



## CERTIFICATE OF ANALYSIS

<b>Work Order</b>	<b>: FC2300504</b>	Page	: 1 of 16
Client	: <b>Regional Municipality of Wood Buffalo</b>	Laboratory	: Fort McMurray - Environmental
Contact	: Water Treatment Plant	Account Manager	: Megan Trydal
Address	: 1 Silin Forest Road Fort McMurray AB Canada T9H 5A1	Address	: #4, 340 Macalpine Crescent Fort McMurray AB Canada T9H 4A8
Telephone	: 780-762-5863	Telephone	: +1 780 791 1524
Project	: ----	Date Samples Received	: 02-Mar-2023 07:28
PO	: 4500049712	Date Analysis Commenced	: 02-Mar-2023
C-O-C number	: ----	Issue Date	: 10-Mar-2023 09:58
Sampler	: DM		
Site	: Schedule 4: Fort Chip		
Quote number	: Q61323 (Fort chip)		
No. of samples received	: 3		
No. of samples analysed	: 3		

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
- Surrogate Control Limits

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>
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Andrea Armstrong	Department Manager - Air Quality and Volatiles	Organics, Waterloo, Ontario
Christian Murera	Lab Analyst	Organics, Edmonton, Alberta
Dan Nguyen	Team Leader - Inorganics	Metals, Edmonton, Alberta
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Yan Zhang	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).

Unit	Description
-	no units
%	percent
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
CU	colour units (1 cu = 1 mg/l pt)
meq/L	milliequivalents per litre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

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.

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
FC2300504-003	TREATED WATER-LAB SINK	RRR: Detection limit raised due to bias low analyte response in continuing calibration standard.

## Qualifiers

Qualifier	Description
DLB	Detection Limit Raised. Analyte detected at comparable level in Method Blank.
DLI	Detection Limit Raised: Dilution required to address Internal Standard response problems caused by matrix interference.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).



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*RRR*                      *Refer to report comments for issues regarding this analysis.*  
*SFP*                      *Sample was filtered and preserved at the laboratory.*  
*SRU*                      *Sample Received Unpreserved. Results may be biased low for indicated  
parameter(s).*

