QUALITY CONTROL REPORT

Work Order	: **EN2503706**	Page	: 1 of 5
Client	: **OBERON COUNCIL**	Laboratory	: Environmental Division Newcastle
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Project	: end February 25 river samples	Date Samples Received	: 04-Mar-2025
Order number	: PO 006809	Date Analysis Commenced	: 04-Mar-2025
C-O-C number	: ----	Issue Date	: 18-Mar-2025
Sampler	: Zane Dusselaar		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 4		
No. of samples analysed	: 4		

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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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*
Gregory Towers	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Isaac Hampson	Laboratory Technician	Newcastle - Microbiology, Mayfield West, 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.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
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
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 6429636)									
EN2504165-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.26	7.22	0.6	0% - 20%
EN2503706-002	Up Stream EMP3	EA005-P: pH Value	----	0.01	pH Unit	6.80	6.89	1.3	0% - 20%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 6429185)									
EN2504010-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EN2503575-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EN2504131-003	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	19	18	0.0	No Limit
EN2503807-002	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	28	30	7.1	No Limit
EK055A: Ammonia as N (QC Lot: 6431482)									
EN2503711-002	Anonymous	EK055A: Ammonia as N	7664-41-7	0.05	mg/L	0.86	0.85	0.0	0% - 50%
EN2503575-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.05	mg/L	29.1	29.8	2.3	0% - 20%
EK059A: Nitrite and Nitrate as N (NOx) (QC Lot: 6431481)									
EN2503711-002	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.05	mg/L	0.87	0.88	1.8	0% - 50%
EN2503575-001	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.05	mg/L	43.4	44.4	2.5	0% - 20%
EK062A: Total Nitrogen as N (QC Lot: 6438907)									
EN2503575-001	Anonymous	EK062A: Total Nitrogen as N	----	0.1	mg/L	80.6	72.5	10.5	0% - 20%
EN2503706-003	Down stream EMP4	EK062A: Total Nitrogen as N	----	0.1	mg/L	1.2	1.2	0.0	0% - 50%
EK067A: Total Phosphorus as P (QC Lot: 6434945)									
EN2503575-001	Anonymous	EK067A: Total Phosphorus as P	----	0.05	mg/L	0.76	0.71	6.1	0% - 50%
EN2503706-003	Down stream EMP4	EK067A: Total Phosphorus as P	----	0.05	mg/L	0.35	0.35	0.0	No Limit
EP008.WN: Chlorophyll a and Pheophytin a (QC Lot: 6430042)									
EN2503706-001	Ex pond discharge EMP1	EP008.WN: Chlorophyll a	----	1	µg/L	181	179	0.8	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP030.WN: Biochemical Oxygen Demand (BOD) (QC Lot: 6432178)									
EN2503706-001	Ex pond discharge EMP1	EP030.WN: Biochemical Oxygen Demand	----	2	mg/L	20	21	0.0	0% - 50%
EN2504273-002	Anonymous	EP030.WN: Biochemical Oxygen Demand	----	2	mg/L	3	3	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 6429636)								
EA005-P: pH Value	----	----	pH Unit	----	7.6 pH Unit	100	98.5	102
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 6429185)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	95.9	85.0	110
				<5	1000 mg/L	92.6	85.0	110
				<5	828 mg/L	99.3	85.0	115
EK055A: Ammonia as N (QCLot: 6431482)								
EK055A: Ammonia as N	7664-41-7	0.05	mg/L	<0.05	2 mg/L	95.6	90.0	110
EK059A: Nitrite and Nitrate as N (NOx) (QCLot: 6431481)								
EK059A: Nitrite + Nitrate as N	----	0.05	mg/L	<0.05	2 mg/L	100	90.0	110
EK062A: Total Nitrogen as N (QCLot: 6438907)								
EK062A: Total Nitrogen as N	----	0.1	mg/L	<0.1	5 mg/L	100	90.0	110
EK067A: Total Phosphorus as P (QCLot: 6434945)								
EK067A: Total Phosphorus as P	----	0.05	mg/L	<0.05	5 mg/L	90.7	90.0	110
EP008.WN: Chlorophyll a and Pheophytin a (QCLot: 6430042)								
EP008.WN: Chlorophyll a	----	1	µg/L	<1.0	20 µg/L	99.0	70.0	130
EP021: Total Oil and Grease (QCLot: 6431683)								
EP021-S: Total Oil and Grease	----	2	mg/L	<2	193.2 mg/L	93.0	70.0	130
EP030.WN: Biochemical Oxygen Demand (BOD) (QCLot: 6432178)								
EP030.WN: Biochemical Oxygen Demand	----	2	mg/L	<2	200 mg/L	90.5	80.0	120

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK055A: Ammonia as N (QCLot: 6431482)							
EN2503575-002	Anonymous	EK055A: Ammonia as N	7664-41-7	2 mg/L	# Not Determined	80.0	120
EK059A: Nitrite and Nitrate as N (NOx) (QCLot: 6431481)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EK059A: Nitrite and Nitrate as N (NOx) (QCLot: 6431481) - continued							
EN2503575-002	Anonymous	EK059A: Nitrite + Nitrate as N	----	2 mg/L	# Not Determined	80.0	120
EK062A: Total Nitrogen as N (QCLot: 6438907)							
EN2503575-002	Anonymous	EK062A: Total Nitrogen as N	----	20 mg/L	# Not Determined	80.0	120
EK067A: Total Phosphorus as P (QCLot: 6434945)							
EN2503575-003	Anonymous	EK067A: Total Phosphorus as P	----	5 mg/L	93.1	80.0	120