ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS

Work Order	: **HA2501227**		
Client	: **WSP Canada Inc.**	Laboratory	: ALS Environmental - Halifax
Contact	: Naomi Giles	Account Manager	: Amanda Overholster
Address	: 1 Spectacle Lake Drive Dartmouth Nova Scotia Canada B3B 1X7	Address	: 13-100 Wright Ave Dartmouth NS Canada B3B 1L2
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: CA0052759.2572	Date Samples Received	: 29-Apr-2025 15:00
PO	: ----	Date Analysis Commenced	: 30-Apr-2025
C-O-C number	: ----	Issue Date	: 07-May-2025 17:19
Sampler	: Client		
Site	: ----		
Quote number	: HRM-2025-0160 Water Quality Monitoring (X)		
No. of samples received	: 6		
No. of samples analysed	: 6		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

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

Signatories	*Position*	*Laboratory Department*
Nataliia Makovetska		Inorganics, Winnipeg, Manitoba
Angela Fleming		Inorganics, Waterloo, Ontario
Jiaxi Wang	Supervisor - Water Chemistry	Microbiology, Dartmouth, Nova Scotia
Jon Fisher	Production Manager, Environmental	Inorganics, Dartmouth, Nova Scotia
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Robyn MacCormack	Analyst	Administration, Dartmouth, Nova Scotia
Walt Kippenhuck	Supervisor - Inorganic	Metals, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Dartmouth, Nova Scotia

General Comments

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
%	percent
CU	colour units (1 cu = 1 mg/l pt)
L	litres
meq/L	milliequivalents per litre
mg/L	milligrams per litre
MPN/100mL	most probable number per hundred millilitres
NTU	nephelometric turbidity units
pH units	pH units
µg/L	micrograms per litre
µg/sample	micrograms per sample
µS/cm	microsiemens per centimetre

<: 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
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

				Client sample ID	KL-2	KL-3	KL-4	HWY-102-1	LU
				Client sampling date / time	29-Apr-2025 14:20	29-Apr-2025 12:25	29-Apr-2025 12:40	29-Apr-2025 11:05	29-Apr-2025 11:51
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501227-001	HA2501227-002	HA2501227-003	HA2501227-004	HA2501227-005
					Result	Result	Result	Result	Result
Sample Preparation									
Volume filtered	----	EF870B/HA	0.001	L	0.100	0.100	0.100	0.100	0.100
Physical Tests									
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290/WT	1.2	mg/L	7.1	6.0	6.5	15.4	12.4
Alkalinity, carbonate (as CO3)	3812-32-6	E290/WT	1.0	mg/L	<0.6	<0.6	<0.6	<0.6	<0.6
Alkalinity, hydroxide (as OH)	14280-30-9	E290/WT	1.0	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L	5.8	4.9	5.3	12.6	10.2
Colour, apparent	----	E330/WT	2.0	CU	89.0	34.2	35.0	33.7	24.4
Conductivity	----	E100/WT	1.0	µS/cm	131	318	318	567	883
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/WT	0.50	mg/L	17.3	27.7	27.6	57.0	76.0
Langelier index (@ 20°C)	----	EC105A/WT	0.010	-	-3.24	-2.97	-2.95	-2.48	-2.16
Langelier index (@ 4°C)	----	EC105A/WT	0.010	-	-3.49	-3.22	-3.20	-2.73	-2.41
pH	----	E108/HA	0.10	pH units	6.62	6.77	6.75	6.58	6.90
pH, saturation (@ 20°C)	----	EC105A/WT	0.010	pH units	9.86	9.74	9.70	9.06	9.06
pH, saturation (@ 4°C)	----	EC105A/WT	0.010	pH units	10.11	9.99	9.95	9.31	9.31
Solids, total dissolved [TDS]	----	E162/HA	10	mg/L	84 DLDS	187 DLDS	174 DLDS	326 DLDS	490 DLDS
Solids, total suspended [TSS]	----	E160/HA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity	----	E121/WT	0.10	NTU	4.04	0.68	0.65	0.67	2.08
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	<0.0050	0.0266	0.0123	0.0094	0.0102
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L	26.9	80.8	81.1	142	234
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	0.027	0.028	0.027	0.031	0.038

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

				Client sample ID	KL-2	KL-3	KL-4	HWY-102-1	LU
				Client sampling date / time	29-Apr-2025 14:20	29-Apr-2025 12:25	29-Apr-2025 12:40	29-Apr-2025 11:05	29-Apr-2025 11:51
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501227-001	HA2501227-002	HA2501227-003	HA2501227-004	HA2501227-005
					Result	Result	Result	Result	Result
Anions and Nutrients									
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L	0.238	0.161	0.161	0.316	0.287
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	0.172	0.263	0.268	0.828	1.16
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0032	mg/L	0.172	0.263	0.268	0.828	1.16
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-U/WT	0.0020	mg/L	0.0097	0.0033	0.0039	0.0065	0.0078
Silicate (as SiO2)	7631-86-9	E392/WP	0.50	mg/L	3.25	2.92	2.93	4.27	3.16
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	7.50	9.79	9.83	20.5	29.9
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/WT	0.50	mg/L	8.77	5.27	4.90	6.18	4.19
Microbiological Tests									
Coliforms, total	----	E010/HA	1	MPN/100 mL	866	86	124	980	345
Coliforms, Escherichia coli [E. coli]	----	E010/HA	1	MPN/100 mL	1	1	3	8	5
Ion Balance									
Anion sum	----	EC101A/WT	0.10	meq/L	1.04	2.60	2.62	4.74	7.51
Cation sum (total)	----	EC101A/WT	0.10	meq/L	1.14	2.58	2.57	4.68	7.44
Ion balance (cations/anions)	----	EC101A/WT	0.01	%	110	99.2	98.1	98.7	99.1
Total Metals									
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L	0.358	0.130	0.129	0.0802	0.103
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	0.00012	0.00018
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L	0.00041	0.00023	0.00022	0.00016	0.00020