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## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001	FC2300504-002	FC2300504-003	-----	-----	
					Result	Result	Result	----	----	
<b>Physical Tests</b>										
Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	53.2	----	----	----	----	
Alkalinity, bicarbonate (as CaCO3)	----	E290	2.0	mg/L	----	----	53.1	----	----	
Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, carbonate (as CaCO3)	----	E290	2.0	mg/L	----	----	<2.0	----	----	
Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, hydroxide (as CaCO3)	----	E290	2.0	mg/L	----	----	<2.0	----	----	
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, phenolphthalein (as CaCO3)	----	E290	2.0	mg/L	----	----	<2.0	----	----	
Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	53.2	----	53.1	----	----	
Colour, true	----	E329-L	2.0	CU	<2.0	----	<2.0	----	----	
Conductivity	----	E100	2.0	µS/cm	148	----	147	----	----	
Hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	35.3	----	----	----	----	
Hardness (as CaCO3), from total Ca/Mg	----	EC100A	0.50	mg/L	36.5	----	36.9	----	----	
pH	----	E108	0.10	pH units	8.14	----	8.18	----	----	
Solids, total dissolved [TDS]	----	E162	10	mg/L	84	----	96	----	----	
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	64.9	----	----	----	----	
Alkalinity, carbonate (as CO3)	3812-32-6	E290	1.0	mg/L	<1.0	----	----	----	----	
Alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	----	----	----	----	
Solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	93.1	----	----	----	----	
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0201	<0.0050	----	----	
Chloride	16887-00-6	E235.Cl	0.50	mg/L	13.4	----	13.6	----	----	
Fluoride	16984-48-8	E235.F	0.020	mg/L	0.039	----	0.029	----	----	
Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.076	----	0.069	----	----	
Nitrate + Nitrite (as N)	----	EC235.N+N	0.0050	mg/L	----	----	0.0690	----	----	
Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	----	<0.010	----	----	
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	----	----	----	----	
Phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0035	0.0139	0.0032	----	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001 Result	FC2300504-002 Result	FC2300504-003 Result	----- ----	----- ----	
<b>Anions and Nutrients</b>										
Silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	4.82	----	----	----	----	
Sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.30	mg/L	2.75	----	2.85	----	----	
Nitrate + Nitrite (as N)	----	EC235.N+N	0.0500	mg/L	0.0760	----	----	----	----	
<b>Cyanides</b>										
Cyanide, strong acid dissociable (Total)	----	E333	0.0020	mg/L	----	----	<0.0200 <sup>DLM</sup>	----	----	
<b>Organic / Inorganic Carbon</b>										
Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	7.99 <sup>SFP</sup>	----	----	----	----	
Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	----	----	2.50	----	----	
<b>Inorganics</b>										
Chloramines, total (as Cl <sub>2</sub> )	----	EC326	0.20	mg/L	----	----	<0.20	----	----	
Chlorine, free	7782-50-5	E327-H	0.10	mg/L	----	----	2.17	----	----	
Chlorine, total	7782-50-5	E326-L	0.020	mg/L	----	----	2.30	----	----	
Chlorite	14998-27-7	E409.CLO2	0.010	mg/L	----	----	<0.010	----	----	
<b>Total Sulfides</b>										
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	----	----	<0.0015	----	----	
<b>Ion Balance</b>										
Anion sum	----	EC101	0.10	meq/L	1.50	----	----	----	----	
Cation sum	----	EC101	0.10	meq/L	1.48	----	----	----	----	
Ion balance (APHA)	----	EC101	0.01	%	-0.67	----	----	----	----	
Ion balance (cations/anions)	----	EC101	0.010	%	98.7	----	----	----	----	
<b>Total Metals</b>										
Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0244	0.160	0.0153	----	----	
Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00010	<0.00010	<0.00010	----	----	
Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00013	0.00029	0.00012	----	----	
Barium, total	7440-39-3	E420	0.00010	mg/L	0.0179	0.0181	0.0176	----	----	
Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	<0.000020	----	----	
Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
Boron, total	7440-42-8	E420	0.010	mg/L	0.015	0.016	0.016	----	----	
Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	



