CERTIFICATE OF ANALYSIS

Work Order	: **CG2200279**	Page	: 1 of 10
Client	: **Lotic Environmental Ltd.**	Laboratory	: Calgary - Environmental
Contact	: Mike Robinson	Account Manager	: Patryk Wojciak
Address	: 2193 Mazur Road Cranbrook BC Canada V1C 6V9	Address	: 2559 29th Street NE Calgary AB Canada T1Y 7B5
Telephone	: 250 426 0528	Telephone	: +1 403 407 1800
Project	: 21NORT01	Date Samples Received	: 11-Jan-2022 09:00
PO	: 15708	Date Analysis Commenced	: 11-Jan-2022
C-O-C number	: ----	Issue Date	: 19-Jan-2022 09:29
Sampler	: Rick Smit		
Site	: 18CANA02		
Quote number	: CG20-NOCL100-0001		
No. of samples received	: 5		
No. of samples analysed	: 5		

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.

Signatories	*Position*	*Laboratory Department*
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Anthony Calero	Team Leader - Inorganics	Metals, Calgary, Alberta
Erin Sanchez		Inorganics, Calgary, Alberta
Hannah Phung	Lab Assistant	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Joshua Stessun	Laboratory Analyst	Organics, Calgary, Alberta
Katarzyna Glinka	Analyst	Inorganics, Calgary, Alberta
Olivia Gu	Lab Analyst	Metals, Calgary, Alberta
Oscar Ruiz	Lab Assistant	Inorganics, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Sara Niroomand		Metals, Calgary, Alberta
Sorina Motea	Laboratory Analyst	Organics, Calgary, 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 Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
CU	colour units (1 CU = 1 mg/L Pt)
mg/L	milligrams per litre
NTU	nephelometric turbidity units
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.

Qualifiers

Qualifier	*Description*
RRV	*Reported result verified by repeat analysis.*

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MICH-13.0	MICH-33.8	AND1	DUPLICATE	FIELD BLANK
					Client sampling date / time	10-Jan-2022 15:15	10-Jan-2022 12:45	10-Jan-2022 14:00	10-Jan-2022 12:00	10-Jan-2022 09:00
						CG2200279-001	CG2200279-002	CG2200279-003	CG2200279-004	CG2200279-005
						Result	Result	Result	Result	Result
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	2.0	mg/L		147	186	139	188	<2.0
alkalinity, bicarbonate (as HCO3)	71-52-3	E290	2.0	mg/L		180	227	169	230	<2.0
alkalinity, carbonate (as CaCO3)	----	E290	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, carbonate (as CO3)	3812-32-6	E290	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, hydroxide (as CaCO3)	----	E290	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, hydroxide (as OH)	14280-30-9	E290	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, phenolphthalein (as CaCO3)	----	E290	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, total (as CaCO3)	----	E290	2.0	mg/L		147	186	139	188	<2.0
colour, true	----	E329	5.0	CU		7.0	<5.0	<5.0	<5.0	<5.0
conductivity	----	E100	2.0	µS/cm		425	680	270	690	<2.0
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		214	334	141	348	<0.60
hardness (as CaCO3), from total Ca/Mg	----	EC100A	0.60	mg/L		213	340	142	351	<0.60
pH	----	E108	0.10	pH units		8.17	8.20	8.23	8.20	5.56
solids, total dissolved [TDS]	----	E162	10	mg/L		287	463	183	468	<10
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0
turbidity	----	E121	0.10	NTU		0.37	0.54	0.10	0.37	<0.10
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.356	0.0421	0.0066	0.127	0.123 RRV
bromide	24959-67-9	E235.Br-L	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
chloride	16887-00-6	E235.Cl	0.50	mg/L		1.00	1.07	<0.50	1.11	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		0.082	0.141	0.215	0.144	<0.020
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L		0.359	0.303	<0.050	0.146	0.143 RRV
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		0.393	1.06	0.161	1.11	<0.0050
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		0.0014	0.0019	0.0010	0.0021	<0.0010
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L		0.0071	0.0013	<0.0010	0.0022	<0.0010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0066	<0.0020	0.0020	0.0040	<0.0020
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		89.2	193	16.7	203	<0.30
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L		1.56	1.27	0.76	1.27	<0.50
carbon, total organic [TOC]	----	E355-L	0.50	mg/L		1.81	1.06	0.95	1.14	<0.50

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MICH-13.0	MICH-33.8	AND1	DUPLICATE	FIELD BLANK
					Client sampling date / time	10-Jan-2022 15:15	10-Jan-2022 12:45	10-Jan-2022 14:00	10-Jan-2022 12:00	10-Jan-2022 09:00
						CG2200279-001	CG2200279-002	CG2200279-003	CG2200279-004	CG2200279-005
						Result	Result	Result	Result	Result
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0162	0.0213	0.0043	0.0142	<0.0030
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	0.00010	<0.00010	0.00011	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00024	0.00032	0.00050	0.00028	<0.00010
barium, total	7440-39-3	E420	0.00010	mg/L		0.117	0.0641	0.0224	0.0637	<0.00010
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		0.010	0.022	<0.010	0.023	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000277	0.0000257	0.0000132	0.0000236	<0.0000050
calcium, total	7440-70-2	E420	0.050	mg/L		55.5	81.2	42.1	83.2	<0.050
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	0.00027	<0.00010	0.00026	<0.00010
copper, total	7440-50-8	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
iron, total	7439-89-6	E420	0.010	mg/L		0.012	0.032	<0.010	0.022	<0.010
lead, total	7439-92-1	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, total	7439-93-2	E420	0.0010	mg/L		0.0072	0.0139	0.0022	0.0142	<0.0010
magnesium, total	7439-95-4	E420	0.100	mg/L		18.1	33.4	9.09	34.7	<0.100
manganese, total	7439-96-5	E420	0.00010	mg/L		0.00056	0.00275	0.00011	0.00229	<0.00010
mercury, total	7439-97-6	E508	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000764	0.000844	0.000735	0.000836	<0.000050
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00080	0.00511	0.00058	0.00537	<0.00050
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.100	mg/L		0.684	0.986	0.252	1.00	<0.100
selenium, total	7782-49-2	E420	0.000050	mg/L		0.00244	0.00526	0.00141	0.00557	<0.000050
silicon, total	7440-21-3	E420	0.10	mg/L		2.29	2.09	1.62	2.07	<0.10
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		5.80	12.9	0.796	13.5	<0.050
strontium, total	7440-24-6	E420	0.00020	mg/L		0.167	0.287	0.141	0.301	<0.00020
sulfur, total	7704-34-9	E420	0.50	mg/L		27.8	66.8	5.52	71.0	<0.50
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	0.000012	0.000040	0.000012	<0.000010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		<0.00030	0.00044	<0.00030	<0.00030	<0.00030

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MICH-13.0	MICH-33.8	AND1	DUPLICATE	FIELD BLANK
					Client sampling date / time	10-Jan-2022 15:15	10-Jan-2022 12:45	10-Jan-2022 14:00	10-Jan-2022 12:00	10-Jan-2022 09:00
						CG2200279-001	CG2200279-002	CG2200279-003	CG2200279-004	CG2200279-005
						Result	Result	Result	Result	Result
Total Metals										
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000786	0.00169	0.000711	0.00179	<0.000010
vanadium, total	7440-62-2	E420	0.00050	mg/L		0.00064	0.00060	0.00072	0.00062	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0019	0.0013	0.0017	0.0014	<0.0010
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	0.00011	<0.00010	0.00011	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00018	0.00023	0.00050	0.00024	<0.00010
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.120	0.0642	0.0225	0.0655	<0.00010
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	0.021	<0.010	0.022	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000228	0.0000229	0.0000086	0.0000229	<0.0000050
calcium, dissolved	7440-70-2	E421	0.050	mg/L		55.5	79.6	41.5	82.9	<0.050
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	0.00018	<0.00010	0.00020	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
iron, dissolved	7439-89-6	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0073	0.0140	0.0022	0.0140	<0.0010
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		18.3	32.9	9.12	34.3	<0.100
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00034	0.00128	<0.00010	0.00141	<0.00010
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000764	0.000876	0.000742	0.000886	<0.000050
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		0.00078	0.00485	<0.00050	0.00514	<0.00050
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.100	mg/L		0.676	0.969	0.238	0.984	<0.100
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.00286	0.00571	0.00156	0.00654	<0.000050
silicon, dissolved	7440-21-3	E421	0.050	mg/L		2.29	2.01	1.58	2.02	<0.050
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		5.77	12.7	0.783	13.5	<0.050

