



November 15th, 2023

Alberta Environment and Parks  
Monitoring Branch  
11<sup>th</sup> Floor Oxbridge Place  
9820 106 ST  
Edmonton, AB T5K 2J6

Dear Sir/Madam:

**Re:** Industrial Runoff Report for October 2023 Approval 10348-03-01

**As Per: 2.3.1 (ii)** for industrial wastewater, industrial runoff, groundwater and domestic wastewater:

(A) The Standard Methods for the Examination of Water and Wastewater, published jointly by the American Public Health Association, American Water Works Association, and the Water Environment Federation, 1998, as amended.

**As Per: 2.3.1 (iii)** for whole effluent toxicity tests:

- (A) The Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, Environment Canada, Environment Protection Series 1/RM/13, December 2000, as amended,
- (B) The Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia Magna, Environment Canada, Environment Protection Series 1/RM/13, December 2000, as amended,
- (C) The Biological Test Method: Growth Inhibition Test Using the Freshwater Alga *Selenastrum capricornutum*, Environment Canada, Environmental Protection Series, November 1992, as amended,
- (D) The Biological Test Method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*, Environment Canada, Environmental Protection Series 1/RM/21, February 1992, as amended,
- (E) The Biological Test Method: Test of Larval Growth and Survival Using Fathead Minnows, Environment Canada, Environmental Protection Series 1/RM/22, February 1992, as amended, and
- (F) The Biological Test Method: Toxicity Test Using Luminescent Bacteria (*Photobacterium phosphoreum*), Environment Canada, Environmental Protection Series, 1/RM/24, November 1992, as amended;

**Clean Harbors Canada, Inc. P.O. Box 390, Ryley, AB T0B 4A0  
Telephone (780) 663-3828 Fax (780) 663-3539**

Enclosed is the Industrial Runoff Report as required by Sections 4.3.17 and 4.3.18 of the above approval. We discharged only from pond B and October's discharge event occurred over 4 days, starting October 19th and ending October 22nd.

Samples from pond B were submitted to ALS Labs on October 5th. The chemical analytical results for pond B were received from ALS Labs on October 6<sup>th</sup> and reviewed by Lab Technician and the General Manager and confirmed that the sample failed for COD concentration, being 4 mg/L too high. All other chemical parameters for Pond B passed the requirements in Table 4.3-B of our approval. We resampled Pond B on October 10<sup>th</sup> and submitted the sample for COD analysis, bioassay and for oil & other substances (sheen). We received the results for the COD concentration on October 13<sup>th</sup> which were reviewed by the Lab Manager and GM and confirmed the COD had passed, at 47 mg/L. We received the bioassay and oil or other substances results on October 18<sup>th</sup>. These were reviewed by the Lab Technician and Facility Operations Manager and everything had passed. A summary of the results is attached. We began discharge on October 19<sup>th</sup>.

October's total discharge volume was 10,099 m3 during this pumping event. We did not have any mechanical issues with the pump during this event.

There were no issues with pollution abatement or monitoring equipment.

Yours truly,  
**Clean Harbors Canada, Inc.**



Stan Yuha  
Facility Manager

CLEAN HARBORS CANADA, LTD.						
SURFACE WATER DETENTION POND B						
DATE		PUMPING TO DISCHARGE POND B		FLOW (m3)		OIL OR OTHER SUBSTANCES
1-Oct-23		No		-		No
2-Oct-23		No		-		No
3-Oct-23		No		-		No
4-Oct-23		No		-		No
5-Oct-23		No		-		No
6-Oct-23		No		-		No
7-Oct-23		No		-		No
8-Oct-23		No		-		No
9-Oct-23		No		-		No
10-Oct-23		No		-		No
11-Oct-23		No		-		No
12-Oct-23		No		-		No
13-Oct-23		No		-		No
14-Oct-23		No		-		No
15-Oct-23		No		-		No
16-Oct-23		No		-		No
17-Oct-23		No		-		No
18-Oct-23		No		-		No
19-Oct-23		Yes		1574		No
20-Oct-23		Yes		4204		No
21-Oct-23		Yes		3884		No
22-Oct-23		Yes		437		No
23-Oct-23		No		-		No
24-Oct-23		No		-		No
25-Oct-23		No		-		No
26-Oct-23		No		-		No
27-Oct-23		No		-		No
28-Oct-23		No		-		No
29-Oct-23		No		-		No
30-Oct-23		No		-		No
31-Oct-23		No		-		No
<b>Total Volume for Pond B October 2023</b>				<b>10099</b>		
Chemical Analysis	Limit	Pond B Oct. 5th Results		Pond B Oct. 10th Results		
pH	6.0-9.5	8.1	unit			
Chemical Oxygen Demand	50	54	mg/L	47	mg/L	
Total Dissolved Solids	2500	630	mg/L			
Total Suspended Solids	25	22	mg/L			
Ammonia, Total Dissolved (as N)	5	2.62	mg/L			
Chloride	250	13.3	mg/L			
Sodium	200	148	mg/L			
Sulfate	500	231	mg/L			
Oil or other Substances	Negative	not tested		Negative		
Rainbow Trout	pass	not tested		pass		
Daphnia magna	pass	not tested		pass		



## CERTIFICATE OF ANALYSIS

<b>Work Order</b>	: <b>EO2309082</b>	<b>Page</b>	: 1 of 2
<b>Amendment</b>	: <b>1</b>		
<b>Client</b>	: <b>Clean Harbors Environmental Services, Inc.</b>	<b>Laboratory</b>	: ALS Environmental - Edmonton
<b>Contact</b>	: Todd Webb	<b>Account Manager</b>	: Megha Walia
<b>Address</b>	: PO Box 390, 50114 Range Road 173 Ryley AB Canada T0B4A0	<b>Address</b>	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
<b>Telephone</b>	: 780 663 2513	<b>Telephone</b>	: +1 780 413 5227
<b>Project</b>	: Pond B Oct 5,2023	<b>Date Samples Received</b>	: 05-Oct-2023 14:29
<b>PO</b>	: 0000236720	<b>Date Analysis</b>	: 05-Oct-2023
		<b>Commenced</b>	
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 12-Oct-2023 12:40
<b>Sampler</b>	: TW		
<b>Site</b>	: Table 4.3B Chemistry		
<b>Quote number</b>	: EO22-CHES100-008		
<b>No. of samples received</b>	: 1		
<b>No. of samples analysed</b>	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Daniel Nguyen	Lab Assistant	Metals, Edmonton, Alberta
Leah Yee	Lab Assistant	Inorganics, Edmonton, Alberta
Michelle Schroder	Laboratory Analyst	Inorganics, Edmonton, Alberta
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta
Saron Gebremariam	Lab Assistant	Inorganics, Edmonton, Alberta
Shruti Mudliar	Lab Analyst	Inorganics, Edmonton, Alberta



## General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

**Key :** CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Measurement Uncertainty: The reported uncertainties in this report are expanded uncertainties calculated using a coverage factor of 2, which gives a level of confidence of approximately 95%.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Unit	Description
mg/L	milligrams per litre
pH units	pH units

>: greater than.