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Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001	FC2300504-002	FC2300504-003	-----	-----	
					Result	Result	Result	----	----	
<b>Total Metals</b>										
Calcium, total	7440-70-2	E420	0.050	mg/L	10.2	8.82	10.2	----	----	
Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	0.000033	<0.000010	----	----	
Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	0.00081	<0.00050	----	----	
Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Copper, total	7440-50-8	E420	0.00050	mg/L	0.00061	0.00149	0.00060	----	----	
Iron, total	7439-89-6	E420	0.010	mg/L	<0.010	0.308	<0.010	----	----	
Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	0.000749	<0.000050	----	----	
Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0033	0.0033	0.0033	----	----	
Magnesium, total	7439-95-4	E420	0.0050	mg/L	2.69	2.70	2.78	----	----	
Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00268	0.00503	0.00154	----	----	
Mercury, total	7439-97-6	E508	0.0000050	mg/L	----	----	<0.0000050	----	----	
Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000219	0.000315	0.000214	----	----	
Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	0.00102	<0.00050	----	----	
Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	<0.050	----	----	
Potassium, total	7440-09-7	E420	0.050	mg/L	1.03	1.09	1.01	----	----	
Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00104	0.00136	0.00102	----	----	
Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	0.000050	<0.000050	----	----	
Silicon, total	7440-21-3	E420	0.10	mg/L	2.28	2.67	2.25	----	----	
Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Sodium, total	7440-23-5	E420	0.050	mg/L	16.4	3.08	17.0	----	----	
Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0632	0.0621	0.0634	----	----	
Sulfur, total	7704-34-9	E420	0.50	mg/L	1.48	1.35	1.45	----	----	
Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	<0.00020	----	----	
Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	0.00396	<0.00030	----	----	
Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	----	----	
Uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	0.000110	<0.000010	----	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001	FC2300504-002	FC2300504-003	-----	-----	
					Result	Result	Result	----	----	
<b>Total Metals</b>										
Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	----	----	
Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	0.0290	<0.0030	----	----	
Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	<0.00020	----	----	
<b>Dissolved Metals</b>										
Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0152	----	0.0144	----	----	
Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	<0.00010	----	----	
Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00014	----	0.00013	----	----	
Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0176	----	0.0178	----	----	
Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	----	<0.000020	----	----	
Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	<0.000050	----	----	
Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.014	----	0.015	----	----	
Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	----	<0.0000050	----	----	
Calcium, dissolved	7440-70-2	E421	0.050	mg/L	9.49	----	9.71	----	----	
Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	----	<0.000010	----	----	
Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	----	<0.00050	----	----	
Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	----	<0.00010	----	----	
Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00038	----	0.00052	----	----	
Iron, dissolved	7439-89-6	E421	0.010	mg/L	----	----	<0.010	----	----	
Iron, dissolved	7439-89-6	E421	0.030	mg/L	<0.030	----	----	----	----	
Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	<0.000050	----	----	
Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0031	----	0.0030	----	----	
Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	2.82	----	2.86	----	----	
Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	----	----	0.00064	----	----	
Manganese, dissolved	7439-96-5	E421	0.00500	mg/L	<0.00500	----	----	----	----	
Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000228	----	0.000203	----	----	
Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	----	<0.00050	----	----	
Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	----	<0.050	----	----	
Potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.05	----	1.07	----	----	
Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00098	----	0.00103	----	----	