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

				Client sample ID	KL-2	KL-3	KL-4	HWY-102-1	LU
				Client sampling date / time	29-Apr-2025 14:20	29-Apr-2025 12:25	29-Apr-2025 12:40	29-Apr-2025 11:05	29-Apr-2025 11:51
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501227-001	HA2501227-002	HA2501227-003	HA2501227-004	HA2501227-005
					Result	Result	Result	Result	Result
Total Metals									
Barium, total	7440-39-3	E420/WT	0.00010	mg/L	0.0201	0.0266	0.0269	0.0995	0.147
Beryllium, total	7440-41-7	E420/WT	0.000020	mg/L	0.000042	0.000033	0.000032	<0.000020	<0.000020
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	7440-42-8	E420/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	0.010
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L	0.0000143	0.0000226	0.0000192	0.0000152	0.000110
Calcium, total	7440-70-2	E420/WT	0.100	mg/L	5.11	8.92	8.91	18.6	25.1
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L	0.000103	0.000094	0.000094	0.000042	0.000220
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L	0.00017	<0.00010	<0.00010	0.00012	0.00014
Copper, total	7440-50-8	E420/WT	0.00050	mg/L	0.00174	0.00074	0.00074	0.00142	0.00175
Iron, total	7439-89-6	E420/WT	0.010	mg/L	0.277	0.097	0.094	0.071	0.126
Lead, total	7439-92-1	E420/WT	0.000050	mg/L	0.000563	0.000159	0.000153	0.000183	0.000205
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L	1.11	1.31	1.31	2.57	3.25
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L	0.0147	0.0209	0.0191	0.00815	0.0282
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L	0.000120	0.000131	0.000126	0.000270	0.000368
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L	0.00066	0.00062	0.00060	0.00059	0.00076
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium, total	7440-09-7	E420/WT	0.050	mg/L	0.848	0.996	1.00	2.32	3.02
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L	0.00190	0.00210	0.00208	0.00335	0.00475
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L	0.000098	0.000070	0.000065	0.000080	0.000089

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

				Client sample ID	KL-2	KL-3	KL-4	HWY-102-1	LU
				Client sampling date / time	29-Apr-2025 14:20	29-Apr-2025 12:25	29-Apr-2025 12:40	29-Apr-2025 11:05	29-Apr-2025 11:51
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501227-001	HA2501227-002	HA2501227-003	HA2501227-004	HA2501227-005
					Result	Result	Result	Result	Result
Total Metals									
Silicon (as SiO2), total	7631-86-9	EC420.SiO2/ WT	0.25	mg/L	3.72	2.93	2.89	3.70	3.46
Silicon, total	7440-21-3	E420/WT	0.10	mg/L	1.74	1.37	1.35	1.73	1.62
Silver, total	7440-22-4	E420/WT	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	7440-23-5	E420/WT	0.050	mg/L	16.5	45.5	45.3	79.8	134
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L	0.0214	0.0402	0.0402	0.0871	0.114
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L	2.53	3.21	3.28	7.14	10.4
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000013
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin, total	7440-31-5	E420/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L	0.00685	0.00118	0.00114	0.00126	0.00242
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00020
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L	0.000075	0.000091	0.000091	0.000016	0.000026
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L	0.00088	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L	0.0034	0.0052	0.0051	0.0054	0.0271
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Plant Pigments									
Chlorophyll a	479-61-8	EC870B/WP	0.010	µg/L	0.789	0.596	0.640	1.35	1.77
Chlorophyll a	479-61-8	E870B/WP	0.0020	µg/sampl e	0.0789	0.0596	0.0640	0.135	0.177