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MICH-13.0	MICH-33.8	AND1	DUPLICATE	FIELD BLANK
					Client sampling date / time	10-Jan-2022 15:15	10-Jan-2022 12:45	10-Jan-2022 14:00	10-Jan-2022 12:00	10-Jan-2022 09:00
						CG2200279-001	CG2200279-002	CG2200279-003	CG2200279-004	CG2200279-005
						Result	Result	Result	Result	Result
Dissolved Metals										
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.176	0.301	0.144	0.315	<0.00020
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		29.3	67.7	5.42	72.5	<0.50
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	0.000011	0.000041	0.000011	<0.000010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000711	0.00152	0.000642	0.00157	<0.000010
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		<0.0010	0.0012	0.0017	0.0013	<0.0010
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	Field	Field
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
chemical oxygen demand [COD]	----	E559-L	10	mg/L		10	42	18	<10	<10
Volatile Organic Compounds										
acetone	67-64-1	E611F	20	µg/L		<20	<20	<20	<20	<20
bromobenzene	108-86-1	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
bromochloromethane	74-97-5	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
bromomethane	74-83-9	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
butylbenzene, n-	104-51-8	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
butylbenzene, sec-	135-98-8	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
butylbenzene, tert-	98-06-6	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
carbon disulfide	75-15-0	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
chlorobenzene	108-90-7	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
chloromethane	74-87-3	E611F	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
chlorotoluene, 2-	95-49-8	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
chlorotoluene, 4-	106-43-4	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
cymene, p-	99-87-6	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dibromo-3-chloropropane, 1,2-	96-12-8	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dibromomethane	74-95-3	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichlorobenzene, 1,2-	95-50-1	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichlorobenzene, 1,3-	541-73-1	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MICH-13.0	MICH-33.8	AND1	DUPLICATE	FIELD BLANK
					Client sampling date / time	10-Jan-2022 15:15	10-Jan-2022 12:45	10-Jan-2022 14:00	10-Jan-2022 12:00	10-Jan-2022 09:00
						CG2200279-001	CG2200279-002	CG2200279-003	CG2200279-004	CG2200279-005
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
dichlorobenzene, 1,4-	106-46-7	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichlorodifluoromethane	75-71-8	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloropropane, 1,2-	78-87-5	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloropropane, 1,3-	142-28-9	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloropropane, 2,2-	594-20-7	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloropropylene, 1,1-	563-58-6	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloropropylene, cis+trans-1,3-	542-75-6	E611F	0.75	µg/L		<0.75	<0.75	<0.75	<0.75	<0.75
dichloropropylene, cis-1,3-	10061-01-5	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
hexachlorobutadiene	87-68-3	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
hexanone, 2-	591-78-6	E611F	20	µg/L		<20	<20	<20	<20	<20
methyl ethyl ketone [MEK]	78-93-3	E611F	20	µg/L		<20	<20	<20	<20	<20
methyl isobutyl ketone [MIBK]	108-10-1	E611F	20	µg/L		<20	<20	<20	<20	<20
propylbenzene, n-	103-65-1	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
tetrachloroethane, 1,1,1,2-	630-20-6	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
tetrachloroethane, 1,1,2,2-	79-34-5	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
trichlorobenzene, 1,2,3-	87-61-6	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
trichlorobenzene, 1,2,4-	120-82-1	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
trichloroethane, 1,1,2-	79-00-5	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
trichlorofluoromethane	75-69-4	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
trichloropropane, 1,2,3-	96-18-4	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Compounds [Drycleaning]										
carbon tetrachloride	56-23-5	E611F	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
chloroethane	75-00-3	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloroethane, 1,1-	75-34-3	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloroethane, 1,2-	107-06-2	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloroethylene, 1,1-	75-35-4	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloroethylene, cis-1,2-	156-59-2	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloroethylene, trans-1,2-	156-60-5	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
dichloromethane	75-09-2	E611F	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
dichloropropylene, trans-1,3-	10061-02-6	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
tetrachloroethylene	127-18-4	E611F	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID: MICH-13.0	MICH-33.8	AND1	DUPLICATE	FIELD BLANK
Client sampling date / time					10-Jan-2022 15:15	10-Jan-2022 12:45	10-Jan-2022 14:00	10-Jan-2022 12:00	10-Jan-2022 09:00
					CG2200279-001	CG2200279-002	CG2200279-003	CG2200279-004	CG2200279-005
					Result	Result	Result	Result	Result
Volatile Organic Compounds [Drycleaning]									
trichloroethane, 1,1,1-	71-55-6	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
trichloroethylene	79-01-6	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
vinyl chloride	75-01-4	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Compounds [Fuels]									
benzene	71-43-2	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
dibromoethane, 1,2-	106-93-4	E611F	0.20	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
ethylbenzene	100-41-4	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
hexane, n-	110-54-3	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
isopropylbenzene	98-82-8	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
methyl-tert-butyl ether [MTBE]	1634-04-4	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
naphthalene	91-20-3	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
styrene	100-42-5	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
toluene	108-88-3	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
trimethylbenzene, 1,2,4-	95-63-6	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
trimethylbenzene, 1,3,5-	108-67-8	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
xylene, m+p-	179601-23-1	E611F	0.40	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
xylene, o-	95-47-6	E611F	0.30	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30
xylenes, total	1330-20-7	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Compounds [THMs]									
bromodichloromethane	75-27-4	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
bromoform	75-25-2	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
chloroform	67-66-3	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
dibromochloromethane	124-48-1	E611F	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Compounds Surrogates									
bromofluorobenzene, 4-	460-00-4	E611F	1.0	%	116	112	110	113	108
difluorobenzene, 1,4-	540-36-3	E611F	1.0	%	104	102	103	102	104
Hydrocarbons									
EPH (C10-C19)	----	E601A	250	µg/L	<250	<250	<250	<250	<250
EPH (C10-C32)	----	E601A	400	µg/L	<400	<400	<400	<400	<400
EPH (C19-C32)	----	E601A	250	µg/L	<250	<250	<250	<250	<250
TEH (C10-C30), BC	----	E601A	250	µg/L	<250	<250	<250	<250	<250

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MICH-13.0	MICH-33.8	AND1	DUPLICATE	FIELD BLANK
					Client sampling date / time	10-Jan-2022 15:15	10-Jan-2022 12:45	10-Jan-2022 14:00	10-Jan-2022 12:00	10-Jan-2022 09:00
						CG2200279-001	CG2200279-002	CG2200279-003	CG2200279-004	CG2200279-005
						Result	Result	Result	Result	Result
Hydrocarbons Surrogates										
bromobenzotrifluoride, 2- (EPH surr)	392-83-6	E601A	1.0	%		98.1	92.6	83.8	87.4	84.6

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

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **CG2200279**	Page	: 1 of 25
Client	: **Lotic Environmental Ltd.**	Laboratory	: Calgary - Environmental
Contact	: Mike Robinson	Account Manager	: Patryk Wojciak
Address	: 2193 Mazur Road Cranbrook BC Canada V1C 6V9	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: 250 426 0528	Telephone	: +1 403 407 1800
Project	: 21NORT01	Date Samples Received	: 11-Jan-2022 09:00
PO	: 15708	Issue Date	: 19-Jan-2022 09:29
C-O-C number	: ----		
Sampler	: Rick Smit		
Site	: 18CANA02		
Quote number	: CG20-NOCL100-0001		
No. of samples received	: 5		
No. of samples analysed	: 5		

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 Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

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

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

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	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) AND1	E559-L	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) DUPLICATE	E559-L	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) FIELD BLANK	E559-L	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MICH-13.0	E559-L	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MICH-33.8	E559-L	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) AND1	E298	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUPLICATE	E298	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	28 days	2 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
FIELD BLANK	E298	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MICH-13.0	E298	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MICH-33.8	E298	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
AND1	E235.Br-L	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
FIELD BLANK	E235.Br-L	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
MICH-13.0	E235.Br-L	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
DUPLICATE	E235.Br-L	10-Jan-2022	----	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
MICH-33.8	E235.Br-L	10-Jan-2022	----	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
AND1	E235.Cl	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE FIELD BLANK	E235.Cl	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE MICH-13.0	E235.Cl	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE DUPLICATE	E235.Cl	10-Jan-2022	----	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE MICH-33.8	E235.Cl	10-Jan-2022	----	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)										
HDPE AND1	E378-U	10-Jan-2022	----	----	----		11-Jan-2022	3 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)										
HDPE DUPLICATE	E378-U	10-Jan-2022	----	----	----		11-Jan-2022	3 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)										
HDPE FIELD BLANK	E378-U	10-Jan-2022	----	----	----		11-Jan-2022	3 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)										
HDPE MICH-13.0	E378-U	10-Jan-2022	----	----	----		11-Jan-2022	3 days	1 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)										
HDPE MICH-33.8	E378-U	10-Jan-2022	----	----	----		11-Jan-2022	3 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE AND1	E235.F	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FIELD BLANK	E235.F	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE MICH-13.0	E235.F	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE DUPLICATE	E235.F	10-Jan-2022	----	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE MICH-33.8	E235.F	10-Jan-2022	----	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE AND1	E235.NO3-L	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FIELD BLANK	E235.NO3-L	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE MICH-13.0	E235.NO3-L	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE DUPLICATE	E235.NO3-L	10-Jan-2022	----	----	----		13-Jan-2022	3 days	3 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE MICH-33.8	E235.NO3-L	10-Jan-2022	----	----	----		13-Jan-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE AND1	E235.NO2-L	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FIELD BLANK	E235.NO2-L	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE MICH-13.0	E235.NO2-L	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE DUPLICATE	E235.NO2-L	10-Jan-2022	----	----	----		13-Jan-2022	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE MICH-33.8	E235.NO2-L	10-Jan-2022	----	----	----		13-Jan-2022	3 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE AND1	E235.SO4	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FIELD BLANK	E235.SO4	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE MICH-13.0	E235.SO4	10-Jan-2022	----	----	----		12-Jan-2022	28 days	2 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
DUPLICATE	E235.SO4	10-Jan-2022	----	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
MICH-33.8	E235.SO4	10-Jan-2022	----	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
AND1	E318	10-Jan-2022	13-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
DUPLICATE	E318	10-Jan-2022	13-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
FIELD BLANK	E318	10-Jan-2022	13-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MICH-13.0	E318	10-Jan-2022	13-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MICH-33.8	E318	10-Jan-2022	13-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
AND1	E372-U	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
DUPLICATE	E372-U	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	28 days	2 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
FIELD BLANK	E372-U	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
MICH-13.0	E372-U	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	28 days	2 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
MICH-33.8	E372-U	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
AND1	E509	10-Jan-2022	17-Jan-2022	----	----		17-Jan-2022	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
DUPLICATE	E509	10-Jan-2022	17-Jan-2022	----	----		17-Jan-2022	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
FIELD BLANK	E509	10-Jan-2022	17-Jan-2022	----	----		17-Jan-2022	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MICH-13.0	E509	10-Jan-2022	17-Jan-2022	----	----		17-Jan-2022	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MICH-33.8	E509	10-Jan-2022	17-Jan-2022	----	----		17-Jan-2022	28 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
AND1	E421	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	180 days	2 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) DUPLICATE	E421	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) FIELD BLANK	E421	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MICH-13.0	E421	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MICH-33.8	E421	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	180 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) AND1	E601A	10-Jan-2022	12-Jan-2022	14 days	2 days	✓	13-Jan-2022	40 days	1 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) DUPLICATE	E601A	10-Jan-2022	12-Jan-2022	14 days	2 days	✓	13-Jan-2022	40 days	1 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) FIELD BLANK	E601A	10-Jan-2022	12-Jan-2022	14 days	2 days	✓	13-Jan-2022	40 days	1 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) MICH-13.0	E601A	10-Jan-2022	12-Jan-2022	14 days	2 days	✓	13-Jan-2022	40 days	1 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) MICH-33.8	E601A	10-Jan-2022	12-Jan-2022	14 days	2 days	✓	13-Jan-2022	40 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) AND1	E358-L	10-Jan-2022	11-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) DUPLICATE	E358-L	10-Jan-2022	11-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FIELD BLANK	E358-L	10-Jan-2022	11-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) MICH-13.0	E358-L	10-Jan-2022	11-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) MICH-33.8	E358-L	10-Jan-2022	11-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) AND1	E355-L	10-Jan-2022	11-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) DUPLICATE	E355-L	10-Jan-2022	11-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FIELD BLANK	E355-L	10-Jan-2022	11-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) MICH-13.0	E355-L	10-Jan-2022	11-Jan-2022	----	----		13-Jan-2022	28 days	3 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) MICH-33.8	E355-L	10-Jan-2022	11-Jan-2022	----	----		13-Jan-2022	28 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE AND1	E290	10-Jan-2022	----	----	----		11-Jan-2022	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE DUPLICATE	E290	10-Jan-2022	----	----	----		11-Jan-2022	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FIELD BLANK	E290	10-Jan-2022	----	----	----		11-Jan-2022	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE MICH-13.0	E290	10-Jan-2022	----	----	----		11-Jan-2022	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE MICH-33.8	E290	10-Jan-2022	----	----	----		11-Jan-2022	14 days	1 days	✓
Physical Tests : Colour (True) by Spectrometer										
HDPE AND1	E329	10-Jan-2022	----	----	----		11-Jan-2022	3 days	1 days	✓
Physical Tests : Colour (True) by Spectrometer										
HDPE DUPLICATE	E329	10-Jan-2022	----	----	----		11-Jan-2022	3 days	1 days	✓
Physical Tests : Colour (True) by Spectrometer										
HDPE FIELD BLANK	E329	10-Jan-2022	----	----	----		11-Jan-2022	3 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Colour (True) by Spectrometer										
HDPE MICH-13.0	E329	10-Jan-2022	----	----	----		11-Jan-2022	3 days	1 days	✓
Physical Tests : Colour (True) by Spectrometer										
HDPE MICH-33.8	E329	10-Jan-2022	----	----	----		11-Jan-2022	3 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE AND1	E100	10-Jan-2022	----	----	----		11-Jan-2022	28 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE DUPLICATE	E100	10-Jan-2022	----	----	----		11-Jan-2022	28 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE FIELD BLANK	E100	10-Jan-2022	----	----	----		11-Jan-2022	28 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE MICH-13.0	E100	10-Jan-2022	----	----	----		11-Jan-2022	28 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE MICH-33.8	E100	10-Jan-2022	----	----	----		11-Jan-2022	28 days	1 days	✓
Physical Tests : pH by Meter										
HDPE MICH-13.0	E108	10-Jan-2022	----	----	----		11-Jan-2022	0.25 hrs	25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE AND1	E108	10-Jan-2022	----	----	----		11-Jan-2022	0.25 hrs	26 hrs	× EHTR-FM