<: less than.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

## Analytical Results

EO2309082-001

Sub-Matrix: Water

(Matrix: Water)

Client sample ID: Pond B

Client sampling date / time: 05-Oct-2023 10:00

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QCLot
<b>Physical Tests</b>								
pH	----	8.10	0.10	pH units	E108/EO	06-Oct-2023	06-Oct-2023	1173025
Solids, total dissolved [TDS]	----	630	20	mg/L	E162/EO	-	06-Oct-2023	1172279
Solids, total suspended [TSS]	----	22.0	3.0	mg/L	E160/EO	-	06-Oct-2023	1172267
<b>Anions and Nutrients</b>								
Ammonia, total (as N)	7664-41-7	2.62	0.100	mg/L	E298/EO	05-Oct-2023	05-Oct-2023	1171000
Chloride	16887-00-6	13.3	0.50	mg/L	E235.Cl/EO	05-Oct-2023	05-Oct-2023	1171075
Sulfate (as SO4)	14808-79-8	231	0.30	mg/L	E235.SO4/EO	05-Oct-2023	05-Oct-2023	1171071
<b>Total Metals</b>								
Sodium, total	7440-23-5	148	0.050	mg/L	E420/EO	06-Oct-2023	06-Oct-2023	1172199
<b>Aggregate Organics</b>								
Chemical oxygen demand [COD]	----	54	10	mg/L	E559-L/EO	-	05-Oct-2023	1171401

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



## QUALITY CONTROL INTERPRETIVE REPORT

<p><b>Work Order</b> : <b>EO2309082</b></p> <p><b>Amendment</b> : <b>1</b></p> <p><b>Client</b> : <b>Clean Harbors Environmental Services, Inc.</b></p> <p><b>Contact</b> : Todd Webb</p> <p><b>Address</b> : PO Box 390, 50114 Range Road 173 Ryley AB Canada T0B4A0</p> <p><b>Telephone</b> : 780 663 2513</p> <p><b>Project</b> : Pond B Oct 5,2023</p> <p><b>PO</b> : 0000236720</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : TW</p> <p><b>Site</b> : Table 4.3B Chemistry</p> <p><b>Quote number</b> : EO22-CHES100-008</p> <p><b>No. of samples received</b> : 1</p> <p><b>No. of samples analysed</b> : 1</p>	<p><b>Page</b> : 1 of 7</p> <p><b>Laboratory</b> : ALS Environmental - Edmonton</p> <p><b>Account Manager</b> : Megha Walia</p> <p><b>Address</b> : 9450 - 17 Avenue NW Edmonton, Alberta Canada T6N 1M9</p> <p><b>Telephone</b> : +1 780 413 5227</p> <p><b>Date Samples Received</b> : 05-Oct-2023 14:29</p> <p><b>Issue Date</b> : 12-Oct-2023 12:37</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

**Key**

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

### ***Workorder Comments***

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

### ***Summary of Outliers***

#### ***Outliers : Quality Control Samples***

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

#### ***Outliers: Reference Material (RM) Samples***

- No Reference Material (RM) Sample outliers occur.

### ***Outliers : Analysis Holding Time Compliance (Breaches)***

- Analysis Holding Time Outliers exist - please see following pages for full details.

### ***Outliers : Frequency of Quality Control Samples***

- No Quality Control Sample Frequency Outliers occur.



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: \* = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
Amber glass total (sulfuric acid) Pond B	E559-L	05-Oct-2023	----	----	----		05-Oct-2023	28 days	0 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) Pond B	E298	05-Oct-2023	05-Oct-2023	28 days	0 days	✓	05-Oct-2023	28 days	0 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE Pond B	E235.Cl	05-Oct-2023	05-Oct-2023	28 days	0 days	✓	05-Oct-2023	28 days	0 days	✓
<b>Anions and Nutrients : Sulfate in Water by IC</b>										
HDPE Pond B	E235.SO4	05-Oct-2023	05-Oct-2023	28 days	0 days	✓	05-Oct-2023	28 days	0 days	✓
<b>Physical Tests : pH by Meter</b>										
HDPE Pond B	E108	05-Oct-2023	06-Oct-2023	0.25 hrs	27 hrs	* EHTR-FM	06-Oct-2023	0.25 hrs	28 hrs	* EHTR-FM
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE Pond B	E162	05-Oct-2023	----	----	----		06-Oct-2023	7 days	1 days	✓
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE Pond B	E160	05-Oct-2023	----	----	----		06-Oct-2023	7 days	1 days	✓





Matrix: **Water** Evaluation: \* = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>										
HDPE dissolved (nitric acid) Pond B	E420	05-Oct-2023	06-Oct-2023	7 hrs	24 hrs	* EHTL	06-Oct-2023	7 hrs	24 hrs	* EHTL

**Legend & Qualifier Definitions**

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended  
 EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.  
 Rec. HT: ALS recommended hold time (see units).



## Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Ammonia by Fluorescence	E298	1171000	1	20	5.0	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1171401	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1171075	1	17	5.8	5.0	✔
pH by Meter	E108	1173025	1	1	100.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1171071	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1172279	1	12	8.3	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1172199	1	1	100.0	5.0	✔
TSS by Gravimetry	E160	1172267	1	1	100.0	5.0	✔
<b>Laboratory Control Samples (LCS)</b>							
Ammonia by Fluorescence	E298	1171000	1	20	5.0	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1171401	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1171075	1	17	5.8	5.0	✔
pH by Meter	E108	1173025	1	1	100.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1171071	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1172279	1	12	8.3	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1172199	1	1	100.0	5.0	✔
TSS by Gravimetry	E160	1172267	1	1	100.0	5.0	✔
<b>Method Blanks (MB)</b>							
Ammonia by Fluorescence	E298	1171000	1	20	5.0	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1171401	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1171075	1	17	5.8	5.0	✔
Sulfate in Water by IC	E235.SO4	1171071	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1172279	1	12	8.3	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1172199	1	1	100.0	5.0	✔
TSS by Gravimetry	E160	1172267	1	1	100.0	5.0	✔
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	1171000	1	20	5.0	5.0	✔
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1171401	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1171075	1	17	5.8	5.0	✔
Sulfate in Water by IC	E235.SO4	1171071	1	17	5.8	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1172199	1	1	100.0	5.0	✔



## Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter	E108 ALS Environmental - Edmonton	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 ALS Environmental - Edmonton	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Edmonton	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl ALS Environmental - Edmonton	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Edmonton	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Ammonia by Fluorescence	E298 ALS Environmental - Edmonton	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Edmonton	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L ALS Environmental - Edmonton	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Edmonton	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.



## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: EO2309082</b>	<b>Page</b>	: 1 of 6
<b>Amendment</b>	<b>: 1</b>		
<b>Client</b>	: Clean Harbors Environmental Services, Inc.	<b>Laboratory</b>	: ALS Environmental - Edmonton
<b>Contact</b>	: Todd Webb	<b>Account Manager</b>	: Megha Walia
<b>Address</b>	: PO Box 390, 50114 Range Road 173 Ryley AB Canada T0B4A0	<b>Address</b>	: 9450 - 17 Avenue NW Edmonton, Alberta Canada T6N 1M9
<b>Telephone</b>	:	<b>Telephone</b>	: +1 780 413 5227
<b>Project</b>	: Pond B Oct 5,2023	<b>Date Samples Received</b>	: 05-Oct-2023 14:29
<b>PO</b>	: 0000236720	<b>Date Analysis Commenced</b>	: 05-Oct-2023
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 12-Oct-2023 12:40
<b>Sampler</b>	: TW                      780 663 2513		
<b>Site</b>	: Table 4.3B Chemistry		
<b>Quote number</b>	: EO22-CHES100-008		
<b>No. of samples received</b>	: 1		
<b>No. of samples analysed</b>	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Daniel Nguyen	Lab Assistant	Edmonton Metals, Edmonton, Alberta
Leah Yee	Lab Assistant	Edmonton Inorganics, Edmonton, Alberta
Michelle Schroder	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Ping Yeung	Team Leader - Inorganics	Edmonton Inorganics, Edmonton, Alberta
Saron Gebremariam	Lab Assistant	Edmonton Inorganics, Edmonton, Alberta
Shruti Mudliar	Lab Analyst	Edmonton Inorganics, Edmonton, Alberta



## General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

### Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

# = Indicates a QC result that did not meet the ALS DQO.

## Workorder Comments

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Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

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### Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 1172267)</b>											
EO2309082-001	Pond B	Solids, total suspended [TSS]	----	E160	3.0	mg/L	22.0	20.2	1.8	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 1172279)</b>											
EO2308941-003	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	550	554	0.724%	20%	----
<b>Physical Tests (QC Lot: 1173025)</b>											
EO2309082-001	Pond B	pH	----	E108	0.10	pH units	8.10	8.16	0.738%	3%	----
<b>Anions and Nutrients (QC Lot: 1171000)</b>											
FC2302826-007	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0250	mg/L	0.736	0.741	0.609%	20%	----
<b>Anions and Nutrients (QC Lot: 1171071)</b>											
EO2309077-028	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1171075)</b>											
EO2309077-028	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1172199)</b>											
EO2309082-001	Pond B	Sodium, total	7440-23-5	E420	0.050	mg/L	148	147	0.445%	20%	----
<b>Aggregate Organics (QC Lot: 1171401)</b>											
EO2308966-001	Anonymous	Chemical oxygen demand [COD]	----	E559-L	10	mg/L	23	27	3	Diff <2x LOR	----



## Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 1172267)</b>						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Physical Tests (QCLot: 1172279)</b>						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Anions and Nutrients (QCLot: 1171000)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 1171071)</b>						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Anions and Nutrients (QCLot: 1171075)</b>						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Total Metals (QCLot: 1172199)</b>						
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
<b>Aggregate Organics (QCLot: 1171401)</b>						
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	----





## Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Physical Tests (QCLot: 1172267)</b>									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	102	85.0	115	----
<b>Physical Tests (QCLot: 1172279)</b>									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.8	85.0	115	----
<b>Physical Tests (QCLot: 1173025)</b>									
pH	----	E108	----	pH units	6 pH units	99.5	97.0	103	----
<b>Anions and Nutrients (QCLot: 1171000)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.4	85.0	115	----
<b>Anions and Nutrients (QCLot: 1171071)</b>									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
<b>Anions and Nutrients (QCLot: 1171075)</b>									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.1	90.0	110	----
<b>Total Metals (QCLot: 1172199)</b>									
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	95.0	80.0	120	----
<b>Aggregate Organics (QCLot: 1171401)</b>									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	108	85.0	115	----



## Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level  $\geq$  1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 1171000)</b>										
FC2302826-007	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
<b>Anions and Nutrients (QCLot: 1171071)</b>										
EO2309077-028	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	95.3 mg/L	100 mg/L	95.3	75.0	125	----
<b>Anions and Nutrients (QCLot: 1171075)</b>										
EO2309077-028	Anonymous	Chloride	16887-00-6	E235.Cl	94.0 mg/L	100 mg/L	94.0	75.0	125	----
<b>Total Metals (QCLot: 1172199)</b>										
EO2309082-001	Pond B	Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
<b>Aggregate Organics (QCLot: 1171401)</b>										
EO2308967-001	Anonymous	Chemical oxygen demand [COD]	----	E559-L	102 mg/L	100 mg/L	102	75.0	125	----



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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 22 - Page of

Environmental Division  
Edmonton  
Work Order Reference  
EO2309082



Telephone: +1 780 413 5227

Reports / Recipients

Select Report Format:  PDF  EXCEL  EDD (DIGITAL)  
Merge QC/QCI Reports with COA  YES  NO  N/A  
 Compare Results to Criteria on Report - provide details below if box checked  
Select Distribution:  EMAIL  MAIL  FAX