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

Analytical Results

Sub-Matrix: Surface Water (Matrix: Water)				Client sample ID	LSD	----	----	----	----
				Client sampling date / time	29-Apr-2025 13:40	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501227-006	----	----	----	----
					Result	----	----	----	----
Sample Preparation									
Volume filtered	----	EF870B/HA	0.001	L	0.100	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290/WT	1.2	mg/L	12.2	----	----	----	----
Alkalinity, carbonate (as CO3)	3812-32-6	E290/WT	1.0	mg/L	<0.6	----	----	----	----
Alkalinity, hydroxide (as OH)	14280-30-9	E290/WT	1.0	mg/L	<0.3	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L	10.0	----	----	----	----
Colour, apparent	----	E330/WT	2.0	CU	34.8	----	----	----	----
Conductivity	----	E100/WT	1.0	µS/cm	199	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/WT	0.50	mg/L	21.7	----	----	----	----
Langelier index (@ 20°C)	----	EC105A/WT	0.010	-	-2.69	----	----	----	----
Langelier index (@ 4°C)	----	EC105A/WT	0.010	-	-2.94	----	----	----	----
pH	----	E108/HA	0.10	pH units	6.85	----	----	----	----
pH, saturation (@ 20°C)	----	EC105A/WT	0.010	pH units	9.54	----	----	----	----
pH, saturation (@ 4°C)	----	EC105A/WT	0.010	pH units	9.79	----	----	----	----
Solids, total dissolved [TDS]	----	E162/HA	10	mg/L	106 DLDS	----	----	----	----
Solids, total suspended [TSS]	----	E160/HA	3.0	mg/L	5.4	----	----	----	----
Turbidity	----	E121/WT	0.10	NTU	1.86	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	0.0068	----	----	----	----
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L	45.9	----	----	----	----
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	<0.020	----	----	----	----

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

				Client sample ID	**LSD**	**----**	**----**	**----**	**----**
				Client sampling date / time	29-Apr-2025 13:40	----	----	----	----
Analyte	*CAS Number*	*Method/Lab*	*LOR*	*Unit*	**HA2501227-006**	**----**	**----**	**----**	**----**
					Result	----	----	----	----
Anions and Nutrients									
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L	0.265	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	0.104	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0032	mg/L	0.104	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.010	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	<0.0010	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/WT	0.0020	mg/L	0.0096	----	----	----	----
Silicate (as SiO2)	7631-86-9	E392/WP	0.50	mg/L	1.86	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	6.43	----	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/WT	0.50	mg/L	6.70	----	----	----	----
Microbiological Tests									
Coliforms, total	----	E010/HA	1	MPN/100 mL	>2420	----	----	----	----
Coliforms, Escherichia coli [E. coli]	----	E010/HA	1	MPN/100 mL	5	----	----	----	----
Ion Balance									
Anion sum	----	EC101A/WT	0.10	meq/L	1.64	----	----	----	----
Cation sum (total)	----	EC101A/WT	0.10	meq/L	1.64	----	----	----	----
Ion balance (cations/anions)	----	EC101A/WT	0.01	%	100	----	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L	0.136	----	----	----	----
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L	<0.00010	----	----	----	----
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L	0.00026	----	----	----	----

Analytical Results

Sub-Matrix: Surface Water (Matrix: Water)					Client sample ID	LSD	----	----	----	----
					Client sampling date / time	29-Apr-2025 13:40	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		HA2501227-006	----	----	----	----
						Result	----	----	----	----
Total Metals										
Barium, total	7440-39-3	E420/WT	0.00010	mg/L		0.0129	----	----	----	----
Beryllium, total	7440-41-7	E420/WT	0.000020	mg/L		<0.000020	----	----	----	----
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L		<0.000050	----	----	----	----
Boron, total	7440-42-8	E420/WT	0.010	mg/L		0.012	----	----	----	----
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L		0.0000097	----	----	----	----
Calcium, total	7440-70-2	E420/WT	0.100	mg/L		6.45	----	----	----	----
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L		0.000028	----	----	----	----
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L		<0.00050	----	----	----	----
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L		0.00012	----	----	----	----
Copper, total	7440-50-8	E420/WT	0.00050	mg/L		0.00100	----	----	----	----
Iron, total	7439-89-6	E420/WT	0.010	mg/L		0.182	----	----	----	----
Lead, total	7439-92-1	E420/WT	0.000050	mg/L		0.000168	----	----	----	----
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L		<0.0010	----	----	----	----
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L		1.37	----	----	----	----
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L		0.0182	----	----	----	----
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L		0.000055	----	----	----	----
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L		<0.00050	----	----	----	----
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L		<0.050	----	----	----	----
Potassium, total	7440-09-7	E420/WT	0.050	mg/L		1.06	----	----	----	----
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L		0.00176	----	----	----	----
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L		0.000070	----	----	----	----

Analytical Results

Sub-Matrix: Surface Water (Matrix: Water)				Client sample ID	LSD	----	----	----	----
				Client sampling date / time	29-Apr-2025 13:40	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501227-006	----	----	----	----
					Result	----	----	----	----
Total Metals									
Silicon (as SiO2), total	7631-86-9	EC420.SiO2/WT	0.25	mg/L	2.07	----	----	----	----
Silicon, total	7440-21-3	E420/WT	0.10	mg/L	0.97	----	----	----	----
Silver, total	7440-22-4	E420/WT	0.000010	mg/L	0.000013	----	----	----	----
Sodium, total	7440-23-5	E420/WT	0.050	mg/L	26.5	----	----	----	----
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L	0.0268	----	----	----	----
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L	2.14	----	----	----	----
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L	<0.00020	----	----	----	----
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L	<0.000010	----	----	----	----
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L	<0.00010	----	----	----	----
Tin, total	7440-31-5	E420/WT	0.00010	mg/L	<0.00010	----	----	----	----
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L	0.00326	----	----	----	----
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L	0.00016	----	----	----	----
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L	0.000018	----	----	----	----
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L	<0.00050	----	----	----	----
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L	0.0038	----	----	----	----
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L	<0.00020	----	----	----	----
Plant Pigments									
Chlorophyll a	479-61-8	EC870B/WP	0.010	µg/L	4.77	----	----	----	----
Chlorophyll a	479-61-8	E870B/WP	0.0020	µg/sample	0.477	----	----	----	----

