.06	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	234435	234436	234437	234439	234440
Sampling date / time			23-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2318510-031	ES2318510-032	ES2318510-033	ES2318510-034	ES2318510-035
				Result	Result	Result	Result	Result
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.07	0.04	0.05	0.58	0.02
EK061F: Filtered Total Kjeldahl Nitrogen as N (TKN)								
Dissolved TKN as N	----	0.1	mg/L	0.8	0.8	0.8	0.7	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	----	----	----	1.0
EK062F: Filtered Total Nitrogen as N								
^ Filtered Total Nitrogen as N	----	0.1	mg/L	0.9	0.8	0.8	1.3	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	----	----	----	1.0
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser								
Filtered Total Phosphorus as P	----	0.01	mg/L	0.08	0.06	0.10	0.10	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	----	----	----	0.17



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	234441	234442	234443	234445	----
Sampling date / time			23-May-2023 00:00	----				
Compound	CAS Number	LOR	Unit	ES2318510-036	ES2318510-037	ES2318510-038	ES2318510-039	-----
				Result	Result	Result	Result	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.04	0.04	0.03	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.2	1.0	1.1	1.0	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	1.2	1.0	1.1	1.0	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.18	0.14	0.17	0.21	----