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	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE MICH-33.8	E108	10-Jan-2022	----	----	----		11-Jan-2022	0.25 hrs	27 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE DUPLICATE	E108	10-Jan-2022	----	----	----		11-Jan-2022	0.25 hrs	28 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE FIELD BLANK	E108	10-Jan-2022	----	----	----		11-Jan-2022	0.25 hrs	31 hrs	× EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE AND1	E162	10-Jan-2022	----	----	----		16-Jan-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE DUPLICATE	E162	10-Jan-2022	----	----	----		16-Jan-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE FIELD BLANK	E162	10-Jan-2022	----	----	----		16-Jan-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE MICH-13.0	E162	10-Jan-2022	----	----	----		16-Jan-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE MICH-33.8	E162	10-Jan-2022	----	----	----		16-Jan-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE AND1	E160	10-Jan-2022	----	----	----		16-Jan-2022	7 days	6 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE DUPLICATE	E160	10-Jan-2022	----	----	----		16-Jan-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FIELD BLANK	E160	10-Jan-2022	----	----	----		16-Jan-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE MICH-13.0	E160	10-Jan-2022	----	----	----		16-Jan-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE MICH-33.8	E160	10-Jan-2022	----	----	----		16-Jan-2022	7 days	6 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE AND1	E121	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE DUPLICATE	E121	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE FIELD BLANK	E121	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE MICH-13.0	E121	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE MICH-33.8	E121	10-Jan-2022	----	----	----		12-Jan-2022	3 days	2 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) AND1	E508	10-Jan-2022	----	----	----		17-Jan-2022	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) DUPLICATE	E508	10-Jan-2022	----	----	----		17-Jan-2022	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) FIELD BLANK	E508	10-Jan-2022	----	----	----		17-Jan-2022	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) MICH-13.0	E508	10-Jan-2022	----	----	----		17-Jan-2022	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) MICH-33.8	E508	10-Jan-2022	----	----	----		17-Jan-2022	28 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) AND1	E420	10-Jan-2022	----	----	----		12-Jan-2022	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) DUPLICATE	E420	10-Jan-2022	----	----	----		12-Jan-2022	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) FIELD BLANK	E420	10-Jan-2022	----	----	----		12-Jan-2022	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) MICH-13.0	E420	10-Jan-2022	----	----	----		12-Jan-2022	180 days	2 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) MICH-33.8	E420	10-Jan-2022	----	----	----		12-Jan-2022	180 days	2 days	✓
Volatile Organic Compounds : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) AND1	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	14 days	2 days	✓
Volatile Organic Compounds : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUPLICATE	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	14 days	2 days	✓
Volatile Organic Compounds : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) FIELD BLANK	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	14 days	2 days	✓
Volatile Organic Compounds : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MICH-13.0	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	14 days	2 days	✓
Volatile Organic Compounds : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MICH-33.8	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	14 days	2 days	✓
Volatile Organic Compounds [Drycleaning] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) AND1	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [Drycleaning] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUPLICATE	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [Drycleaning] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) FIELD BLANK	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	

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	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Volatile Organic Compounds [Drycleaning] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MICH-13.0	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [Drycleaning] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MICH-33.8	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [Fuels] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) AND1	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [Fuels] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUPLICATE	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [Fuels] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) FIELD BLANK	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [Fuels] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MICH-13.0	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [Fuels] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MICH-33.8	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [THMs] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) AND1	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [THMs] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUPLICATE	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	

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	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Volatile Organic Compounds [THMs] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
FIELD BLANK	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [THMs] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
MICH-13.0	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	
Volatile Organic Compounds [THMs] : VOCs (Full List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
MICH-33.8	E611F	10-Jan-2022	12-Jan-2022	----	----		12-Jan-2022	----	----	

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

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			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	384633	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	385280	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	385404	2	22	9.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	385067	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	385401	2	23	8.7	5.0	✓
Colour (True) by Spectrometer	E329	384762	1	5	20.0	5.0	✓
Conductivity in Water	E100	384632	1	7	14.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	388225	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	385032	1	13	7.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	384675	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	384660	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	385402	2	23	8.7	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	385405	2	23	8.7	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	385406	2	23	8.7	5.0	✓
pH by Meter	E108	384631	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	385403	2	22	9.0	5.0	✓
TDS by Gravimetry	E162	385985	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	385142	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	388224	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	385029	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	384676	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	384639	2	21	9.5	5.0	✓
TSS by Gravimetry	E160	386107	1	7	14.2	5.0	✓
Turbidity by Nephelometry	E121	385122	2	24	8.3	5.0	✓
VOCs (Full List) by Headspace GC-MS	E611F	385580	1	5	20.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	384633	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	385280	1	20	5.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	385618	1	5	20.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	385404	2	22	9.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	385067	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	385401	2	23	8.7	5.0	✓
Colour (True) by Spectrometer	E329	384762	1	5	20.0	5.0	✓
Conductivity in Water	E100	384632	1	7	14.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	388225	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	385032	1	13	7.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	384675	1	5	20.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	384660	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	385402	2	23	8.7	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	385405	2	23	8.7	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	385406	2	23	8.7	5.0	✓
pH by Meter	E108	384631	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	385403	2	22	9.0	5.0	✓
TDS by Gravimetry	E162	385985	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	385142	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	388224	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	385029	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	384676	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	384639	2	21	9.5	5.0	✓
TSS by Gravimetry	E160	386107	1	7	14.2	5.0	✓
Turbidity by Nephelometry	E121	385122	2	24	8.3	5.0	✓
VOCs (Full List) by Headspace GC-MS	E611F	385580	1	5	20.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	384633	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	385280	1	20	5.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	385618	1	5	20.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	385404	2	22	9.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	385067	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	385401	2	23	8.7	5.0	✓
Colour (True) by Spectrometer	E329	384762	1	5	20.0	5.0	✓
Conductivity in Water	E100	384632	1	7	14.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	388225	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	385032	1	13	7.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	384675	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	384660	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	385402	2	23	8.7	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	385405	2	23	8.7	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	385406	2	23	8.7	5.0	✓
Sulfate in Water by IC	E235.SO4	385403	2	22	9.0	5.0	✓
TDS by Gravimetry	E162	385985	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	385142	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	388224	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	385029	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	384676	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	384639	2	21	9.5	5.0	✓
TSS by Gravimetry	E160	386107	1	7	14.2	5.0	✓
Turbidity by Nephelometry	E121	385122	2	24	8.3	5.0	✓
VOCs (Full List) by Headspace GC-MS	E611F	385580	1	5	20.0	5.0	✓

Matrix: **Water**

Evaluation: ✗ = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	385280	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	385404	2	22	9.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	385067	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	385401	2	23	8.7	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	388225	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	385032	1	13	7.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	384675	1	5	20.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	384660	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	385402	2	23	8.7	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	385405	2	23	8.7	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	385406	2	23	8.7	5.0	✓
Sulfate in Water by IC	E235.SO4	385403	2	22	9.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	385142	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	388224	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	385029	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	384676	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	384639	1	21	4.7	5.0	✗
VOCs (Full List) by Headspace GC-MS	E611F	385580	1	5	20.0	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
Conductivity in Water	E100 Calgary - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Calgary - Environmental	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.
Turbidity by Nephelometry	E121 Calgary - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160 Calgary - Environmental	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 Calgary - Environmental	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.
Bromide in Water by IC (Low Level)	E235.Br-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Calgary - Environmental	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 Calgary - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Calgary - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Calgary - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Colour (True) by Spectrometer	E329 Calgary - Environmental	Water	APHA 2120 C (mod)	Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Calgary - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Calgary - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U Calgary - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U Calgary - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a flow analyzer on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total Metals in Water by CRC ICPMS	E420 Calgary - Environmental	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.
Dissolved Metals in Water by CRC ICPMS	E421 Calgary - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 Calgary - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Calgary - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L Calgary - Environmental	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.
BC PHCs - EPH by GC-FID	E601A Calgary - Environmental	Water	BC MOE Lab Manual	Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions.
VOCs (Full List) by Headspace GC-MS	E611F Calgary - Environmental	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
Dissolved Hardness (Calculated)	EC100 Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A Calgary - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Calgary - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 Calgary - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355 Calgary - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Calgary - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Calgary - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Calgary - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
VOCs Preparation for Headspace Analysis	EP581 Calgary - Environmental	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into the GC/MS-FID system.
PHCs and PAHs Hexane Extraction	EP601 Calgary - Environmental	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.