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001	FC2300504-002	FC2300504-003	-----	-----	
					Result	Result	Result	----	----	
<b>Dissolved Metals</b>										
Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	----	<0.000050	----	----	
Silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.27	----	2.27	----	----	
Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	<0.000010	----	----	
Sodium, dissolved	7440-23-5	E421	0.050	mg/L	17.1	----	17.2	----	----	
Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0614	----	0.0640	----	----	
Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	1.46	----	1.40	----	----	
Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	----	<0.00020	----	----	
Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	<0.000010	----	----	
Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	----	<0.00010	----	----	
Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	<0.00010	----	----	
Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	<0.00030	----	----	
Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	----	<0.00010	----	----	
Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	----	<0.000010	----	----	
Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	<0.00050	----	----	
Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	----	<0.0010	----	----	
Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	----	<0.00030	----	----	
Dissolved metals filtration location	----	EP421	-	-	Laboratory	----	Laboratory	----	----	
<b>Aggregate Organics</b>										
Naphthenic acids	----	E565	1.0	mg/L	<1.0	<1.0	<1.0	----	----	
Nitritotriacetic acid [NTA]	139-13-9	E394	0.20	mg/L	----	----	<0.20	----	----	
<b>Volatile Organic Compounds</b>										
Benzene	71-43-2	E611A	0.00050	mg/L	----	----	<0.00050	----	----	
Benzene	71-43-2	E611E	0.00050	mg/L	----	----	<0.00050	----	----	
Carbon tetrachloride	56-23-5	E611E	0.00050	mg/L	----	----	<0.00050	----	----	
Chlorobenzene	108-90-7	E611E	0.0010	mg/L	----	----	<0.0010	----	----	
Dichlorobenzene, 1,2-	95-50-1	E611E	0.00050	mg/L	----	----	<0.00050	----	----	
Dichlorobenzene, 1,4-	106-46-7	E611E	0.0010	mg/L	----	----	<0.0010	----	----	
Dichloroethane, 1,2-	107-06-2	E611E	0.0010	mg/L	----	----	<0.0010	----	----	
Dichloroethylene, 1,1-	75-35-4	E611E	0.0010	mg/L	----	----	<0.0010	----	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001	FC2300504-002	FC2300504-003	-----	-----	
					Result	Result	Result	----	----	
<b>Volatile Organic Compounds</b>										
Dichloromethane	75-09-2	E611E	0.0010	mg/L	----	----	<0.0010	----	----	
Dioxane, 1,4-	123-91-1	E611I	20	µg/L	----	----	<20	----	----	
Ethylbenzene	100-41-4	E611A	0.00050	mg/L	----	----	<0.00050	----	----	
Ethylbenzene	100-41-4	E611E	0.00050	mg/L	----	----	<0.00050	----	----	
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611E	0.00050	mg/L	----	----	<0.00050	----	----	
Tetrachloroethylene	127-18-4	E611E	0.0010	mg/L	----	----	<0.0010	----	----	
Toluene	108-88-3	E611A	0.00050	mg/L	----	----	<0.00050	----	----	
Toluene	108-88-3	E611E	0.00050	mg/L	----	----	<0.00050	----	----	
Trichloroethylene	79-01-6	E611E	0.0010	mg/L	----	----	<0.0010	----	----	
Vinyl chloride	75-01-4	E611E	0.0010	mg/L	----	----	<0.0010	----	----	
