CERTIFICATE OF ANALYSIS

Work Order	: **ES2320462**	Page	: 1 of 7
Client	: **DEPARTMENT OF PLANNING AND ENVIRONMENT (NSW-DPE)**	Laboratory	: Environmental Division Sydney
Contact	: OEH	Contact	: Customer Services ES
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	[redacted]
Project	: 20230213	Date Samples Received	: 20-Jun-2023 16:20
Order number	: 4500806025	Date Analysis Commenced	: 21-Jun-2023
C-O-C number	: ----	Issue Date	: 27-Jun-2023 17:27
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 21		
No. of samples analysed	: 21		

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

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.

- EK061G: LOR raised for TKN on sample nos: 6 and 7 due to insufficient sample.
- EK067G: LOR raised for TP on sample no:6 due to insufficient sample.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	235285	235286	235287	235288	235289
				Sampling date / time	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2320462-001	ES2320462-002	ES2320462-003	ES2320462-004	ES2320462-005
					Result	Result	Result	Result	Result
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.38**	**0.10**	**0.12**	<0.01	**0.02**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**1.2**	**1.6**	**2.2**	**0.9**	**3.9**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**1.6**	**1.7**	**2.3**	**0.9**	**3.9**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.28**	**0.28**	**0.33**	**0.30**	**0.46**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	235290	235291	235292	235293	235294
				Sampling date / time	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2320462-006	ES2320462-007	ES2320462-008	ES2320462-009	ES2320462-010
					Result	Result	Result	Result	Result
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**----**	**----**	**0.10**	**0.10**	**0.06**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	**0.08**	**0.10**	**0.15**	**0.17**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<1.0	<1.0	**----**	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<1.0	<1.0	**----**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.10	**0.41**	**----**	**----**	**----**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**----**	**----**	**0.14**	**0.05**	**0.06**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	235295	235296	235297	235298	235299
				Sampling date / time	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2320462-011	ES2320462-012	ES2320462-013	ES2320462-014	ES2320462-015
					Result	Result	Result	Result	Result
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.04**	**0.01**	<0.01	**0.37**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.02**	**0.02**	**0.02**	**0.10**	**0.10**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**----**	**----**	**----**	**----**	**0.4**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**----**	**----**	**----**	**----**	**0.5**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**----**	**----**	**----**	**----**	**0.14**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.14**	<0.01	**0.07**	**0.21**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	235300	235301	235302	235303	235304
				Sampling date / time	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00	14-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2320462-016	ES2320462-017	ES2320462-018	ES2320462-019	ES2320462-020
					Result	Result	Result	Result	Result
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.11**	**0.08**	**0.01**	**0.02**	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.3**	**0.3**	**0.3**	**0.6**	**0.4**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.4**	**0.4**	**0.3**	**0.6**	**0.4**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.15**	**0.13**	**0.26**	**0.06**	**0.18**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	235305	----	----	----	----
				Sampling date / time	14-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2320462-021	--------	--------	--------	--------
					Result	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.07**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.5**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.6**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.25**	----	----	----	----