QUALITY CONTROL REPORT

Work Order	: **CG2200279**	Page	: 1 of 26
Client	: Lotic Environmental Ltd.	Laboratory	: Calgary - Environmental
Contact	: Mike Robinson	Account Manager	: Patryk Wojciak
Address	: 652 F Sparwood Drive Sparwood BC Canada V0B 2G0	Address	: 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5
Telephone	: 250 426 0528	Telephone	: +1 403 407 1800
Project	: 21NORT01	Date Samples Received	: 11-Jan-2022 09:00
PO	: 15708	Date Analysis Commenced	: 11-Jan-2022
C-O-C number	: ----	Issue Date	: 19-Jan-2022 09:29
Sampler	: Rick Smit		
Site	: 18CANA02		
Quote number	: CG20-NOCL100-0001		
No. of samples received	: 5		
No. of samples analysed	: 5		

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 Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

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.

Signatories	*Position*	*Laboratory Department*
Anthony Calero	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Anthony Calero	Team Leader - Inorganics	Metals, Calgary, Alberta
Erin Sanchez		Inorganics, Calgary, Alberta
Hannah Phung	Lab Assistant	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Metals, Calgary, Alberta
Joshua Stessun	Laboratory Analyst	Organics, Calgary, Alberta
Katarzyna Glinka	Analyst	Inorganics, Calgary, Alberta
Olivia Gu	Lab Analyst	Metals, Calgary, Alberta
Oscar Ruiz	Lab Assistant	Inorganics, Calgary, Alberta
Parker Sgarbossa	Laboratory Analyst	Inorganics, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta
Sara Niroomand		Inorganics, Calgary, Alberta
Sara Niroomand		Metals, Calgary, Alberta
Sorina Motea	Laboratory Analyst	Organics, Calgary, 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 Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

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*
Physical Tests (QC Lot: 384631)											
CG2200278-001	Anonymous	pH	----	E108	0.10	pH units	7.73	7.75	0.258%	4%	----
Physical Tests (QC Lot: 384632)											
CG2200278-001	Anonymous	conductivity	----	E100	2.0	µS/cm	743	746	0.403%	10%	----
Physical Tests (QC Lot: 384633)											
CG2200278-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	448	439	1.96%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	448	439	1.96%	20%	----
Physical Tests (QC Lot: 384762)											
CG2200279-001	MICH-13.0	colour, true	----	E329	5.0	CU	7.0	8.5	1.5	Diff <2x LOR	----
Physical Tests (QC Lot: 385122)											
CG2200242-001	Anonymous	turbidity	----	E121	0.10	NTU	1.24	1.21	0.03	Diff <2x LOR	----
Physical Tests (QC Lot: 385202)											
CG2200279-001	MICH-13.0	turbidity	----	E121	0.10	NTU	0.37	0.39	0.02	Diff <2x LOR	----
Physical Tests (QC Lot: 385985)											
CG2200276-002	Anonymous	solids, total dissolved [TDS]	----	E162	40	mg/L	2990	3080	2.84%	20%	----
Physical Tests (QC Lot: 386107)											
CG2200279-001	MICH-13.0	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 384639)											
CG2200275-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 384640)											
CG2200279-005	FIELD BLANK	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 384660)											
CG2200273-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0026	0.0020	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 385142)											
CG2200238-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	4.00	mg/L	52.3	53.4	2.03%	20%	----
Anions and Nutrients (QC Lot: 385280)											
CG2200275-008	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0250	mg/L	1.08	1.06	2.02%	20%	----
Anions and Nutrients (QC Lot: 385401)											
CG2200279-001	MICH-13.0	chloride	16887-00-6	E235.Cl	0.50	mg/L	1.00	0.94	0.06	Diff <2x LOR	----

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*
Anions and Nutrients (QC Lot: 385402)											
CG2200279-001	MICH-13.0	fluoride	16984-48-8	E235.F	0.020	mg/L	0.082	0.081	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 385403)											
CG2200279-001	MICH-13.0	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	89.2	89.4	0.199%	20%	----
Anions and Nutrients (QC Lot: 385404)											
CG2200279-001	MICH-13.0	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 385405)											
CG2200279-001	MICH-13.0	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.393	0.392	0.204%	20%	----
Anions and Nutrients (QC Lot: 385406)											
CG2200279-001	MICH-13.0	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0014	0.0010	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 386076)											
CG2200279-002	MICH-33.8	chloride	16887-00-6	E235.Cl	0.50	mg/L	1.07	1.10	0.03	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 386077)											
CG2200279-002	MICH-33.8	fluoride	16984-48-8	E235.F	0.020	mg/L	0.141	0.143	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 386078)											
CG2200279-002	MICH-33.8	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	193	202	4.38%	20%	----
Anions and Nutrients (QC Lot: 386079)											
CG2200279-002	MICH-33.8	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 386080)											
CG2200279-002	MICH-33.8	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	1.06	1.11	4.55%	20%	----
Anions and Nutrients (QC Lot: 386081)											
CG2200279-002	MICH-33.8	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0019	0.0022	0.0003	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 384675)											
CG2200279-005	FIELD BLANK	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 384676)											
CG2200279-005	FIELD BLANK	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Metals (QC Lot: 385029)											
CG2200235-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0076	0.0084	0.0009	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00172	0.00176	1.84%	20%	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0278	0.0283	1.71%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.063	0.064	0.0009	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000089	0.0000110	0.0000021	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	246	243	1.26%	20%	----

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*
Total Metals (QC Lot: 385029) - continued											
CG2200235-001	Anonymous	chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00016	0.00016	0.000005	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00226	0.00273	0.00048	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.119	0.122	2.10%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000082	0.000090	0.000007	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0037	0.0035	0.0002	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	45.4	46.3	1.86%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.252	0.254	0.930%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00693	0.00687	0.846%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.050	mg/L	1.72	1.70	1.59%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	1.33	1.36	2.13%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	0.00112	0.00104	7.55%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	8.62	8.59	0.404%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	13.7	13.8	0.526%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	1.89	1.90	0.226%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	244	248	1.80%	20%	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00031	<0.00030	0.00001	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000035	0.000037	0.000002	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00218	0.00225	0.00007	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 388224)											
CG2200279-001	MICH-13.0	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 385032)											
CG2200242-014	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00050	mg/L	0.0113	0.0106	5.66%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.050	mg/L	0.053	0.054	0.0005	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 385032) - continued											
CG2200242-014	Anonymous	cadmium, dissolved	7440-43-9	E421	0.0000250	mg/L	0.000640	0.000594	7.45%	20%	----
		calcium, dissolved	7440-70-2	E421	0.250	mg/L	306	287	6.14%	20%	----
		chromium, dissolved	7440-47-3	E421	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00050	mg/L	0.0342	0.0329	3.76%	20%	----
		copper, dissolved	7440-50-8	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.050	mg/L	0.084	0.080	0.003	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0050	mg/L	0.0863	0.0828	4.15%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0250	mg/L	170	166	2.79%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00050	mg/L	0.878	0.841	4.39%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000250	mg/L	0.00213	0.00203	0.000103	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00250	mg/L	0.114	0.110	3.94%	20%	----
		phosphorus, dissolved	7723-14-0	E421	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.250	mg/L	4.84	4.55	6.18%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000250	mg/L	0.00143	0.00152	0.000099	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.250	mg/L	3.04	3.04	0.298%	20%	----
		silver, dissolved	7440-22-4	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.250	mg/L	7.25	6.64	8.84%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00100	mg/L	0.366	0.354	3.48%	20%	----
		sulfur, dissolved	7704-34-9	E421	2.50	mg/L	303	311	2.57%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000050	mg/L	0.000146	0.000114	0.000031	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00150	mg/L	<0.00150	<0.00150	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000050	mg/L	0.0149	0.0148	1.01%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0050	mg/L	0.0529	0.0505	4.63%	20%	----
		zirconium, dissolved	7440-67-7	E421	0.00150	mg/L	<0.00150	<0.00150	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 388225)											
CG2200279-001	MICH-13.0	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 385067)											
CG2200238-001	Anonymous	chemical oxygen demand [COD]	----	E559-L	10	mg/L	192	218	12.2%	20%	----
Volatile Organic Compounds (QC Lot: 385580)											
CG2200279-001	MICH-13.0	acetone	67-64-1	E611F	20	µg/L	<20	<20	0	Diff <2x LOR	----
		benzene	71-43-2	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		bromobenzene	108-86-1	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