Xylene, m+p-	179601-23-1	E611A	0.00040	mg/L	----	----	<0.00040	----	----	
Xylene, m+p-	179601-23-1	E611E	0.00040	mg/L	----	----	<0.00040	----	----	
Xylene, o-	95-47-6	E611A	0.00030	mg/L	----	----	<0.00030	----	----	
Xylene, o-	95-47-6	E611E	0.00030	mg/L	----	----	<0.00030	----	----	
Xylenes, total	1330-20-7	E611A	0.00050	mg/L	----	----	<0.00050	----	----	
Xylenes, total	1330-20-7	E611E	0.00050	mg/L	----	----	<0.00050	----	----	
BTEX, total	----	E611E	0.0010	mg/L	----	----	<0.0010	----	----	
<b>Volatile Organic Compounds [Fuels]</b>										
Benzene	71-43-2	E611A	0.50	µg/L	<0.50	<0.50	----	----	----	
Ethylbenzene	100-41-4	E611A	0.50	µg/L	<0.50	<0.50	----	----	----	
Styrene	100-42-5	E611A	0.50	µg/L	<0.50	<0.50	----	----	----	
Toluene	108-88-3	E611A	0.50	µg/L	<0.50	<0.50	----	----	----	
Xylene, m+p-	179601-23-1	E611A	0.40	µg/L	<0.40	<0.40	----	----	----	
Xylene, o-	95-47-6	E611A	0.30	µg/L	<0.30	<0.30	----	----	----	
Xylenes, total	1330-20-7	E611A	0.50	µg/L	<0.50	<0.50	----	----	----	
BTEX, total	----	E611A	1.0	µg/L	<1.0	<1.0	----	----	----	
<b>Hydrocarbons</b>										
F1 (C6-C10)	----	E581.F1	100	µg/L	<100	<100	----	----	----	
F1 (C6-C10)	----	E581.F1	0.10	mg/L	----	----	<0.10	----	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001	FC2300504-002	FC2300504-003	-----	-----	
					Result	Result	Result	----	----	
<b>Hydrocarbons</b>										
F1-BTEX	----	EC580	25	µg/L	<100	<100	----	----	----	
F1-BTEX	----	EC580	0.100	mg/L	----	----	<0.100	----	----	
F2 (C10-C16)	----	E601	100	µg/L	<100	<100	<100	----	----	
F3 (C16-C34)	----	E601	250	µg/L	<250	<250	<250	----	----	
F4 (C34-C50)	----	E601	250	µg/L	<250	<250	<250	----	----	
Hydrocarbons, total (C6-C50)	----	EC581	370	µg/L	<380	<380	<380	----	----	
<b>Hydrocarbons Surrogates</b>										
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	E601	1.0	%	106	103	106	----	----	
Dichlorotoluene, 3,4-	95-75-0	E581.F1	1.0	%	106	113	124	----	----	
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	460-00-4	E611A	1.0	%	85.7	87.0	99.7	----	----	
Bromofluorobenzene, 4-	460-00-4	E611I	1.0	%	----	----	83.0	----	----	
Bromofluorobenzene, 4-	460-00-4	E611E	1.0	%	----	----	99.7	----	----	
Difluorobenzene, 1,4-	540-36-3	E611A	1.0	%	83.6	93.2	96.7	----	----	
Difluorobenzene, 1,4-	540-36-3	E611I	1.0	%	----	----	95.5	----	----	
Difluorobenzene, 1,4-	540-36-3	E611E	1.0	%	----	----	96.7	----	----	
<b>Polycyclic Aromatic Hydrocarbons</b>										
Acenaphthene	83-32-9	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Acenaphthene	83-32-9	E655B	0.20	µg/L	----	----	<0.20	----	----	
Acenaphthylene	208-96-8	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Acenaphthylene	208-96-8	E655B	0.20	µg/L	----	----	<0.20	----	----	
Acridine	260-94-6	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Anthracene	120-12-7	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Anthracene	120-12-7	E655B	0.20	µg/L	----	----	<0.20	----	----	
Benz(a)anthracene	56-55-3	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Benz(a)anthracene	56-55-3	E655B	0.20	µg/L	----	----	<0.20	----	----	
Benzo(a)pyrene	50-32-8	E641A	0.0050	µg/L	<0.0050	<0.0050	----	----	----	
Benzo(a)pyrene	50-32-8	E655B	0.050	µg/L	----	----	<0.050	----	----	