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

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **HA2501227**	Page	: 1 of 24
Client	: **WSP Canada Inc.**	Laboratory	: ALS Environmental - Halifax
Contact	: Naomi Giles	Account Manager	: Amanda Overholster
Address	: 1 Spectacle Lake Drive Dartmouth NS Canada B3B 1X7	Address	: 13-100 Wright Ave Dartmouth, Nova Scotia Canada B3B 1L2
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: CA0052759.2572	Date Samples Received	: 29-Apr-2025 15:00
PO	: ----	Issue Date	: 07-May-2025 17:18
C O C number	: ----		
Sampler	: Client		
Site	: ----		
Quote number	: HRM-2025-0160 Water Quality Monitoring (X)		
No of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

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

Outliers : Frequency of Quality Control Samples

- 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 : Analytical Method / 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) KL-2	E298	29-Apr-2025	01-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) KL-3	E298	29-Apr-2025	01-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) HWY-102-1	E298	29-Apr-2025	03-May-2025	28 days	4 days	✓	05-May-2025	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) KL-4	E298	29-Apr-2025	03-May-2025	28 days	4 days	✓	05-May-2025	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) LSD	E298	29-Apr-2025	03-May-2025	28 days	4 days	✓	05-May-2025	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) LU	E298	29-Apr-2025	03-May-2025	28 days	4 days	✓	05-May-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE HWY-102-1	E235.Cl	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE KL-2	E235.Cl	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE KL-3	E235.Cl	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE KL-4	E235.Cl	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE LSD	E235.Cl	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE LU	E235.Cl	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE HWY-102-1	E378-U	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE KL-2	E378-U	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE KL-3	E378-U	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE KL-4	E378-U	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE LSD	E378-U	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE LU	E378-U	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE HWY-102-1	E235.F	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE KL-2	E235.F	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE KL-3	E235.F	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE KL-4	E235.F	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE LSD	E235.F	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE LU	E235.F	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE HWY-102-1	E235.NO3	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE KL-2	E235.NO3	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE KL-3	E235.NO3	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE KL-4	E235.NO3	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE LSD	E235.NO3	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE LU	E235.NO3	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE HWY-102-1	E235.NO2	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE KL-2	E235.NO2	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE KL-3	E235.NO2	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE KL-4	E235.NO2	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE LSD	E235.NO2	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE LU	E235.NO2	29-Apr-2025	02-May-2025	3 days	3 days	✓	02-May-2025	3 days	3 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE HWY-102-1	E392	29-Apr-2025	----	----	----		05-May-2025	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE KL-2	E392	29-Apr-2025	----	----	----		05-May-2025	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE KL-3	E392	29-Apr-2025	----	----	----		05-May-2025	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE KL-4	E392	29-Apr-2025	----	----	----		05-May-2025	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE LSD	E392	29-Apr-2025	----	----	----		05-May-2025	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE LU	E392	29-Apr-2025	----	----	----		05-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE HWY-102-1	E235.SO4	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE KL-2	E235.SO4	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE KL-3	E235.SO4	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE KL-4	E235.SO4	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LSD	E235.SO4	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LU	E235.SO4	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) KL-2	E318	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) KL-3	E318	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) HWY-102-1	E318	29-Apr-2025	05-May-2025	28 days	6 days	✓	05-May-2025	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) KL-4	E318	29-Apr-2025	05-May-2025	28 days	6 days	✓	05-May-2025	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) LSD	E318	29-Apr-2025	05-May-2025	28 days	6 days	✓	05-May-2025	28 days	6 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) LU	E318	29-Apr-2025	05-May-2025	28 days	6 days	✓	05-May-2025	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) KL-2	E372-U	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) KL-3	E372-U	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) HWY-102-1	E372-U	29-Apr-2025	05-May-2025	28 days	6 days	✓	05-May-2025	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) KL-4	E372-U	29-Apr-2025	05-May-2025	28 days	6 days	✓	05-May-2025	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) LSD	E372-U	29-Apr-2025	05-May-2025	28 days	6 days	✓	05-May-2025	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) LU	E372-U	29-Apr-2025	05-May-2025	28 days	6 days	✓	05-May-2025	28 days	6 days	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) KL-2	E010	29-Apr-2025	----	----	----		30-Apr-2025	30 hrs	22 hrs	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) LSD	E010	29-Apr-2025	----	----	----		30-Apr-2025	30 hrs	22 hrs	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) KL-4	E010	29-Apr-2025	----	----	----		30-Apr-2025	30 hrs	23 hrs	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) KL-3	E010	29-Apr-2025	----	----	----		30-Apr-2025	30 hrs	24 hrs	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) LU	E010	29-Apr-2025	----	----	----		30-Apr-2025	30 hrs	24 hrs	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) HWY-102-1	E010	29-Apr-2025	----	----	----		30-Apr-2025	30 hrs	25 hrs	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) KL-2	E355-L	29-Apr-2025	01-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) KL-3	E355-L	29-Apr-2025	01-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) HWY-102-1	E355-L	29-Apr-2025	03-May-2025	28 days	4 days	✓	05-May-2025	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) KL-4	E355-L	29-Apr-2025	03-May-2025	28 days	4 days	✓	05-May-2025	28 days	4 days	✓