Invoice Recipients

Select Invoice Distribution:  EMAIL  MAIL  FAX  
Email 1 or Fax: webh.todd@cleanharbors.com  
Email 2: yuha.stan@cleanharbors.com  
Email 3:

Turnaround Time (TAT) Requested

Routine [R] if received by 3pm M-F - no surcharges apply  
 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum  
 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum  
 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum  
 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum  
 Same day [E2] if received by 10am M-S - 200% rush surcharge.  
Additional fees may apply to rush requests on weekends, sit  
Date and Time Required for all E&P TATs:  
For all tests with rush TATs requested, please contact

Analysis Reque

Indicate Filtered (F), Preserved (P) or Filtered and P

NUMBER OF CONTAINERS

ALS Sample # (ALS use only)	ALS Lab Work Order # (ALS use only) (EO 2309082)	ALS Contact: Megha Walla	Date (dd-mm-yy)	Time (h:mm)	Sampler: Todd Webb	Sample Type	Table 4.3 B chemistry	SAMPLES ON HOLD	EXTENDED STORAGE REQ	SUSPECTED HAZARD (see 1
			5-Oct-23	10:00		Surface Water				

ALS Account # / Quote #: EO22-CHE3100-008  
Job #: Pond B Oct 5, 2023  
PO / AFE: Table 4.3B Chemistry  
ALS Sample # (ALS use only): Pond B  
ALS Lab Work Order # (ALS use only): EO 2309082  
Sample Identification and/or Coordinates (This description will appear on the report)

Company: Clean Harbors Canada  
Contact: Stephanie Dennis  
Project Information  
City/Province: Ryley, AB  
Street: PO Box 390, 50114 Range Road 173  
Postal Code: T0B 4A0  
Invoice To: Same as Report To  
Company: Clean Harbors Canada  
Contact: Stephanie Dennis

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)  
Drinking Water (DW) Samples (client use)  
Are samples taken from a Regulated DW System?  
Are samples for human consumption/ use?  
Released by: Todd Webb  
SHIPMENT RELEASE (client use)  
Date: 5-Oct-23  
Time: 5:00  
Received by: [Signature]  
INITIAL SHIPMENT RECEPTION (ALS use only)  
Date: 08/15/23  
Time: 8:29

Shipping and Receipt Details  
Cooling Method:  NONE  ICE  ICE PACKS  FROZEN  COOLING INITIATED  
Submission Comments identified on Sample Receipt Notification:  YES  NO  
Cooler Custody Seals Intact:  YES  N/A  
Sample Custody Seals Intact:  YES  N/A  
INITIAL COOLER TEMPERATURES °C:   
FINAL COOLER TEMPERATURES °C:   
Time:   
Date:   
FINAL SHIPMENT RECEPTION (ALS use only)

1. If any water samples are taken from a Regulated Drinking Water (DW) system, please submit using an Authorized DW COC form.  
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGALLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.  
WHITE - LABORATORY COPY YELLOW - CLIENT COPY  
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION  
REFR TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION  
By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.  
WHITE - LABORATORY COPY YELLOW - CLIENT COPY  
FEB 2022 FR



## CERTIFICATE OF ANALYSIS

<b>Work Order</b>	: <b>EO2309217</b>	Page	: 1 of 2
<b>Client</b>	: <b>Clean Harbors Environmental Services, Inc.</b>	Laboratory	: ALS Environmental - Edmonton
<b>Contact</b>	: Todd Webb	Account Manager	: Megha Walia
<b>Address</b>	: PO Box 390, 50114 Range Road 173 Ryley AB Canada T0B4A0	Address	: 9450 - 17 Avenue NW Edmonton AB Canada T6N 1M9
<b>Telephone</b>	: 780 663 2513	Telephone	: +1 780 413 5227
<b>Project</b>	: Pond B Oct 10,2023	Date Samples Received	: 10-Oct-2023 15:39
<b>PO</b>	: 236720	Date Analysis	: 11-Oct-2023
<b>C-O-C number</b>	: ----	Commenced	
<b>Sampler</b>	: TW	Issue Date	: 18-Oct-2023 15:30
<b>Site</b>	: Table 4.3B - Oct 10 Trout, Daphnia, COD, Sheen		
<b>Quote number</b>	: EO22-CHES100-008		
<b>No. of samples received</b>	: 1		
<b>No. of samples analysed</b>	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Amanda Powell	Account Manager	External Subcontracting, Edmonton, Alberta
Fahad Husain	Analyst	Inorganics, Edmonton, Alberta
Geoff Berg	Lab Analyst	Organics, Edmonton, Alberta



## General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Measurement Uncertainty: The reported uncertainties in this report are expanded uncertainties calculated using a coverage factor of 2, which gives a level of confidence of approximately 95%.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Unit	Description
-	no units
mg/L	milligrams per litre

>: greater than.

<: less than.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

## Sample Comments

Sample	Client Id	Comment
EO2309217-001	Pond B	*Manual remark*Used preserved bottle used for visible sheen. Results should be reliable.

## Analytical Results

EO2309217-001

Sub-Matrix: **Water**

(Matrix: **Water**)

Client sample ID: Pond B

Client sampling date / time: 10-Oct-2023

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QCLot
<b>Bioassays</b>								
Daphnia magna LC50	----	See attached	-	-	DAP-LC50-48/3D	-	11-Oct-2023	-
Trout bioassay LC50	----	See attached	-	-	TRT-LC50-96/3D	-	12-Oct-2023	-
<b>Aggregate Organics</b>								
Chemical oxygen demand [COD]	----	47	10	mg/L	E559-L/EO	-	12-Oct-2023	1181294
Oil & grease (visible sheen)	----	Absent	-	-	E566/EO	-	11-Oct-2023	-

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.