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*
Volatile Organic Compounds (QC Lot: 385580) - continued											
CG2200279-001	MICH-13.0	bromochloromethane	74-97-5	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		bromodichloromethane	75-27-4	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		bromoform	75-25-2	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		bromomethane	74-83-9	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		butylbenzene, n-	104-51-8	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		butylbenzene, sec-	135-98-8	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		butylbenzene, tert-	98-06-6	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		carbon disulfide	75-15-0	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		carbon tetrachloride	56-23-5	E611F	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		chlorobenzene	108-90-7	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		chloroethane	75-00-3	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		chloroform	67-66-3	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		chloromethane	74-87-3	E611F	2.0	µg/L	<2.0	<2.0	0	Diff <2x LOR	----
		chlorotoluene, 2-	95-49-8	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		chlorotoluene, 4-	106-43-4	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		cymene, p-	99-87-6	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dibromo-3-chloropropane, 1,2-	96-12-8	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dibromochloromethane	124-48-1	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dibromoethane, 1,2-	106-93-4	E611F	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		dibromomethane	74-95-3	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichlorobenzene, 1,2-	95-50-1	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichlorobenzene, 1,3-	541-73-1	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichlorobenzene, 1,4-	106-46-7	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichlorodifluoromethane	75-71-8	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloroethane, 1,1-	75-34-3	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloroethane, 1,2-	107-06-2	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloroethylene, 1,1-	75-35-4	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloroethylene, cis-1,2-	156-59-2	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloroethylene, trans-1,2-	156-60-5	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloromethane	75-09-2	E611F	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		dichloropropane, 1,2-	78-87-5	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloropropane, 1,3-	142-28-9	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloropropane, 2,2-	594-20-7	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloropropylene, 1,1-	563-58-6	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloropropylene, cis-1,3-	10061-01-5	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

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*
Volatile Organic Compounds (QC Lot: 385580) - continued											
CG2200279-001	MICH-13.0	dichloropropylene, trans-1,3-	10061-02-6	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		ethylbenzene	100-41-4	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		hexachlorobutadiene	87-68-3	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		hexane, n-	110-54-3	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		hexanone, 2-	591-78-6	E611F	20	µg/L	<20	<20	0	Diff <2x LOR	----
		isopropylbenzene	98-82-8	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		methyl ethyl ketone [MEK]	78-93-3	E611F	20	µg/L	<20	<20	0	Diff <2x LOR	----
		methyl isobutyl ketone [MIBK]	108-10-1	E611F	20	µg/L	<20	<20	0	Diff <2x LOR	----
		methyl-tert-butyl ether [MTBE]	1634-04-4	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		naphthalene	91-20-3	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		propylbenzene, n-	103-65-1	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		styrene	100-42-5	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		tetrachloroethane, 1,1,1,2-	630-20-6	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		tetrachloroethane, 1,1,2,2-	79-34-5	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		tetrachloroethylene	127-18-4	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		toluene	108-88-3	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trichlorobenzene, 1,2,3-	87-61-6	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trichlorobenzene, 1,2,4-	120-82-1	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trichloroethane, 1,1,1-	71-55-6	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trichloroethane, 1,1,2-	79-00-5	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trichloroethylene	79-01-6	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trichlorofluoromethane	75-69-4	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trichloropropane, 1,2,3-	96-18-4	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trimethylbenzene, 1,2,4-	95-63-6	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trimethylbenzene, 1,3,5-	108-67-8	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		vinyl chloride	75-01-4	E611F	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		xylene, m+p-	179601-23-1	E611F	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		xylene, o-	95-47-6	E611F	0.30	µg/L	<0.30	<0.30	0	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
Physical Tests (QCLot: 384632)						
conductivity	----	E100	1	µS/cm	1.0	----
Physical Tests (QCLot: 384633)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 384762)						
colour, true	----	E329	5	CU	<5.0	----
Physical Tests (QCLot: 385122)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 385202)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 385985)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 386107)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 384639)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 384640)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 384660)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 385142)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 385280)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 385401)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 385402)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 385403)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 385404)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 385405)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 385406)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 386076)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 386077)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 386078)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 386079)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 386080)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 386081)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 384675)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 384676)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 385029)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 385029) - continued						
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 388224)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 385032)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 385032) - continued						
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 388225)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Aggregate Organics (QCLot: 385067)						
chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	----
Volatile Organic Compounds (QCLot: 385580)						
acetone	67-64-1	E611F	20	µg/L	<20	----
benzene	71-43-2	E611F	0.5	µg/L	<0.50	----
bromobenzene	108-86-1	E611F	0.5	µg/L	<0.50	----
bromochloromethane	74-97-5	E611F	0.5	µg/L	<0.50	----
bromodichloromethane	75-27-4	E611F	0.5	µg/L	<0.50	----
bromoform	75-25-2	E611F	0.5	µg/L	<0.50	----
bromomethane	74-83-9	E611F	0.5	µg/L	<0.50	----
butylbenzene, n-	104-51-8	E611F	0.5	µg/L	<0.50	----
butylbenzene, sec-	135-98-8	E611F	0.5	µg/L	<0.50	----
butylbenzene, tert-	98-06-6	E611F	0.5	µg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 385580) - continued						
carbon disulfide	75-15-0	E611F	0.5	µg/L	<0.50	----
carbon tetrachloride	56-23-5	E611F	0.2	µg/L	<0.20	----
chlorobenzene	108-90-7	E611F	0.5	µg/L	<0.50	----
chloroethane	75-00-3	E611F	0.5	µg/L	<0.50	----
chloroform	67-66-3	E611F	0.5	µg/L	<0.50	----
chloromethane	74-87-3	E611F	2	µg/L	<2.0	----
chlorotoluene, 2-	95-49-8	E611F	0.5	µg/L	<0.50	----
chlorotoluene, 4-	106-43-4	E611F	0.5	µg/L	<0.50	----
cymene, p-	99-87-6	E611F	0.5	µg/L	<0.50	----
dibromo-3-chloropropane, 1,2-	96-12-8	E611F	0.5	µg/L	<0.50	----
dibromochloromethane	124-48-1	E611F	0.5	µg/L	<0.50	----
dibromoethane, 1,2-	106-93-4	E611F	0.2	µg/L	<0.20	----
dibromomethane	74-95-3	E611F	0.5	µg/L	<0.50	----
dichlorobenzene, 1,2-	95-50-1	E611F	0.5	µg/L	<0.50	----
dichlorobenzene, 1,3-	541-73-1	E611F	0.5	µg/L	<0.50	----
dichlorobenzene, 1,4-	106-46-7	E611F	0.5	µg/L	<0.50	----
dichlorodifluoromethane	75-71-8	E611F	0.5	µg/L	<0.50	----
dichloroethane, 1,1-	75-34-3	E611F	0.5	µg/L	<0.50	----
dichloroethane, 1,2-	107-06-2	E611F	0.5	µg/L	<0.50	----
dichloroethylene, 1,1-	75-35-4	E611F	0.5	µg/L	<0.50	----
dichloroethylene, cis-1,2-	156-59-2	E611F	0.5	µg/L	<0.50	----
dichloroethylene, trans-1,2-	156-60-5	E611F	0.5	µg/L	<0.50	----
dichloromethane	75-09-2	E611F	1	µg/L	<1.0	----
dichloropropane, 1,2-	78-87-5	E611F	0.5	µg/L	<0.50	----
dichloropropane, 1,3-	142-28-9	E611F	0.5	µg/L	<0.50	----
dichloropropane, 2,2-	594-20-7	E611F	0.5	µg/L	<0.50	----
dichloropropylene, 1,1-	563-58-6	E611F	0.5	µg/L	<0.50	----
dichloropropylene, cis-1,3-	10061-01-5	E611F	0.5	µg/L	<0.50	----
dichloropropylene, trans-1,3-	10061-02-6	E611F	0.5	µg/L	<0.50	----
ethylbenzene	100-41-4	E611F	0.5	µg/L	<0.50	----
hexachlorobutadiene	87-68-3	E611F	0.5	µg/L	<0.50	----
hexane, n-	110-54-3	E611F	0.5	µg/L	<0.50	----
hexanone, 2-	591-78-6	E611F	20	µg/L	<20	----
isopropylbenzene	98-82-8	E611F	0.5	µg/L	<0.50	----
methyl ethyl ketone [MEK]	78-93-3	E611F	20	µg/L	<20	----
methyl isobutyl ketone [MIBK]	108-10-1	E611F	20	µg/L	<20	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 385580) - continued						
methyl-tert-butyl ether [MTBE]	1634-04-4	E611F	0.5	µg/L	<0.50	----
naphthalene	91-20-3	E611F	0.5	µg/L	<0.50	----
propylbenzene, n-	103-65-1	E611F	0.5	µg/L	<0.50	----
styrene	100-42-5	E611F	0.5	µg/L	<0.50	----
tetrachloroethane, 1,1,1,2-	630-20-6	E611F	0.5	µg/L	<0.50	----
tetrachloroethane, 1,1,2,2-	79-34-5	E611F	0.5	µg/L	<0.50	----
tetrachloroethylene	127-18-4	E611F	0.5	µg/L	<0.50	----
toluene	108-88-3	E611F	0.5	µg/L	<0.50	----
trichlorobenzene, 1,2,3-	87-61-6	E611F	0.5	µg/L	<0.50	----
trichlorobenzene, 1,2,4-	120-82-1	E611F	0.5	µg/L	<0.50	----
trichloroethane, 1,1,1-	71-55-6	E611F	0.5	µg/L	<0.50	----
trichloroethane, 1,1,2-	79-00-5	E611F	0.5	µg/L	<0.50	----
trichloroethylene	79-01-6	E611F	0.5	µg/L	<0.50	----
trichlorofluoromethane	75-69-4	E611F	0.5	µg/L	<0.50	----
trichloropropane, 1,2,3-	96-18-4	E611F	0.5	µg/L	<0.50	----
trimethylbenzene, 1,2,4-	95-63-6	E611F	0.5	µg/L	<0.50	----
trimethylbenzene, 1,3,5-	108-67-8	E611F	0.5	µg/L	<0.50	----
vinyl chloride	75-01-4	E611F	0.5	µg/L	<0.50	----
xylene, m+p-	179601-23-1	E611F	0.4	µg/L	<0.40	----
xylene, o-	95-47-6	E611F	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 385618)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
TEH (C10-C30), BC	----	E601A	250	µg/L	<250	----