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: 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) LSD	E355-L	29-Apr-2025	03-May-2025	28 days	4 days	✓	05-May-2025	28 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) LU	E355-L	29-Apr-2025	03-May-2025	28 days	4 days	✓	05-May-2025	28 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE HWY-102-1	E290	29-Apr-2025	02-May-2025	14 days	3 days	✓	02-May-2025	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE KL-2	E290	29-Apr-2025	02-May-2025	14 days	3 days	✓	02-May-2025	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE KL-3	E290	29-Apr-2025	02-May-2025	14 days	3 days	✓	02-May-2025	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE KL-4	E290	29-Apr-2025	02-May-2025	14 days	3 days	✓	02-May-2025	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE LSD	E290	29-Apr-2025	02-May-2025	14 days	3 days	✓	02-May-2025	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE LU	E290	29-Apr-2025	02-May-2025	14 days	3 days	✓	02-May-2025	14 days	3 days	✓
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE KL-2	E330	29-Apr-2025	----	----	----		05-May-2025	48 hrs	142 hrs	✖ EHT

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE LSD	E330	29-Apr-2025	----	----	----		05-May-2025	48 hrs	142 hrs	✖ EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE KL-4	E330	29-Apr-2025	----	----	----		05-May-2025	48 hrs	143 hrs	✖ EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE KL-3	E330	29-Apr-2025	----	----	----		05-May-2025	48 hrs	144 hrs	✖ EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE LU	E330	29-Apr-2025	----	----	----		05-May-2025	48 hrs	144 hrs	✖ EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE HWY-102-1	E330	29-Apr-2025	----	----	----		05-May-2025	48 hrs	145 hrs	✖ EHT
Physical Tests : Conductivity in Water										
HDPE HWY-102-1	E100	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE KL-2	E100	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE KL-3	E100	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE KL-4	E100	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE LSD	E100	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE LU	E100	29-Apr-2025	02-May-2025	28 days	3 days	✓	02-May-2025	28 days	3 days	✓
Physical Tests : pH by Meter										
HDPE KL-2	E108	29-Apr-2025	02-May-2025	0.25 hrs	67 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	67 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE LSD	E108	29-Apr-2025	02-May-2025	0.25 hrs	67 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	67 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE KL-4	E108	29-Apr-2025	02-May-2025	0.25 hrs	68 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	68 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE KL-3	E108	29-Apr-2025	02-May-2025	0.25 hrs	69 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	69 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE LU	E108	29-Apr-2025	02-May-2025	0.25 hrs	69 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	69 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE HWY-102-1	E108	29-Apr-2025	02-May-2025	0.25 hrs	70 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	70 hrs	✖ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE HWY-102-1	E162	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE KL-2	E162	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE KL-3	E162	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE KL-4	E162	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE LSD	E162	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE LU	E162	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE HWY-102-1	E160	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE KL-2	E160	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE KL-3	E160	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE KL-4	E160	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE LSD	E160	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE LU	E160	29-Apr-2025	----	----	----		06-May-2025	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE HWY-102-1	E121	29-Apr-2025	----	----	----		02-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE KL-2	E121	29-Apr-2025	----	----	----		02-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE KL-3	E121	29-Apr-2025	----	----	----		02-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE KL-4	E121	29-Apr-2025	----	----	----		02-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE LSD	E121	29-Apr-2025	----	----	----		02-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE LU	E121	29-Apr-2025	----	----	----		02-May-2025	3 days	3 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube HWY-102-1	E870B	29-Apr-2025	07-May-2025	28 days	8 days	✓	07-May-2025	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube KL-2	E870B	29-Apr-2025	07-May-2025	28 days	8 days	✓	07-May-2025	28 days	8 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube KL-3	E870B	29-Apr-2025	07-May-2025	28 days	8 days	✓	07-May-2025	28 days	8 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube KL-4	E870B	29-Apr-2025	07-May-2025	28 days	8 days	✓	07-May-2025	28 days	8 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube LSD	E870B	29-Apr-2025	07-May-2025	28 days	8 days	✓	07-May-2025	28 days	8 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube LU	E870B	29-Apr-2025	07-May-2025	28 days	8 days	✓	07-May-2025	28 days	8 days	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE KL-2	EF870B	29-Apr-2025	----	----	----		01-May-2025	48 hrs	45 hrs	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE KL-3	EF870B	29-Apr-2025	----	----	----		01-May-2025	48 hrs	46 hrs	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE KL-4	EF870B	29-Apr-2025	----	----	----		01-May-2025	48 hrs	46 hrs	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE LSD	EF870B	29-Apr-2025	----	----	----		01-May-2025	48 hrs	46 hrs	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE HWY-102-1	EF870B	29-Apr-2025	----	----	----		01-May-2025	48 hrs	48 hrs	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE LU	EF870B	29-Apr-2025	----	----	----		01-May-2025	48 hrs	48 hrs	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) HWY-102-1	E420	29-Apr-2025	02-May-2025	180 days	3 days	✓	02-May-2025	180 days	3 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) KL-2	E420	29-Apr-2025	02-May-2025	180 days	3 days	✓	02-May-2025	180 days	3 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) KL-3	E420	29-Apr-2025	02-May-2025	180 days	3 days	✓	02-May-2025	180 days	3 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) KL-4	E420	29-Apr-2025	02-May-2025	180 days	3 days	✓	02-May-2025	180 days	3 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) LSD	E420	29-Apr-2025	02-May-2025	180 days	3 days	✓	02-May-2025	180 days	3 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) LU	E420	29-Apr-2025	02-May-2025	180 days	3 days	✓	02-May-2025	180 days	3 days	✓