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## QUALITY CONTROL INTERPRETIVE REPORT

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<p><b>Work Order</b> : <b>EO2309217</b></p> <p><b>Client</b> : <b>Clean Harbors Environmental Services, Inc.</b></p> <p><b>Contact</b> : Todd Webb</p> <p><b>Address</b> : PO Box 390, 50114 Range Road 173 Ryley AB Canada T0B4A0</p> <p><b>Telephone</b> : 780 663 2513</p> <p><b>Project</b> : Pond B Oct 10,2023</p> <p><b>PO</b> : 236720</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : TW</p> <p><b>Site</b> : Table 4.3B - Oct 10 Trout, Daphnia, COD, Sheen</p> <p><b>Quote number</b> : EO22-CHES100-008</p> <p><b>No. of samples received</b> : 1</p> <p><b>No. of samples analysed</b> : 1</p>	<p><b>Page</b> : 1 of 5</p> <p><b>Laboratory</b> : ALS Environmental - Edmonton</p> <p><b>Account Manager</b> : Megha Walia</p> <p><b>Address</b> : 9450 - 17 Avenue NW Edmonton, Alberta Canada T6N 1M9</p> <p><b>Telephone</b> : +1 780 413 5227</p> <p><b>Date Samples Received</b> : 10-Oct-2023 15:39</p> <p><b>Issue Date</b> : 18-Oct-2023 15:33</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

**Key**

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

---

### ***Workorder Comments***

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

---

### ***Summary of Outliers***

#### ***Outliers : Quality Control Samples***

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

#### ***Outliers: Reference Material (RM) Samples***

- No Reference Material (RM) Sample outliers occur.

***Outliers : Analysis Holding Time Compliance (Breaches)***

- No Analysis Holding Time Outliers exist.

***Outliers : Frequency of Quality Control Samples***

- No Quality Control Sample Frequency Outliers occur.



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)</b>										
<b>Amber glass total (sulfuric acid)</b> Pond B	E559-L	10-Oct-2023	----	----	----		12-Oct-2023	28 days	2 days	✔
<b>Aggregate Organics : Oil &amp; Grease by Visible Sheen</b>										
<b>Amber glass (hydrochloric acid)</b> Pond B	E566	10-Oct-2023	----	----	----		11-Oct-2023	28 days	1 days	✔
<b>Bioassays : Survival/LC50 Daphnia Magna 48 hours</b>										
<b>HDPE</b> Pond B	DAP-LC50-48	10-Oct-2023	----	----	----		11-Oct-2023	5 days	2 days	✔
<b>Bioassays : Survival/LC50 Rainbow Trout (96 hours)</b>										
<b>HDPE Pail</b> Pond B	TRT-LC50-96	10-Oct-2023	----	----	----		12-Oct-2023	5 days	2 days	✔

### Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).





## Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1181294	1	20	5.0	5.0	✔
<b>Laboratory Control Samples (LCS)</b>							
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1181294	1	20	5.0	5.0	✔
<b>Method Blanks (MB)</b>							
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1181294	1	20	5.0	5.0	✔
<b>Matrix Spikes (MS)</b>							
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	1181294	1	20	5.0	5.0	✔



## Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Survival/LC50 Daphnia Magna 48 hours	DAP-LC50-48  Bureau Veritas (Edmonton) - 9331 - 48th Street Edmonton Alberta Canada T6B 2R4	Water	EPS1/RM/14	See attached report.
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L  ALS Environmental - Edmonton	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.
Oil & Grease by Visible Sheen	E566  ALS Environmental - Edmonton	Water	Alberta Energy Regulator, Drilling waste Management, Directive 050, July 2016	Use a qualitative visual observation of rainbow sheen to determine the presence or absence of oil and grease on water.
Survival/LC50 Rainbow Trout (96 hours)	TRT-LC50-96  Bureau Veritas (Edmonton) - 9331 - 48th Street Edmonton Alberta Canada T6B 2R4	Water	EPS1/RM/13	See attached report.

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: EO2309217</b>	<b>Page</b>	<b>: 1 of 3</b>
<b>Client</b>	: Clean Harbors Environmental Services, Inc.	<b>Laboratory</b>	: ALS Environmental - Edmonton
<b>Contact</b>	: Todd Webb	<b>Account Manager</b>	: Megha Walia
<b>Address</b>	: PO Box 390, 50114 Range Road 173 Ryley AB Canada T0B4A0	<b>Address</b>	: 9450 - 17 Avenue NW Edmonton, Alberta Canada T6N 1M9
<b>Telephone</b>	:	<b>Telephone</b>	: +1 780 413 5227
<b>Project</b>	: Pond B Oct 10,2023	<b>Date Samples Received</b>	: 10-Oct-2023 15:39
<b>PO</b>	: 236720	<b>Date Analysis Commenced</b>	: 11-Oct-2023
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 18-Oct-2023 15:31
<b>Sampler</b>	: TW 780 663 2513		
<b>Site</b>	: Table 4.3B - Oct 10 Trout, Daphnia, COD, Sheen		
<b>Quote number</b>	: EO22-CHES100-008		
<b>No. of samples received</b>	: 1		
<b>No. of samples analysed</b>	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Amanda Powell	Account Manager	Bureau Veritas (Edmonton) External Subcontracting, Edmonton, Alberta
Fahad Husain	Analyst	Edmonton Inorganics, Edmonton, Alberta
Geoff Berg	Lab Analyst	Edmonton Organics, Edmonton, Alberta



## General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

- Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO = Data Quality Objective.
- LOR = Limit of Reporting (detection limit).
- RPD = Relative Percent Difference
- # = Indicates a QC result that did not meet the ALS DQO.

## Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

## Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Aggregate Organics (QC Lot: 1181294)</b>											
EO2309209-001	Anonymous	Chemical oxygen demand [COD]	----	E559-L	10	mg/L	59	61	2	Diff <2x LOR	----

## Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Aggregate Organics (QCLot: 1181294)</b>						
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	----



### Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Aggregate Organics (QCLot: 1181294)</b>									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	107	85.0	115	----

### Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level  $\geq 1x$  spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike	Recovery (%)	Recovery Limits (%)			
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Aggregate Organics (QCLot: 1181294)</b>										
EO2309209-002	Anonymous	Chemical oxygen demand [COD]	----	E559-L	105 mg/L	100 mg/L	105	75.0	125	----



Your P.O. #: EO2309217  
 Your Project #: EO2309217  
 Your C.O.C. #: 146520

**Attention: ALS Reporting Edmonton**

ALS ENVIRONMENTAL  
 Bay 7, 1313 44th ave NE  
 CALGARY, AB  
 CANADA T2E 6L5

**Report Date: 2023/10/18**  
 Report #: R3412319  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C381928**

**Received: 2023/10/11, 10:30**

Sample Matrix: Water  
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Daphnia magna LC50 Multi-Concentration	1	N/A	2023/10/11	EENVSOP-00154	EPS 1 RM14 2nd ed m
Rainbow Trout LC50 Multi-Concentration	1	N/A	2023/10/12	EENVSOP-00160	EPS 1 RM13 2nd ed m