Benzo(a)pyrene	50-32-8	E641A	0.0000050	mg/L	----	----	<0.0000050	----	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001	FC2300504-002	FC2300504-003	-----	-----	
					Result	Result	Result	----	----	
<b>Polycyclic Aromatic Hydrocarbons</b>										
Benzo(b+j)fluoranthene	n/a	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Benzo(b+j)fluoranthene	n/a	E655B	0.20	µg/L	----	----	<0.20	----	----	
Benzo(b+j+k)fluoranthene	n/a	E641A	0.015	µg/L	<0.015	<0.015	----	----	----	
Benzo(e)pyrene	192-97-2	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Benzo(e)pyrene	192-97-2	E655B	0.050	µg/L	----	----	<0.050	----	----	
Benzo(g,h,i)perylene	191-24-2	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Benzo(g,h,i)perylene	191-24-2	E655B	0.20	µg/L	----	----	<0.20	----	----	
Benzo(k)fluoranthene	207-08-9	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Benzo(k)fluoranthene	207-08-9	E655B	0.20	µg/L	----	----	<0.20	----	----	
Camphene	79-92-5	E655B	0.40	µg/L	----	----	<0.40	----	----	
Chrysene	218-01-9	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Chrysene	218-01-9	E655B	0.20	µg/L	----	----	<0.20	----	----	
Dibenz(a,h)anthracene	53-70-3	E641A	0.0050	µg/L	<0.0050	<0.0050	----	----	----	
Dibenz(a,h)anthracene	53-70-3	E655B	0.20	µg/L	----	----	<0.20	----	----	
Dibenzofuran	132-64-9	E655B	0.20	µg/L	----	----	<0.20	----	----	
Fluoranthene	206-44-0	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Fluoranthene	206-44-0	E655B	0.20	µg/L	----	----	<0.20	----	----	
Fluorene	86-73-7	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Fluorene	86-73-7	E655B	0.20	µg/L	----	----	<0.20	----	----	
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Indeno(1,2,3-c,d)pyrene	193-39-5	E655B	0.20	µg/L	----	----	<0.20	----	----	
Methylnaphthalene, 1-	90-12-0	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Methylnaphthalene, 1-	90-12-0	E655B	0.40	µg/L	----	----	<0.40	----	----	
Methylnaphthalene, 1+2-	----	E641A	0.015	µg/L	<0.015	<0.015	----	----	----	
Methylnaphthalene, 1+2-	----	E655B	0.60	µg/L	----	----	<0.60	----	----	
Methylnaphthalene, 2-	91-57-6	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Methylnaphthalene, 2-	91-57-6	E655B	0.40	µg/L	----	----	<0.40	----	----	
Naphthalene	91-20-3	E641A	0.050	µg/L	<0.050	<0.050	----	----	----	
Naphthalene	91-20-3	E655B	0.20	µg/L	----	----	<0.20	----	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001	FC2300504-002	FC2300504-003	-----	-----	
					Result	Result	Result	----	----	
<b>Polycyclic Aromatic Hydrocarbons</b>										
Perylene	198-55-0	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Perylene	198-55-0	E655B	0.20	µg/L	----	----	<0.20	----	----	
Phenanthrene	85-01-8	E641A	0.020	µg/L	<0.020	<0.020	----	----	----	
Phenanthrene	85-01-8	E655B	0.20	µg/L	----	----	<0.20	----	----	
Pyrene	129-00-0	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
Pyrene	129-00-0	E655B	0.20	µg/L	----	----	<0.20	----	----	
Quinoline	91-22-5	E641A	0.050	µg/L	<0.050	<0.050	----	----	----	
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.010	µg/L	<0.010	<0.010	----	----	----	
<b>Polycyclic Aromatic Hydrocarbons Surrogates</b>										
Chrysene-d12	1719-03-5	E641A	0.1	%	105	110	109	----	----	
Naphthalene-d8	1146-65-2	E641A	0.1	%	87.9	86.2	88.0	----	----	
Phenanthrene-d10	1517-22-2	E641A	0.1	%	110	114	114	----	----	