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
Physical Tests (QCLot: 384631)									
pH	----	E108	----	pH units	7 pH units	99.8	98.6	101	----
Physical Tests (QCLot: 384632)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.9	90.0	110	----
Physical Tests (QCLot: 384633)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	105	85.0	115	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	102	85.0	115	----
Physical Tests (QCLot: 384762)									
colour, true	----	E329	5	CU	100 CU	98.0	85.0	115	----
Physical Tests (QCLot: 385122)									
turbidity	----	E121	0.1	NTU	200 NTU	97.4	85.0	115	----
Physical Tests (QCLot: 385202)									
turbidity	----	E121	0.1	NTU	200 NTU	96.5	85.0	115	----
Physical Tests (QCLot: 385985)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	97.0	85.0	115	----
Physical Tests (QCLot: 386107)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.1	85.0	115	----
Anions and Nutrients (QCLot: 384639)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	96.0	80.0	120	----
Anions and Nutrients (QCLot: 384640)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	8.02 mg/L	94.0	80.0	120	----
Anions and Nutrients (QCLot: 384660)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.02 mg/L	111	80.0	120	----
Anions and Nutrients (QCLot: 385142)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	93.8	75.0	125	----
Anions and Nutrients (QCLot: 385280)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 385401)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 385402)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	93.0	90.0	110	----
Anions and Nutrients (QCLot: 385403)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	105	90.0	110	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 385404)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	94.5	85.0	115	----
Anions and Nutrients (QCLot: 385405)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 385406)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 386076)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 386077)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.2	90.0	110	----
Anions and Nutrients (QCLot: 386078)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 386079)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	94.9	85.0	115	----
Anions and Nutrients (QCLot: 386080)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 386081)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	104	90.0	110	----
Organic / Inorganic Carbon (QCLot: 384675)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	106	80.0	120	----
Organic / Inorganic Carbon (QCLot: 384676)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	112	80.0	120	----
Total Metals (QCLot: 385029)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	100	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	110	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	98.8	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	98.3	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	93.0	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.5	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	100	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.8	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	117	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 385029) - continued									
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	100.0	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	107	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	105	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	106	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	103	70.0	130	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	96.2	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	98.8	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	96.6	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	93.3	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.5	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	97.8	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	98.6	80.0	120	----
Total Metals (QCLot: 388224)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 385032)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	98.9	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	114	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	91.5	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	99.1	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Dissolved Metals (QCLot: 385032) - continued									
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	118	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	104	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	104	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	107	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	110	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	107	70.0	130	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.2	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	99.2	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	108	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	93.7	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	105	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	106	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	107	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	94.0	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.7	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	93.2	80.0	120	----
Aggregate Organics (QCLot: 385067)									
chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	110	85.0	115	----
Volatile Organic Compounds (QCLot: 385580)									
acetone	67-64-1	E611F	20	µg/L	2000 µg/L	93.8	70.0	130	----
benzene	71-43-2	E611F	0.5	µg/L	100 µg/L	96.4	70.0	130	----
bromobenzene	108-86-1	E611F	0.5	µg/L	100 µg/L	96.8	70.0	130	----
bromochloromethane	74-97-5	E611F	0.5	µg/L	100 µg/L	93.5	70.0	130	----
bromodichloromethane	75-27-4	E611F	0.5	µg/L	100 µg/L	89.3	70.0	130	----
bromoform	75-25-2	E611F	0.5	µg/L	100 µg/L	90.5	70.0	130	----
bromomethane	74-83-9	E611F	0.5	µg/L	100 µg/L	92.6	60.0	140	----
butylbenzene, n-	104-51-8	E611F	0.5	µg/L	100 µg/L	99.8	70.0	130	----
butylbenzene, sec-	135-98-8	E611F	0.5	µg/L	100 µg/L	111	70.0	130	----
butylbenzene, tert-	98-06-6	E611F	0.5	µg/L	100 µg/L	108	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 385580) - continued									
carbon disulfide	75-15-0	E611F	0.5	µg/L	140 µg/L	108	70.0	130	----
carbon tetrachloride	56-23-5	E611F	0.2	µg/L	100 µg/L	100	70.0	130	----
chlorobenzene	108-90-7	E611F	0.5	µg/L	100 µg/L	98.1	70.0	130	----
chloroethane	75-00-3	E611F	0.5	µg/L	100 µg/L	106	60.0	140	----
chloroform	67-66-3	E611F	0.5	µg/L	100 µg/L	95.0	70.0	130	----
chloromethane	74-87-3	E611F	2	µg/L	100 µg/L	99.9	60.0	140	----
chlorotoluene, 2-	95-49-8	E611F	0.5	µg/L	100 µg/L	105	70.0	130	----
chlorotoluene, 4-	106-43-4	E611F	0.5	µg/L	100 µg/L	99.5	70.0	130	----
cymene, p-	99-87-6	E611F	0.5	µg/L	100 µg/L	115	70.0	130	----
dibromo-3-chloropropane, 1,2-	96-12-8	E611F	0.5	µg/L	100 µg/L	85.8	70.0	130	----
dibromochloromethane	124-48-1	E611F	0.5	µg/L	100 µg/L	90.9	70.0	130	----
dibromoethane, 1,2-	106-93-4	E611F	0.2	µg/L	100 µg/L	86.1	70.0	130	----
dibromomethane	74-95-3	E611F	0.5	µg/L	100 µg/L	92.0	70.0	130	----
dichlorobenzene, 1,2-	95-50-1	E611F	0.5	µg/L	100 µg/L	101	70.0	130	----
dichlorobenzene, 1,3-	541-73-1	E611F	0.5	µg/L	100 µg/L	104	70.0	130	----
dichlorobenzene, 1,4-	106-46-7	E611F	0.5	µg/L	100 µg/L	107	70.0	130	----
dichlorodifluoromethane	75-71-8	E611F	0.5	µg/L	100 µg/L	110	60.0	140	----
dichloroethane, 1,1-	75-34-3	E611F	0.5	µg/L	100 µg/L	95.5	70.0	130	----
dichloroethane, 1,2-	107-06-2	E611F	0.5	µg/L	100 µg/L	86.1	70.0	130	----
dichloroethylene, 1,1-	75-35-4	E611F	0.5	µg/L	100 µg/L	98.3	70.0	130	----
dichloroethylene, cis-1,2-	156-59-2	E611F	0.5	µg/L	100 µg/L	100	70.0	130	----
dichloroethylene, trans-1,2-	156-60-5	E611F	0.5	µg/L	100 µg/L	95.7	70.0	130	----
dichloromethane	75-09-2	E611F	1	µg/L	100 µg/L	89.7	70.0	130	----
dichloropropane, 1,2-	78-87-5	E611F	0.5	µg/L	100 µg/L	92.5	70.0	130	----
dichloropropane, 1,3-	142-28-9	E611F	0.5	µg/L	100 µg/L	82.2	70.0	130	----
dichloropropane, 2,2-	594-20-7	E611F	0.5	µg/L	100 µg/L	92.6	70.0	130	----
dichloropropylene, 1,1-	563-58-6	E611F	0.5	µg/L	100 µg/L	102	70.0	130	----
dichloropropylene, cis-1,3-	10061-01-5	E611F	0.5	µg/L	100 µg/L	88.8	70.0	130	----
dichloropropylene, trans-1,3-	10061-02-6	E611F	0.5	µg/L	100 µg/L	91.0	70.0	130	----
ethylbenzene	100-41-4	E611F	0.5	µg/L	100 µg/L	104	70.0	130	----
hexachlorobutadiene	87-68-3	E611F	0.5	µg/L	100 µg/L	116	70.0	130	----
hexane, n-	110-54-3	E611F	0.5	µg/L	100 µg/L	95.5	70.0	130	----
hexanone, 2-	591-78-6	E611F	20	µg/L	400.6 µg/L	97.3	70.0	130	----
isopropylbenzene	98-82-8	E611F	0.5	µg/L	100 µg/L	104	70.0	130	----
methyl ethyl ketone [MEK]	78-93-3	E611F	20	µg/L	2000 µg/L	92.2	70.0	130	----
methyl isobutyl ketone [MIBK]	108-10-1	E611F	20	µg/L	401.4 µg/L	87.3	70.0	130	----
methyl-tert-butyl ether [MTBE]	1634-04-4	E611F	0.5	µg/L	100 µg/L	106	70.0	130	----
naphthalene	91-20-3	E611F	0.5	µg/L	100 µg/L	82.4	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 385580) - continued									
propylbenzene, n-	103-65-1	E611F	0.5	µg/L	100 µg/L	104	70.0	130	----
styrene	100-42-5	E611F	0.5	µg/L	100 µg/L	84.0	70.0	130	----
tetrachloroethane, 1,1,1,2-	630-20-6	E611F	0.5	µg/L	100 µg/L	94.4	70.0	130	----
tetrachloroethane, 1,1,2,2-	79-34-5	E611F	0.5	µg/L	100 µg/L	86.5	70.0	130	----
tetrachloroethylene	127-18-4	E611F	0.5	µg/L	100 µg/L	106	70.0	130	----
toluene	108-88-3	E611F	0.5	µg/L	100 µg/L	99.3	70.0	130	----
trichlorobenzene, 1,2,3-	87-61-6	E611F	0.5	µg/L	100 µg/L	92.4	70.0	130	----
trichlorobenzene, 1,2,4-	120-82-1	E611F	0.5	µg/L	100 µg/L	108	70.0	130	----
trichloroethane, 1,1,1-	71-55-6	E611F	0.5	µg/L	100 µg/L	102	70.0	130	----
trichloroethane, 1,1,2-	79-00-5	E611F	0.5	µg/L	100 µg/L	89.8	70.0	130	----
trichloroethylene	79-01-6	E611F	0.5	µg/L	100 µg/L	104	70.0	130	----
trichlorofluoromethane	75-69-4	E611F	0.5	µg/L	100 µg/L	111	60.0	140	----
trichloropropane, 1,2,3-	96-18-4	E611F	0.5	µg/L	100 µg/L	88.0	70.0	130	----
trimethylbenzene, 1,2,4-	95-63-6	E611F	0.5	µg/L	100 µg/L	111	70.0	130	----
trimethylbenzene, 1,3,5-	108-67-8	E611F	0.5	µg/L	100 µg/L	108	70.0	130	----
vinyl chloride	75-01-4	E611F	0.5	µg/L	100 µg/L	107	60.0	140	----
xylene, m+p-	179601-23-1	E611F	0.4	µg/L	200 µg/L	105	70.0	130	----
xylene, o-	95-47-6	E611F	0.3	µg/L	100 µg/L	100	70.0	130	----
Hydrocarbons (QCLot: 385618)									
EPH (C10-C19)	----	E601A	250	µg/L	7719.3 µg/L	101	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3536.8 µg/L	106	70.0	130	----
TEH (C10-C30), BC	----	E601A	250	µg/L	10414 µg/L	104	70.0	130	----