Legend & Qualifier Definitions

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

EHT: Exceeded ALS recommended hold time prior to analysis.

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)							
Total Coliforms and E. coli (Enzyme Substrate)	E010	1974380	1	6	16.6	5.0	✓
Conductivity in Water	E100	1976595	1	15	6.6	5.0	✓
pH by Meter	E108	1976622	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1976841	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1981869	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1981870	1	13	7.6	5.2	✓
Chloride in Water by IC	E235.Cl	1976593	1	15	6.6	5.0	✓
Fluoride in Water by IC	E235.F	1976591	1	7	14.2	5.0	✓
Nitrite in Water by IC	E235.NO2	1976592	1	14	7.1	5.0	✓
Nitrate in Water by IC	E235.NO3	1976590	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1976594	1	15	6.6	5.0	✓
Alkalinity Species by Titration	E290	1976596	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1975034	2	40	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1975032	2	34	5.8	5.0	✓
Colour (Apparent) by Spectrometer	E330	1980070	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1975035	2	40	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1975033	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1976598	1	8	12.5	5.0	✓
Reactive Silica by Colourimetry	E392	1980235	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1976300	1	19	5.2	5.0	✓
Chlorophyll-a by Fluorometry (Support Lab Filtered µg)	E870B	1983805	0	13	0.0	5.0	✗
Laboratory Control Samples (LCS)							
Conductivity in Water	E100	1976595	1	15	6.6	5.0	✓
pH by Meter	E108	1976622	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1976841	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1981869	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1981870	1	13	7.6	5.2	✓
Chloride in Water by IC	E235.Cl	1976593	1	15	6.6	5.0	✓
Fluoride in Water by IC	E235.F	1976591	1	7	14.2	5.0	✓
Nitrite in Water by IC	E235.NO2	1976592	1	14	7.1	5.0	✓
Nitrate in Water by IC	E235.NO3	1976590	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1976594	1	15	6.6	5.0	✓
Alkalinity Species by Titration	E290	1976596	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1975034	2	40	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1975032	2	34	5.8	5.0	✓
Colour (Apparent) by Spectrometer	E330	1980070	1	20	5.0	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							
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1975035	2	40	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1975033	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1976598	1	8	12.5	5.0	✓
Reactive Silica by Colourimetry	E392	1980235	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1976300	1	19	5.2	5.0	✓
Chlorophyll-a by Fluorometry (Support Lab Filtered µg)	E870B	1983805	1	13	7.6	5.0	✓
Method Blanks (MB)							
Total Coliforms and E. coli (Enzyme Substrate)	E010	1974380	1	6	16.6	5.0	✓
Conductivity in Water	E100	1976595	1	15	6.6	5.0	✓
Turbidity by Nephelometry	E121	1976841	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1981869	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1981870	1	13	7.6	5.2	✓
Chloride in Water by IC	E235.Cl	1976593	1	15	6.6	5.0	✓
Fluoride in Water by IC	E235.F	1976591	1	7	14.2	5.0	✓
Nitrite in Water by IC	E235.NO2	1976592	1	14	7.1	5.0	✓
Nitrate in Water by IC	E235.NO3	1976590	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1976594	1	15	6.6	5.0	✓
Alkalinity Species by Titration	E290	1976596	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1975034	2	40	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1975032	2	34	5.8	5.0	✓
Colour (Apparent) by Spectrometer	E330	1980070	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1975035	2	40	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1975033	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1976598	1	8	12.5	5.0	✓
Reactive Silica by Colourimetry	E392	1980235	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1976300	1	19	5.2	5.0	✓
Chlorophyll-a by Fluorometry (Support Lab Filtered µg)	E870B	1983805	1	13	7.6	5.0	✓
Matrix Spikes (MS)							
Chloride in Water by IC	E235.Cl	1976593	1	15	6.6	5.0	✓
Fluoride in Water by IC	E235.F	1976591	1	7	14.2	5.0	✓
Nitrite in Water by IC	E235.NO2	1976592	1	14	7.1	5.0	✓
Nitrate in Water by IC	E235.NO3	1976590	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1976594	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1975034	2	40	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1975032	2	34	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1975035	2	40	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1975033	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1976598	1	8	12.5	5.0	✓
Reactive Silica by Colourimetry	E392	1980235	1	20	5.0	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) - Continued							
Total Metals in Water by CRC ICPMS	E420	1976300	1	19	5.2	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
Total Coliforms and E. coli (Enzyme Substrate)	E010 ALS Environmental - Halifax	Water	APHA 9223 (mod)	The enzyme substrate test simultaneously detects Total Coliforms and E. coli in a 100 mL sample after incubation at 35.0 ±0.5°C for either 18 or 24 hours (dependent on reagent used).
Conductivity in Water	E100 ALS Environmental - Waterloo	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 ALS Environmental - Halifax	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 ALS Environmental - Waterloo	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 ALS Environmental - Halifax	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Halifax	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl ALS Environmental - Waterloo	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 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC	E235.NO3 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Waterloo	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 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Colour (Apparent) by Spectrometer	E330 ALS Environmental - Waterloo	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters. 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 ALS Environmental - Waterloo	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 carbonate-based Inorganic Carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. Forms of carbon associated with inorganic or organic molecules (e.g. SCN and CN) are included in NPOC if they are not removed by purging under acidic conditions. Notably, NPOC excludes most volatile organic compounds and free cyanide. For samples where the majority of Total Carbon is inorganic, this method provides greater accuracy and reliability versus the TOC by subtraction method (TC minus TIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Waterloo	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 0.001 mg/L)	E378-U ALS Environmental - Waterloo	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically 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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Reactive Silica by Colourimetry	E392 ALS Environmental - Winnipeg	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Waterloo	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.
Chlorophyll-a by Fluorometry (Support Lab Filtered µg)	E870B ALS Environmental - Winnipeg	Water	EPA 445.0 (mod)	Chlorophyll-a is determined by solvent extraction followed with analysis by fluorometry using the non-acidification procedure. Sampling volume not provided by client.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Waterloo	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed as 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 hardness is a property of water due to dissolved divalent cations. In non-turbid waters, Hardness from total Ca/Mg is normally comparable to Dissolved Hardness, but may be biased high if particulate forms of Ca or Mg are present.
Ion Balance using Total Metals	EC101A ALS Environmental - Waterloo	Water	APHA 1030E	Cation Sum (using total metals), Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
Saturation Index using Laboratory pH (Ca-T)	EC105A ALS Environmental - Waterloo	Water	APHA 2330B	Langelier Index provides an indication of scale formation potential at a given pH and temperature, and is calculated as per APHA 2330B Saturation Index. Positive values indicate oversaturation with respect to CaCO3. Negative values indicate undersaturation of CaCO3. This calculation uses laboratory pH measurements and provides estimates of Langelier Index at temperatures of 4, 15, 20, 25, 66, and 77°C. Ryznar Stability Index is an alternative index used for scale formation and corrosion potential.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Waterloo	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Total Silicon as Silica (Calculation)	EC420.SiO2 ALS Environmental - Waterloo	Water	N/A	Total Silicon (as SiO2) is a calculated parameter. Total Silicon (as SiO2 mg/L) = 2.139 x Total Silicon (mg/L).
Chlorophyll-a by Fluorometry (Support Lab Filtered µg/L)	EC870B ALS Environmental - Winnipeg	Water	CALC	Convert results to sample concentration based on support lab filter information.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Chlorophyll-a Filtration by Support Laboratory	EF870B ALS Environmental - Halifax	Water	EPA 445.0 (mod)	Filtration for chlorophyll-a analysis