<b>Disinfectant By-Products</b>										
Bromate	15541-45-4	E722A	0.00030	mg/L	----	----	<0.00030	----	----	
Chlorate	14866-68-3	E409.CLO3	0.010	mg/L	----	----	0.068	----	----	
<b>Phthalate Esters</b>										
bis(2-Ethylhexyl) phthalate [DEHP]	117-81-7	E655B	1.0	µg/L	----	----	<1.0	----	----	
Butyl benzyl phthalate	85-68-7	E655B	0.40	µg/L	----	----	<0.65 <sup>DLB</sup>	----	----	
Diethyl phthalate	84-66-2	E655B	0.20	µg/L	----	----	<0.20	----	----	
Dimethyl phthalate	131-11-3	E655B	0.20	µg/L	----	----	<0.20	----	----	
Di-n-butyl phthalate	84-74-2	E655B	1.0	µg/L	----	----	<1.0	----	----	
Di-n-octyl phthalate [DNOP]	117-84-0	E655B	0.40	µg/L	----	----	<0.40	----	----	
<b>Semi-Volatile Organics</b>										
Biphenyl	92-52-4	E655B	0.40	µg/L	----	----	<0.40	----	----	
bis(2-Chloroethoxy)methane	111-91-1	E655B	0.40	µg/L	----	----	<0.40	----	----	
bis(2-Chloroethyl) ether	111-44-4	E655B	0.40	µg/L	----	----	<0.40	----	----	
bis(2-Chloroisopropyl) ether	39638-32-9	E655B	0.40	µg/L	----	----	<0.40	----	----	
Bromophenylphenyl ether, 4-	101-55-3	E655B	0.40	µg/L	----	----	<0.40	----	----	
Chloroaniline, 4-	106-47-8	E655B	0.40	µg/L	----	----	<0.40	----	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001 Result	FC2300504-002 Result	FC2300504-003 Result	----- ----	----- ----	
<b>Semi-Volatile Organics</b>										
Chloronaphthalene, 1-	90-13-1	E655B	0.40	µg/L	----	----	<0.40	----	----	
Chloronaphthalene, 2-	91-58-7	E655B	0.40	µg/L	----	----	<0.40	----	----	
Chlorophenylphenyl ether, 4-	7005-72-3	E655B	0.40	µg/L	----	----	<0.40	----	----	
Dichlorobenzene, 1,2-	95-50-1	E655B	0.40	µg/L	----	----	<0.40	----	----	
Dichlorobenzene, 1,3-	541-73-1	E655B	0.40	µg/L	----	----	<0.40	----	----	
Dichlorobenzene, 1,4-	106-46-7	E655B	0.40	µg/L	----	----	<0.40	----	----	
Dichlorobenzidine, 3,3'-	91-94-1	E655B	0.40	µg/L	----	----	<0.40	----	----	
Dinitrotoluene, 2,4-	121-14-2	E655B	0.40	µg/L	----	----	<0.40	----	----	
Dinitrotoluene, 2,6-	606-20-2	E655B	0.40	µg/L	----	----	<0.40	----	----	
Diphenyl amine	122-39-4	E655B	0.40	µg/L	----	----	<0.40	----	----	
Diphenyl ether	101-84-8	E655B	0.40	µg/L	----	----	<0.40	----	----	
Hexachlorobenzene	118-74-1	E655B	0.040	µg/L	----	----	<0.040	----	----	
Hexachlorobutadiene	87-68-3	E655B	0.20	µg/L	----	----	<0.20	----	----	
Hexachlorocyclopentadiene	77-47-4	E655B	0.40	µg/L	----	----	<0.40	----	----	
Hexachloroethane	67-72-1	E655B	0.40	µg/L	----	----	<0.40	----	----	
Indole	120-72-9	E655B	0.40	µg/L	----	----	<0.40	----	----	
Isophorone	78-59-1	E655B	0.40	µg/L	----	----	<0.40	----	----	
Nitroacenaphthene, 5-	602-87-9	E655B	0.40	µg/L	----	----	<0.40	----	----	
Nitrobenzene	98-95-3	E655B	0.40	µg/L	----	----	<0.40	----	----	
Nitrosodi-n-propylamine, N-	621-64-7	E655B	0.40	µg/L	----	----	<0.40	----	----	
Trichlorobenzene, 1,2,3-	87-61-6	E655B	0.40	µg/L	----	----	<0.40	----	----	
Trichlorobenzene, 1,2,4-	120-82-1	E655B	0.40	µg/L	----	----	<0.40	----	----	
Dinitrotoluene, 2,4 + 2,6-	n/a	E655B	0.60	µg/L	----	----	<0.60	----	----	
<b>Semi-Volatile Organics Surrogates</b>										
Fluorobiphenyl, 2-	321-60-8	E655B	1.0	%	----	----	95.5	----	----	
Nitrobenzene-d5	4165-60-0	E655B	1.0	%	----	----	102	----	----	
Terphenyl-d14, p-	1718-51-0	E655B	1.0	%	----	----	117	----	----	