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 >= 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
Anions and Nutrients (QCLot: 384639)										
CG2200275-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0587 mg/L	0.0676 mg/L	86.8	70.0	130	----
Anions and Nutrients (QCLot: 384660)										
CG2200277-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0567 mg/L	0.05 mg/L	113	70.0	130	----
Anions and Nutrients (QCLot: 385142)										
CG2200279-001	MICH-13.0	Kjeldahl nitrogen, total [TKN]	----	E318	2.30 mg/L	2.5 mg/L	92.1	70.0	130	----
Anions and Nutrients (QCLot: 385280)										
CG2200279-005	FIELD BLANK	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 385401)										
CG2200279-005	FIELD BLANK	chloride	16887-00-6	E235.Cl	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 385402)										
CG2200279-005	FIELD BLANK	fluoride	16984-48-8	E235.F	0.908 mg/L	1 mg/L	90.8	75.0	125	----
Anions and Nutrients (QCLot: 385403)										
CG2200279-005	FIELD BLANK	sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 385404)										
CG2200279-005	FIELD BLANK	bromide	24959-67-9	E235.Br-L	0.468 mg/L	0.5 mg/L	93.6	75.0	125	----
Anions and Nutrients (QCLot: 385405)										
CG2200279-005	FIELD BLANK	nitrate (as N)	14797-55-8	E235.NO3-L	2.50 mg/L	2.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 385406)										
CG2200279-005	FIELD BLANK	nitrite (as N)	14797-65-0	E235.NO2-L	0.503 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 386076)										
CG2200279-004	DUPLICATE	chloride	16887-00-6	E235.Cl	111 mg/L	100 mg/L	111	75.0	125	----
Anions and Nutrients (QCLot: 386077)										
CG2200279-004	DUPLICATE	fluoride	16984-48-8	E235.F	1.09 mg/L	1 mg/L	109	75.0	125	----
Anions and Nutrients (QCLot: 386078)										
CG2200279-004	DUPLICATE	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 386079)										
CG2200279-004	DUPLICATE	bromide	24959-67-9	E235.Br-L	0.496 mg/L	0.5 mg/L	99.3	75.0	125	----

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
Anions and Nutrients (QCLot: 386080)										
CG2200279-004	DUPLICATE	nitrate (as N)	14797-55-8	E235.NO3-L	2.75 mg/L	2.5 mg/L	110	75.0	125	----
Anions and Nutrients (QCLot: 386081)										
CG2200279-004	DUPLICATE	nitrite (as N)	14797-65-0	E235.NO2-L	0.518 mg/L	0.5 mg/L	104	75.0	125	----
Organic / Inorganic Carbon (QCLot: 384675)										
CG2200279-005	FIELD BLANK	carbon, dissolved organic [DOC]	----	E358-L	5.68 mg/L	5 mg/L	114	70.0	130	----
Organic / Inorganic Carbon (QCLot: 384676)										
CG2200279-005	FIELD BLANK	carbon, total organic [TOC]	----	E355-L	5.88 mg/L	5 mg/L	118	70.0	130	----
Total Metals (QCLot: 385029)										
CG2200279-005	FIELD BLANK	aluminum, total	7429-90-5	E420	2.16 mg/L	2 mg/L	108	70.0	130	----
		antimony, total	7440-36-0	E420	0.225 mg/L	0.2 mg/L	112	70.0	130	----
		arsenic, total	7440-38-2	E420	0.219 mg/L	0.2 mg/L	109	70.0	130	----
		barium, total	7440-39-3	E420	0.218 mg/L	0.2 mg/L	109	70.0	130	----
		beryllium, total	7440-41-7	E420	0.431 mg/L	0.4 mg/L	108	70.0	130	----
		bismuth, total	7440-69-9	E420	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		boron, total	7440-42-8	E420	1.08 mg/L	1 mg/L	108	70.0	130	----
		cadmium, total	7440-43-9	E420	0.0453 mg/L	0.04 mg/L	113	70.0	130	----
		calcium, total	7440-70-2	E420	43.4 mg/L	40 mg/L	108	70.0	130	----
		chromium, total	7440-47-3	E420	0.460 mg/L	0.4 mg/L	115	70.0	130	----
		cobalt, total	7440-48-4	E420	0.226 mg/L	0.2 mg/L	113	70.0	130	----
		copper, total	7440-50-8	E420	0.230 mg/L	0.2 mg/L	115	70.0	130	----
		iron, total	7439-89-6	E420	22.6 mg/L	20 mg/L	113	70.0	130	----
		lead, total	7439-92-1	E420	0.212 mg/L	0.2 mg/L	106	70.0	130	----
		lithium, total	7439-93-2	E420	1.10 mg/L	1 mg/L	110	70.0	130	----
		magnesium, total	7439-95-4	E420	11.0 mg/L	10 mg/L	110	70.0	130	----
		manganese, total	7439-96-5	E420	0.229 mg/L	0.2 mg/L	114	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.225 mg/L	0.2 mg/L	112	70.0	130	----
		nickel, total	7440-02-0	E420	0.457 mg/L	0.4 mg/L	114	70.0	130	----
		phosphorus, total	7723-14-0	E420	114 mg/L	100 mg/L	114	70.0	130	----
		potassium, total	7440-09-7	E420	44.6 mg/L	40 mg/L	112	70.0	130	----
		selenium, total	7782-49-2	E420	0.446 mg/L	0.4 mg/L	112	70.0	130	----
		silicon, total	7440-21-3	E420	105 mg/L	100 mg/L	105	70.0	130	----
		silver, total	7440-22-4	E420	0.0427 mg/L	0.04 mg/L	107	70.0	130	----
		sodium, total	7440-23-5	E420	23.0 mg/L	20 mg/L	115	70.0	130	----
		strontium, total	7440-24-6	E420	0.205 mg/L	0.2 mg/L	102	70.0	130	----
		sulfur, total	7704-34-9	E420	210 mg/L	200 mg/L	105	70.0	130	----

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
Total Metals (QCLot: 385029) - continued										
CG2200279-005	FIELD BLANK	thallium, total	7440-28-0	E420	0.0420 mg/L	0.04 mg/L	105	70.0	130	----
		tin, total	7440-31-5	E420	0.222 mg/L	0.2 mg/L	111	70.0	130	----
		titanium, total	7440-32-6	E420	0.464 mg/L	0.4 mg/L	116	70.0	130	----
		uranium, total	7440-61-1	E420	0.0432 mg/L	0.04 mg/L	108	70.0	130	----
		vanadium, total	7440-62-2	E420	1.14 mg/L	1 mg/L	114	70.0	130	----
		zinc, total	7440-66-6	E420	4.39 mg/L	4 mg/L	110	70.0	130	----
		zirconium, total	7440-67-7	E420	0.430 mg/L	0.4 mg/L	108	70.0	130	----
Total Metals (QCLot: 388224)										
CG2200279-002	MICH-33.8	mercury, total	7439-97-6	E508	0.0000910 mg/L	0.0001 mg/L	91.0	70.0	130	----
Dissolved Metals (QCLot: 385032)										
CG2200279-005	FIELD BLANK	aluminum, dissolved	7429-90-5	E421	1.95 mg/L	2 mg/L	97.4	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.190 mg/L	0.2 mg/L	94.8	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.196 mg/L	0.2 mg/L	98.0	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.398 mg/L	0.4 mg/L	99.5	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0943 mg/L	0.1 mg/L	94.3	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.978 mg/L	1 mg/L	97.8	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0400 mg/L	0.04 mg/L	99.9	70.0	130	----
		calcium, dissolved	7440-70-2	E421	38.8 mg/L	40 mg/L	97.1	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.394 mg/L	0.4 mg/L	98.5	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.198 mg/L	0.2 mg/L	99.0	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.195 mg/L	0.2 mg/L	97.5	70.0	130	----
		iron, dissolved	7439-89-6	E421	19.6 mg/L	20 mg/L	98.0	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.192 mg/L	0.2 mg/L	96.0	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.997 mg/L	1 mg/L	99.7	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	9.69 mg/L	10 mg/L	96.9	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.200 mg/L	0.2 mg/L	99.9	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.394 mg/L	0.4 mg/L	98.6	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	99.0 mg/L	100 mg/L	99.0	70.0	130	----
		potassium, dissolved	7440-09-7	E421	39.5 mg/L	40 mg/L	98.7	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.381 mg/L	0.4 mg/L	95.3	70.0	130	----
		silicon, dissolved	7440-21-3	E421	93.3 mg/L	100 mg/L	93.3	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0390 mg/L	0.04 mg/L	97.5	70.0	130	----
		sodium, dissolved	7440-23-5	E421	20.3 mg/L	20 mg/L	101	70.0	130	----
		strontium, dissolved	7440-24-6	E421	0.190 mg/L	0.2 mg/L	94.8	70.0	130	----