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Waterloo	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Waterloo	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Waterloo	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Waterloo	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Chlorophyll-a Extraction (Support Lab Filtered)	EP870B ALS Environmental - Winnipeg	Water	EPA 445.0 (mod)	Chlorophyll-a solvent extraction.

QUALITY CONTROL REPORT

Work Order	: **HA2501227**	Page	: 1 of 14
Client	: WSP Canada Inc.	Laboratory	: ALS Environmental - Halifax
Contact	: Naomi Giles	Account Manager	: Amanda Overholster
Address	: 1 Spectacle Lake Drive Dartmouth NS Canada B3B 1X7	Address	: 13-100 Wright Ave Dartmouth, Nova Scotia Canada B3B 1L2
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: CA0052759.2572	Date Samples Received	: 29-Apr-2025 15:00
PO	: ----	Date Analysis Commenced	: 30-Apr-2025
C-O-C number	: ----	Issue Date	: 07-May-2025 17:18
Sampler	: Client		
Site	: ----		
Quote number	: HRM-2025-0160 Water Quality Monitoring (X)		
No. of samples received	: 6		
No. of samples analysed	: 6		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Nataliia Makovetska		Winnipeg Inorganics, Winnipeg, Manitoba
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Walt Kippenhuck	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1976595)											
WT2509971-004	Anonymous	Conductivity	—	E100	2.0	µS/cm	559	556	0.538%	10%	—
Physical Tests (QC Lot: 1976596)											
WT2509971-004	Anonymous	Alkalinity, total (as CaCO3)	—	E290	1.0	mg/L	204	208	2.07%	20%	—
Physical Tests (QC Lot: 1976622)											
HA2501224-001	Anonymous	pH	—	E108	0.10	pH units	5.24	5.26	0.343%	4%	—
Physical Tests (QC Lot: 1976841)											
WT2509990-003	Anonymous	Turbidity	—	E121	0.10	NTU	277	270	2.56%	15%	—
Physical Tests (QC Lot: 1980070)											
HA2501227-001	KL-2	Colour, apparent	—	E330	2.0	CU	89.0	88.5	0.589%	20%	—
Physical Tests (QC Lot: 1981869)											
HA2501227-001	KL-2	Solids, total suspended [TSS]	—	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	—
Physical Tests (QC Lot: 1981870)											
HA2501227-001	KL-2	Solids, total dissolved [TDS]	—	E162	13	mg/L	84	84	1	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1975032)											
HA2501227-002	KL-3	Kjeldahl nitrogen, total [TKN]	—	E318	0.050	mg/L	0.161	0.183	0.022	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1975033)											
HA2501227-001	KL-2	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0097	0.0097	0.00008	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1975034)											
HA2501224-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0138	0.0132	0.0006	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1976590)											
HA2501224-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.034	0.034	0.0001	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1976591)											
HA2501224-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1976592)											
HA2501224-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1976593)											
HA2501224-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	7.15	7.13	0.197%	20%	—
Anions and Nutrients (QC Lot: 1976594)											
HA2501224-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	2.56	2.51	0.05	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1976598)											