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested. This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your P.O. #: EO2309217  
Your Project #: EO2309217  
Your C.O.C. #: 146520

**Attention: ALS Reporting Edmonton**

ALS ENVIRONMENTAL  
Bay 7, 1313 44th ave NE  
CALGARY, AB  
CANADA T2E 6L5

**Report Date: 2023/10/18**  
Report #: R3412319  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C381928**

**Received: 2023/10/11, 10:30**

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:  
Customer Solutions, Western Canada Customer Experience Team  
Email: customersolutionswest@bureauveritas.com  
Phone# (780) 577-7100

=====

This report has been generated and distributed using a secure automated process.

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Scott Cantwell, General Manager responsible for Alberta Environmental laboratory operations.



**BUREAU  
VERITAS**

Bureau Veritas Job #: C381928  
Report Date: 2023/10/18

ALS ENVIRONMENTAL  
Client Project #: EO2309217  
Your P.O. #: EO2309217

### RESULTS OF CHEMICAL ANALYSES OF WATER

<b>Bureau Veritas ID</b>		CBM263	
<b>Sampling Date</b>		2023/10/10 00:00	
<b>COC Number</b>		146520	
	<b>UNITS</b>	<b>EO2309217-001</b>	<b>QC Batch</b>
<b>Daphnia Magna Bioassay</b>			
LC50	% vol/vol	ATTACHED	B148840





**BUREAU  
VERITAS**

Bureau Veritas Job #: C381928  
Report Date: 2023/10/18

ALS ENVIRONMENTAL  
Client Project #: EO2309217  
Your P.O. #: EO2309217

### TOXICOLOGY (WATER)

<b>Bureau Veritas ID</b>		CBM263	
<b>Sampling Date</b>		2023/10/10 00:00	
<b>COC Number</b>		146520	
	<b>UNITS</b>	<b>EO2309217-001</b>	<b>QC Batch</b>
<b>Rainbow Trout Bioassay</b>			
LC50	% vol/vol	ATTACHED	B149613



### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	6.0°C
Package 2	6.0°C
Package 3	5.7°C
Package 4	6.0°C
Package 5	5.0°C

**Results relate only to the items tested.**



BUREAU  
VERITAS

Bureau Veritas Job #: C381928  
Report Date: 2023/10/18

ALS ENVIRONMENTAL  
Client Project #: EO2309217  
Your P.O. #: EO2309217

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

A handwritten signature in blue ink, appearing to read "Cara Shurgot", written over a horizontal line.

Cara Shurgot, Analyst 2

---

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Scott Cantwell, General Manager responsible for Alberta Environmental laboratory operations.



Chain of Custody  
 ALS Environmental - Edmonton  
 9450 - 17 Avenue NW  
 Edmonton AB Canada T6N 1M9

254(5)

146520



Destination Lab: **Bureau Veritas (Edmonton)**

Address: 9331 - 48th Street Edmonton AB Canada  
T6B 2R4

Work Order Number: **EO2309217**

Original Receipt Date/Time: 10/10/2023 15:39  
 Instructions Received

**RUSH**

Relinquished By

Date/Time

---

Received By

Date/Time

Receipt Temp

Return as Indicated: Results: ALSEDCClientServices@alsglobal.com Invoice: ALSEDCClientServices@alsglobal.com Electronic Data: ALSEDCClientServices@alsglobal.com  
 Attention: Megha Walia

ALS Sample ID	Client ID	Matrix	Container Type	Test Codes	Method Description	Due Date	Sampling Date and Time	Remarks
EO2309217-001	Pond B	Water	HDPE	DAP-LC50-48	Survival/LC50 Daphnia Magna 48 hours	18-10-2023	10/10/2023 00:00	
EO2309217-001	Pond B	Water	HDPE			18-10-2023	10/10/2023 00:00	
EO2309217-001	Pond B	Water	HDPE Pail	TRT-LC50-96	Survival/LC50 Rainbow Trout (96 hours)	18-10-2023	10/10/2023 00:00	
EO2309217-001	Pond B	Water	HDPE Pail			18-10-2023	10/10/2023 00:00	
EO2309217-001	Pond B	Water	HDPE Pail			18-10-2023	10/10/2023 00:00	
EO2309217-001	Pond B	Water	HDPE Pail			18-10-2023	10/10/2023 00:00	

76 Ave  
 4 pails  
 2 bottles  
 C381928  
 Deji Wu  
 2023/10/11 10:30  
 Temp. See ACTR



RESULTS OF DAPHNIA MAGNA LC50 MULTI-CONCENTRATION

BUREAU VERITAS

Client : 70036 ALS ENVIRONMENTAL, CALGARY
Client Project Name & Number: EO2309217

Job Number: C381928
Sample Number: CBM263-02

Test Result:

48 hrs LC50 % vol/vol (95% CL): >100% (N/A) Statistical Method: Visual

Sample Name : EO2309217-001
Description: Yellow, clear
Sample Collected: Oct 10, 2023
Sample Collected By: N/A
Sample Received: Oct 11, 2023 10:30 AM
Analysis Start : Oct 11, 2023 02:43 PM
End : Oct 13, 2023 01:49 PM
Sampling Method : N/A
Site Collection: N/A
Volume Received: 1L
Avg Temp Arrival: 6 °C
Storage: 2-6°C
Sample Matrix : Water
Sample Prior to Analysis:
pH: 7.9
Temperature : 20 °C
Dissolved Oxygen: 10.7 mg/L
Sample Conductance: 818 µS/cm
Hardness: 180 mg CaCO3/L

Table with 13 columns: Concentration, Temperature (°C), pH (pH), Conductivity (uS/cm), Dissolved Oxygen (mg/L), Mortality (#), Mortality (%), Immobility (#), Immobility (%), Temperature (°C), pH (pH), Conductivity (uS/cm), Dissolved Oxygen (mg/L). Rows include % vol/vol (Start) and concentrations 0, 6.25, 12.5, 25, 50, 100.