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
Dissolved Metals (QCLot: 385032) - continued										
CG2200279-005	FIELD BLANK	sulfur, dissolved	7704-34-9	E421	194 mg/L	200 mg/L	96.8	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0381 mg/L	0.04 mg/L	95.3	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.197 mg/L	0.2 mg/L	98.6	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.374 mg/L	0.4 mg/L	93.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0365 mg/L	0.04 mg/L	91.2	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.983 mg/L	1 mg/L	98.3	70.0	130	----
		zinc, dissolved	7440-66-6	E421	3.76 mg/L	4 mg/L	94.1	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.411 mg/L	0.4 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 388225)										
CG2200279-002	MICH-33.8	mercury, dissolved	7439-97-6	E509	0.0000895 mg/L	0.0001 mg/L	89.5	70.0	130	----
Aggregate Organics (QCLot: 385067)										
CG2200239-001	Anonymous	chemical oxygen demand [COD]	----	E559-L	100 mg/L	100 mg/L	100	75.0	125	----
Volatile Organic Compounds (QCLot: 385580)										
CG2200279-001	MICH-13.0	acetone	67-64-1	E611F	1970 µg/L	2000 µg/L	98.4	70.0	130	----
		benzene	71-43-2	E611F	95.0 µg/L	100 µg/L	95.0	70.0	130	----
		bromobenzene	108-86-1	E611F	101 µg/L	100 µg/L	101	70.0	130	----
		bromochloromethane	74-97-5	E611F	98.6 µg/L	100 µg/L	98.6	70.0	130	----
		bromodichloromethane	75-27-4	E611F	91.3 µg/L	100 µg/L	91.3	70.0	130	----
		bromoform	75-25-2	E611F	96.4 µg/L	100 µg/L	96.4	70.0	130	----
		bromomethane	74-83-9	E611F	96.9 µg/L	100 µg/L	96.9	60.0	140	----
		butylbenzene, n-	104-51-8	E611F	90.5 µg/L	100 µg/L	90.5	70.0	130	----
		butylbenzene, sec-	135-98-8	E611F	111 µg/L	100 µg/L	111	70.0	130	----
		butylbenzene, tert-	98-06-6	E611F	107 µg/L	100 µg/L	107	70.0	130	----
		carbon disulfide	75-15-0	E611F	150 µg/L	140 µg/L	107	70.0	130	----
		carbon tetrachloride	56-23-5	E611F	101 µg/L	100 µg/L	101	70.0	130	----
		chlorobenzene	108-90-7	E611F	99.2 µg/L	100 µg/L	99.2	70.0	130	----
		chloroethane	75-00-3	E611F	108 µg/L	100 µg/L	108	60.0	140	----
		chloroform	67-66-3	E611F	95.9 µg/L	100 µg/L	95.9	70.0	130	----
		chloromethane	74-87-3	E611F	103 µg/L	100 µg/L	103	60.0	140	----
		chlorotoluene, 2-	95-49-8	E611F	107 µg/L	100 µg/L	107	70.0	130	----
		chlorotoluene, 4-	106-43-4	E611F	99.6 µg/L	100 µg/L	99.6	70.0	130	----
		cymene, p-	99-87-6	E611F	113 µg/L	100 µg/L	113	70.0	130	----
		dibromo-3-chloropropane, 1,2-	96-12-8	E611F	80.3 µg/L	100 µg/L	80.3	70.0	130	----
		dibromochloromethane	124-48-1	E611F	94.4 µg/L	100 µg/L	94.4	70.0	130	----
		dibromoethane, 1,2-	106-93-4	E611F	91.8 µg/L	100 µg/L	91.8	70.0	130	----
		dibromomethane	74-95-3	E611F	98.0 µg/L	100 µg/L	98.0	70.0	130	----

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
Volatile Organic Compounds (QCLot: 385580) - continued										
CG2200279-001	MICH-13.0	dichlorobenzene, 1,2-	95-50-1	E611F	106 µg/L	100 µg/L	106	70.0	130	----
		dichlorobenzene, 1,3-	541-73-1	E611F	108 µg/L	100 µg/L	108	70.0	130	----
		dichlorobenzene, 1,4-	106-46-7	E611F	111 µg/L	100 µg/L	111	70.0	130	----
		dichlorodifluoromethane	75-71-8	E611F	112 µg/L	100 µg/L	112	60.0	140	----
		dichloroethane, 1,1-	75-34-3	E611F	95.8 µg/L	100 µg/L	95.8	70.0	130	----
		dichloroethane, 1,2-	107-06-2	E611F	85.0 µg/L	100 µg/L	85.0	70.0	130	----
		dichloroethylene, 1,1-	75-35-4	E611F	98.9 µg/L	100 µg/L	98.9	70.0	130	----
		dichloroethylene, cis-1,2-	156-59-2	E611F	100 µg/L	100 µg/L	100	70.0	130	----
		dichloroethylene, trans-1,2-	156-60-5	E611F	105 µg/L	100 µg/L	105	70.0	130	----
		dichloromethane	75-09-2	E611F	93.9 µg/L	100 µg/L	93.9	70.0	130	----
		dichloropropane, 1,2-	78-87-5	E611F	92.0 µg/L	100 µg/L	92.0	70.0	130	----
		dichloropropane, 1,3-	142-28-9	E611F	78.7 µg/L	100 µg/L	78.7	70.0	130	----
		dichloropropane, 2,2-	594-20-7	E611F	95.2 µg/L	100 µg/L	95.2	70.0	130	----
		dichloropropylene, 1,1-	563-58-6	E611F	98.8 µg/L	100 µg/L	98.8	70.0	130	----
		dichloropropylene, cis-1,3-	10061-01-5	E611F	91.9 µg/L	100 µg/L	91.9	70.0	130	----
		dichloropropylene, trans-1,3-	10061-02-6	E611F	91.9 µg/L	100 µg/L	91.9	70.0	130	----
		ethylbenzene	100-41-4	E611F	104 µg/L	100 µg/L	104	70.0	130	----
		hexachlorobutadiene	87-68-3	E611F	118 µg/L	100 µg/L	118	70.0	130	----
		hexane, n-	110-54-3	E611F	91.8 µg/L	100 µg/L	91.8	70.0	130	----
		hexanone, 2-	591-78-6	E611F	383 µg/L	400.6 µg/L	95.7	70.0	130	----
		isopropylbenzene	98-82-8	E611F	103 µg/L	100 µg/L	103	70.0	130	----
		methyl ethyl ketone [MEK]	78-93-3	E611F	1910 µg/L	2000 µg/L	95.4	70.0	130	----
		methyl isobutyl ketone [MIBK]	108-10-1	E611F	362 µg/L	401.4 µg/L	90.3	70.0	130	----
		methyl-tert-butyl ether [MTBE]	1634-04-4	E611F	106 µg/L	100 µg/L	106	70.0	130	----
		naphthalene	91-20-3	E611F	84.4 µg/L	100 µg/L	84.4	70.0	130	----
		propylbenzene, n-	103-65-1	E611F	102 µg/L	100 µg/L	102	70.0	130	----
		styrene	100-42-5	E611F	83.8 µg/L	100 µg/L	83.8	70.0	130	----
		tetrachloroethane, 1,1,1,2-	630-20-6	E611F	98.8 µg/L	100 µg/L	98.8	70.0	130	----
		tetrachloroethane, 1,1,2,2-	79-34-5	E611F	92.7 µg/L	100 µg/L	92.7	70.0	130	----
		tetrachloroethylene	127-18-4	E611F	106 µg/L	100 µg/L	106	70.0	130	----
		toluene	108-88-3	E611F	97.7 µg/L	100 µg/L	97.7	70.0	130	----
		trichlorobenzene, 1,2,3-	87-61-6	E611F	104 µg/L	100 µg/L	104	70.0	130	----
		trichlorobenzene, 1,2,4-	120-82-1	E611F	115 µg/L	100 µg/L	115	70.0	130	----
		trichloroethane, 1,1,1-	71-55-6	E611F	102 µg/L	100 µg/L	102	70.0	130	----
		trichloroethane, 1,1,2-	79-00-5	E611F	93.1 µg/L	100 µg/L	93.1	70.0	130	----
		trichloroethylene	79-01-6	E611F	106 µg/L	100 µg/L	106	70.0	130	----
		trichlorofluoromethane	75-69-4	E611F	114 µg/L	100 µg/L	114	60.0	140	----

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
Volatile Organic Compounds (QCLot: 385580) - continued										
CG2200279-001	MICH-13.0	trichloropropane, 1,2,3-	96-18-4	E611F	82.1 µg/L	100 µg/L	82.1	70.0	130	----
		trimethylbenzene, 1,2,4-	95-63-6	E611F	112 µg/L	100 µg/L	112	70.0	130	----
		trimethylbenzene, 1,3,5-	108-67-8	E611F	107 µg/L	100 µg/L	107	70.0	130	----
		vinyl chloride	75-01-4	E611F	110 µg/L	100 µg/L	110	60.0	140	----
		xylene, m+p-	179601-23-1	E611F	213 µg/L	200 µg/L	107	70.0	130	----
		xylene, o-	95-47-6	E611F	101 µg/L	100 µg/L	101	70.0	130	----

ALS Environmental

Chain of Custody / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division Calgary

Work Order Reference

CG2200279

Telephone : [illegible]

Report To		Report Format / Distribution	Service Requested (Rush for
Company:	North Coal Limited	☑ Standard ☐ Other	◉ Regular (Standard Turnaround Tin
Contact:	Abby Cousins	☑ PDF ☑ Excel ☑ Digital ☐ Fax	○ Priority (2-4 Business Days) - 50%
Address:	652F Sparwood Dr, PO Box 576	Email 1: acousins@northcoal.ca	○ Emergency (1-2 Bus. Days) - 100
	Sparwood, BC, V0B 2G0	Email 2: barling@northcoal.ca	○ Same Day or Weekend Emergency
Phone:	Fax:	Email 3: mia.otto@lotic.co	Ana
Invoice To	Same as Report ? ☑ Yes ☐ No	Client / Project Information	Please indicate below Filtered, Preserved or both (F, P, F/P)
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: 22NORT01	
Company:	Same as Report	PO / AFE: 15708	
Contact:	Same as Report	LSD:	
Address:	Same as Report		
Phone:	Fax:	Quote #: CG2020NOCL1000001	
Lab Work Order # (lab use only)		ALS Contact: Patryk Wojciak	Sampler: Rick Smit

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	General	EPH x2	DOC	COD/NH3/TKN/TOC	Total Metals	Dissolved Metals	Dissolved mercury	Total Mercury	VOCx2				Number of Containers
					P	F/P	P	P	P	F/P	F/P	P	P				
	MICH-13.0	10-01-22	15:15	Surface Water	X	X	X	X	X	X	X	X	X				11
	MICH-33.8	↓	12:45	Surface Water	X	X	X	X	X	X	X	X	X				11
	AND1		14:00	Surface Water	X	X	X	X	X	X	X	X	X				11
	Duplicate		12:00	Surface Water	X	X	X	X	X	X	X	X	X				11
	Field Blank	↓	09:00	Surface Water	X	X	X	X	X	X	X	X	X				11

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

EPH Sample marked with ✗ from AND1 had clumpy/icey looking sodium bisulfate preservative, not a nice "pill" like other bottles with sodium bisulfate preservative.

all dissolved and total metals are not preserved. Please preserve when they arrive at the lab.

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 provided on a separate Excel tab.

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Rick Smit	01-10-2022	16:00		1/11	0900	-2 °C				