<b>Perfluoroalkyl Substances (PFAS)</b>										
Perfluorooctanesulfonic acid [PFOS]	1763-23-1	E745B	0.010	µg/L	----	----	<0.030 <sup>DLM</sup>	----	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001	FC2300504-002	FC2300504-003	-----	-----	
					Result	Result	Result	----	----	
<b>Perfluoroalkyl Substances (PFAS)</b>										
Perfluorooctanoic acid [PFOA]	335-67-1	E745B	0.010	µg/L	----	----	<0.010	----	----	
<b>Perfluoroalkyl Substances (PFAS) Surrogates</b>										
Perfluorooctanesulfonic acid [13C8-PFOS]	265893-05-6	E745B	1.00	%	----	----	117	----	----	
<b>Chlorinated Phenolics</b>										
Chlorophenol, 2-	95-57-8	E655B	0.30	µg/L	----	----	<0.30	----	----	
Dichlorophenol, 2,4-	120-83-2	E655B	0.30	µg/L	----	----	<0.30	----	----	
Dichlorophenol, 2,6-	87-65-0	E655B	0.50	µg/L	----	----	<0.50	----	----	
Methylphenol, 4-chloro-3-	59-50-7	E655B	0.50	µg/L	----	----	<0.50	----	----	
Pentachlorophenol [PCP]	87-86-5	E655B	0.50	µg/L	----	----	<0.50	----	----	
Tetrachlorophenol, 2,3,4,5-	4901-51-3	E655B	0.50	µg/L	----	----	<0.50	----	----	
Tetrachlorophenol, 2,3,4,6-	58-90-2	E655B	0.50	µg/L	----	----	<0.50	----	----	
Tetrachlorophenol, 2,3,5,6-	935-95-5	E655B	0.50	µg/L	----	----	<0.50	----	----	
Trichlorophenol, 2,3,4-	15950-66-0	E655B	0.50	µg/L	----	----	<0.50	----	----	
Trichlorophenol, 2,3,5-	933-78-8	E655B	0.50	µg/L	----	----	<0.50	----	----	
Trichlorophenol, 2,4,5-	95-95-4	E655B	0.50	µg/L	----	----	<0.50	----	----	
Trichlorophenol, 2,4,6-	88-06-2	E655B	0.50	µg/L	----	----	<0.50	----	----	
<b>Non-Chlorinated Phenolics</b>										
Dimethylphenol, 2,4-	105-67-9	E655B	0.50	µg/L	----	----	<0.50	----	----	
Dinitrophenol, 2,4-	51-28-5	E655B	1.0	µg/L	----	----	<1.0	----	----	
Methylphenol, 2-	95-48-7	E655B	0.50	µg/L	----	----	<0.50	----	----	
Methylphenol, 3+4-	----	E655B	0.50	µg/L	----	----	<0.50	----	----	
Nitrophenol, 2-	88-75-5	E655B	0.50	µg/L	----	----	<0.50	----	----	
Nitrophenol, 4-	100-02-7	E655B	0.50	µg/L	----	----	<2.00 <sup>RRR</sup>	----	----	
Phenol	108-95-2	E655B	0.50	µg/L	----	----	<0.50	----	----	
Phenol, 2-methyl-4,6-dinitro- [DNOC]	534-52-1	E655B	2.0	µg/L	----	----	<2.0	----	----	
Methylphenols, total	----	E655B	0.75	µg/L	----	----	<0.75	----	----	
<b>Phenolics Surrogates</b>										
Tribromophenol, 2,4,6-	118-79-6	E655B	0.50	%	----	----	76.3	----	----	
<b>Herbicides</b>										



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WATER-ENTERING WTP	RAW WATER-LAKE INTAKE	TREATED WATER-LAB SINK	----	----
Client sampling date / time					01-Mar-2023 09:00	01-Mar-2023 09:00	01-Mar-2023 09:00	----	----	
Analyte	CAS Number	Method	LOR	Unit	FC2300504-001 Result	FC2300504-002 Result	FC2300504-003 Result	-----	-----	
<b>Herbicides</b>										
Diquat (ion)	2764-72-9	E723A	0.0010	mg/L	----	----	<0.0010 <sup>SRU</sup>	----	----	
Glyphosate	1071-83-6	E716A	0.00020	mg/L	----	----	<0.00200 <sup>DLI</sup>	----	----	
Paraquat (as dichloride)	1910-42-5	E723A	0.0010	mg/L	----	----	<0.0010 <sup>SRU</sup>	----	----	
<b>Nitrosamines</b>										
Nitrosodimethylamine, N- [NDMA]	62-75-9	E725A	0.034	µg/L	----	----	<0.034	----	----	
<b>Nitrosamines Surrogates</b>										
Nitrosodimethylamine-d6, N-	17829-05-9	E725A	0.10	%	----	----	103	----	----	

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