Table with 5 columns: Concentration, Mortality (#), Mortality (%), Immobility (#), Immobility (%). Rows include % vol/vol (48 hrs) and concentrations 0, 6.25, 12.5, 25, 50, 100.

Comments : None

Culture/Control/Dilution Water: City of Edmonton dechlorinated tap water
Hardness: 180 mg/L CaCO3 Other parameters available on request.

Test Conditions
Test concentration : 0,6.25,12.5,25,50,100 (% vol/vol)
Organisms per Vessel : 10
Pre-aeration Time : 30 min
Rate of Pre-aeration : 25-50 mL/min/L
Total # of Organisms Used : 60
Test Temperature : 20 ± 2 °C
Test Hardness Adjusted : No
Test Volume : 150 mL
Vessel Volume : 200 mL
Test pH Adjusted: No
Loading Density : 15.0 mL/Daphnia
Photoperiod : 16:8 (light: dark)

Test Organism : Daphnia magna
Source : In House Culture
Age at Test Initiation : <24 hrs
Average Brood Size : 36.9
Culture Photoperiod : 16:8 (light: dark)
% Mortality within 7 days : 1.7
Culture Temperature : 20 ± 2 °C
Time To First Brood : 9 Days
Culture Diet : Pseudokirchneriella and YTC at a ratio of 2 mL/L of culture daily. New cultures weekly, 63 daphnids distributed into 6 culture vessels and 3 reproductive vessels.



RESULTS OF *DAPHNIA MAGNA* LC50 MULTI-CONCENTRATION

BUREAU VERITAS

Client : 70036 ALS ENVIRONMENTAL, CALGARY  
Client Project Name & Number: EO2309217

Job Number: C381928  
Sample Number: CBM263-02

**Reference chemical:** Sodium Chloride Test Date: Sep 29, 2023  
Test Endpoint 48 hrs LC50 (95% confidence interval) : 6.96 (5.70, 8.50)g/L Statistical Method : Binomial  
Historical Mean LC50 (warning limits) : 6.01 (4.52, 8.00) g/L Concentration : 0,1.71,2.56,3.82,5.7,8.5 g/L

**Test Method** EPS 1/RM/14  
Method Deviations: None

**Note:** The results contained in this report refer only to the testing of the sample submitted. Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation, including the toxicity parameters reported herein. The conductivity, dissolved oxygen and pH data contained within the toxicity report are provided for information purposes and are not individually accredited parameters. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

Analyst : Natasha Lloyd, Rayane Gama Santos, Svetlana Sofrenovic, Tami Horvath

Verified By : Cara Shurgot, Analyst 2

Date: Oct 18, 2023 12:31 PM



# RESULTS OF RAINBOW TROUT LC50 MULTI-CONCENTRATION

BUREAU  
VERITAS

Client : 70036 ALS ENVIRONMENTAL, CALGARY  
Client Project Name & Number : EO2309217

Job Number: C381928

### Test Result:

96 hrs LC50 % vol/vol (95% CL): >100% (N/A) Statistical Method: Visual

<b>Sample Name :</b>	EO2309217-001	<b>Sample Matrix :</b>	Water
<b>Description:</b>	Yellow, clear	<b>Sample Number:</b>	CBM263-01
<b>Sample Collected:</b>	Oct 10, 2023	<b>Sampling Method :</b>	N/A
<b>Sample Collected By:</b>	N/A	<b>Volume Received:</b>	60 L
<b>Sample Received:</b>	Oct 11, 2023 10:30 AM	<b>pH:</b>	7.9
<b>Analysis Start :</b>	Oct 12, 2023 11:00 AM	<b>Temperature :</b>	14 °C
		<b>Site Collection:</b>	N/A
		<b>Avg Temp Arrival:</b>	6 °C
		<b>Storage:</b>	2-6 °C
		<b>Dissolved Oxygen:</b>	10.6 mg/L
		<b>Sample Conductance:</b>	706 µS/cm

Concentration	Temperature (°C)	pH (pH)	Conductivity (uS/cm)	Dissolved Oxygen (mg/L)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)
% vol/vol	Start	Start	Start	Start	24 hrs	24 hrs	24 hrs	24 hrs	48 hrs	48 hrs	48 hrs	48 hrs
0	14	7.9	277	9.4	0	0	0	0	0	0	0	0
6.25	14	7.9	318	9.4	0	0	0	0	0	0	0	0
12.5	14	7.8	329	9.6	0	0	0	0	0	0	0	0
25	14	7.8	383	9.7	0	0	0	0	0	0	0	0
50	14	7.9	486	9.7	0	0	0	0	0	0	0	0
100	13	7.9	703	9.9	0	0	0	0	0	0	0	0

Concentration	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)	Temperature (°C)	pH (pH)	Conductivity (uS/cm)	Dissolved Oxygen (mg/L)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)	Atypical Behaviour (%)
% vol/vol	72 hrs	72 hrs	72 hrs	72 hrs	96 hrs	96 hr	96 hrs	96 hrs	96 hrs	96 hrs	96 hrs	96 hrs
0	0	0	0	0	15	7.7	280	9.5	0	0	0	0
6.25	0	0	0	0	14	7.7	315	9.5	0	0	0	0
12.5	0	0	0	0	14	7.7	325	9.4	0	0	0	0
25	0	0	0	0	14	7.8	380	9.6	0	0	0	0
50	0	0	0	0	14	7.5	488	8.4	0	0	0	0
100	0	0	0	0	14	7.8	712	9.0	0	0	0	0

Comments : None

### Culture/Control/Dilution Water

City of Edmonton dechlorinated tap water

Hardness:

170 mg/L CaCO<sub>3</sub>

Other parameters available on request.

### Test Conditions

Test concentration : 0,6.25,12.5,25,50,100 (% vol/vol)

Organisms per Vessel : 10

Test Temperature : 15 ± 1 °C

Solution Depth :

>15 cm

Total # of Organisms Used : 60

Pre-aeration Time : 120 min.

Rate of Aeration

6.5±1 mL/min/L

Test Volume : 20 L

Vessel Volume : 38L

Test pH Adjusted:

No

Loading Density : 0.2 g/L

Photoperiod :

16:8 (light: dark)

### Test Organism :

Rainbow Trout (*Oncorhynchus mykiss*)

Source :

LSL Trout Hatchery

Culture Temperature : 15 ± 2 °C

Weight (Mean) +- SD :

0.4 ± 0.1 g

Length (Mean) +- SD :

3.63 ± 0.23 cm

Culture Water Renewal : ≥ 1.0 L/min/kg fish

Weight (Range) :

0.3 – 0.5 g

Length (Range) :

3.30 – 4.00 cm

Culture Photoperiod : 16:8 (light: dark)

% Mortality within 7 days : 0.4%

Feeding rate and frequency :

daily: 1-5% biomass of trout.

Acclimation Time:

>14 days

### Reference chemical:

Phenol

Test Date:

Oct 09, 2023

Test Endpoint 96 hrs LC50 (95% confidence interval) :

7.94 (<7.59, 8.65)mg/L

Statistical Method :

Probit

Historical Mean LC50 (warning limits) :

8.96 (8.06, 9.95) mg/L

Concentration : 0,7.59,9.15,11,13.3,16 mg/L



BUREAU  
VERITAS

## RESULTS OF RAINBOW TROUT LC50 MULTI-CONCENTRATION

**Client :** 70036 ALS ENVIRONMENTAL, CALGARY  
**Client Project Name & Number:** EO2309217

**Job Number:** C381928  
**Sample Number:** CBM263-01

**Test Method** EPS 1/RM/13

**Method Deviations :** The control chart result for this reference toxicant test was outside of 2SD limits. A check of all acclimation and test conditions was performed, and all requirements were met. The temperature of the 100% concentration was 13°C at test initiation which is below the minimum temperature of 14°C as specified in the reference method. All other culture and test quality indicators met requirements.

**Note:** The results contained in this report refer only to the testing of the sample submitted. Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation, including the toxicity parameters reported herein. The conductivity, dissolved oxygen and pH data contained within the toxicity report are provided for information purposes and are not individually accredited parameters. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

**Analyst :** Cara Shurgot, Kyle Monaghan, Svetlana Sofrenovic, Tami Horvath

**Verified By :** Cara Shurgot, Analyst 2

**Date:** Oct 18, 2023 02:32 PM



Bureau Veritas Job Number: C381928  
Report Date: 2023/10/18

ALS ENVIRONMENTAL  
Client Project #: EO2309217  
Your P.O. #: EO2309217

**RESULTS OF CHEMICAL ANALYSES OF WATER**

Bureau Veritas ID		CBM263	
Sampling Date		10/10/2023	
COC Number		146520	
	<b>UNITS</b>	<b>EO2309217-001</b>	<b>QC Batch</b>
<b>Daphnia Magna Bioassay</b>			
LC50	% vol/vol	ATTACHED	B148840

RDL = Reportable Detection Limit  
N/A = Not Applicable

**Results relate only to the items tested.**



www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 22 -

Page of

Contact and company name below will appear on the final report

Reports / Recipients

Turnaround Time (TAT) Requested

Environmental Division  
Edmonton  
Work Order Reference  
EO2309217

EO2309217



Telephone : +1 780 413 6227

- Routine [R] if received by 3pm M-F - no surcharges apply
  - 4 day [P4] if received by 3pm M-F - 20% rush surcharge
  - 3 day [P3] if received by 3pm M-F - 25% rush surcharge
  - 2 day [P2] if received by 3pm M-F - 50% rush surcharge
  - 1 day [E] if received by 3pm M-F - 100% rush surcharge
  - Same day [E2] if received by 10am M-S - 200% rush surc
- Additional fees may apply to rush requests on web
- Date and Time Required for all EAP TATs:
- For all tests with rush TATs requested, please

Indicate Filtered (F), Preserved (P) or Filter

Analysis

Company: Clean Harbors Canada  
 Contact: Todd Webb, Stan Yuha  
 Phone: (780) 663-2513  
 Company address below will appear on the final report  
 Street: PO Box 390, 50114 Range Road 173  
 City/Province: Ryley, AB  
 Postal Code: T0B 4A0

Select Report Format:  PDF  EXCEL  EDD (DIGITAL)  
 Merge QC/QCI Reports with COA  YES  NO  N/A  
 Compare Results to Criteria on Report - provide details below if box checked  
 Select Distribution:  EMAIL  MAIL  FAX  
 Email 1 or Fax: todd.webb@cleanharbors.com  
 Email 2: stan.yuha@cleanharbors.com  
 Email 3:

Invoice To: Same as Report To  YES  NO  
 Copy of Invoice with Report  YES  NO  
 Company: Clean Harbors Canada  
 Contact: Stephanie Dennis  
 Email 1 or Fax: Dennis.Stephanie@cleanharbors.com  
 Email 2:

ALS Account # / Quote #: EQ22-CHES100-008  
 Job #: Pond B Oct 10, 2023  
 PO / AFE: 236720  
 LSD: Table 4.3B - Oct 10 Trout, Daphnia, COD, Sheen

ALS Lab Work Order # (ALS use only): EO2309217

ALS Contact: Megha Walla  
 Date: (dd-mm-yy) 10-Oct-23  
 Time: (hh:mm)  
 Sampler: Todd Webb  
 Sample Type: Surface Water

NUMBER OF CONTAINERS			
E559-L - COD	P2	P2	P3
E566 - visible sheen	P2	P3	P3
3D-DAP-LC50-48 (Daphnia LC50)			
3D-TRT-LC50-96h (trout LC50)			

SAMPLES ON HOLD  
 EXTENDED STORAGE REQU  
 SUSPECTED HAZARD (see notes)

Sample Identification and/or Coordinates (This description will appear on the report)

Drinking Water (DW) Samples (client use)  
 Are samples taken from a Regulated DW System?  
 YES  NO

Are samples for human consumption/ use?  
 YES  NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Shipping Method:  NONE  ICE  ICE PACKS  FROZEN  COOLING INITIATED

Submission Comments identified on Sample Receipt Notification:  YES  NO

Cooler Custody Seals Intact:  YES  N/A Sample Custody Seals Intact:  YES  N/A

INITIAL COOLER TEMPERATURES °C: 12.6 FINAL COOLER TEMPERATURES °C:

Released by: Todd Webb Date: 10-Oct-23 Time: 10:01:23  
 Received by: [Signature] Date: 10-Oct-23 Time: 8:39

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION  
 Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.  
 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.