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
Anions and Nutrients (QC Lot: 1976598) - continued											
HA2501110-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1978496)											
HA2501227-004	HWY-102-1	Kjeldahl nitrogen, total [TKN]	—	E318	0.050	mg/L	0.316	0.254	0.063	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1978497)											
HA2501227-003	KL-4	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0039	0.0039	0.00002	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1978498)											
HA2501227-006	LSD	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0068	0.0065	0.0003	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1980235)											
HA2501198-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	11.0	11.0	0.204%	20%	—
Organic / Inorganic Carbon (QC Lot: 1975035)											
HA2501211-001	Anonymous	Carbon, total organic [TOC]	—	E355-L	0.50	mg/L	2.12	2.11	0.008	Diff <2x LOR	—
Organic / Inorganic Carbon (QC Lot: 1978499)											
HA2501227-005	LU	Carbon, total organic [TOC]	—	E355-L	0.50	mg/L	4.19	4.35	0.16	Diff <2x LOR	—
Microbiological Tests (QC Lot: 1974380)											
HA2501227-001	KL-2	Coliforms, Escherichia coli [E. coli]	—	E010	1	MPN/100mL	1	<1	0	Diff <2x LOR	—
		Coliforms, total	—	E010	1	MPN/100mL	866	816	5.94%	65%	—
Total Metals (QC Lot: 1976300)											
HA2501211-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	7.2 µg/L	0.0074	0.0002	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 00014	0 00014	0 000001	Diff 2x LOR	
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00464	0.00462	0.369%	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	<0.010	<0.010	0	Diff <2x LOR	—
		Cadmium, total	7440 43 9	E420	0 0000050	mg/L	0 0000133	0 0000149	0 0000016	Diff 2x LOR	
		Calcium, total	7440-70-2	E420	0.050	mg/L	19.9	19.5	1.98%	20%	—
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000049	0.000050	0.000001	Diff <2x LOR	—
		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	<0.00010	<0.00010	0	Diff <2x LOR	—
		Copper, total	7440 50 8	E420	0 00050	mg/L	0 0128	0 0128	0 231%	20%	
		Iron, total	7439-89-6	E420	0.010	mg/L	29 µg/L	0.028	0.0007	Diff <2x LOR	—
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000057	0.000055	0.000002	Diff <2x LOR	—
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	—
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.442	0.440	0.595%	20%	—

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
Total Metals (QC Lot: 1976300) - continued											
HA2501211-001	Anonymous	Manganese, total	7439-96-5	E420	0.00010	mg/L	1.05 µg/L	0.00107	1.90%	20%	—
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	—
		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	0.496	0.481	0.015	Diff <2x LOR	—
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.270	0.269	0.00008	Diff <2x LOR	—
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00098	0.00095	0.00003	Diff <2x LOR	—
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	—
		Silicon, total	7440-21-3	E420	0.10	mg/L	1.36	1.34	1.35%	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	11.4	11.4	0.392%	20%	—
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0142	0.0140	1.58%	20%	—
		Sulfur, total	7704-34-9	E420	0.50	mg/L	14.0	13.8	1.48%	20%	—
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	—
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	—
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	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	<0.00030	<0.00030	0	Diff <2x LOR	—
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	—
		Uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	—
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	—
		Zinc, total	7440-66-6	E420	0.0030	mg/L	105 µg/L	0.105	0.462%	20%	—
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	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: 1976595)						
Conductivity	—	E100	1	µS/cm	<1.0	—
Physical Tests (QCLot: 1976596)						
Alkalinity, total (as CaCO3)	—	E290	1	mg/L	<1.0	—
Physical Tests (QCLot: 1976841)						
Turbidity	—	E121	0.1	NTU	<0.10	—
Physical Tests (QCLot: 1980070)						
Colour, apparent	—	E330	2	CU	<2.0	—
Physical Tests (QCLot: 1981869)						
Solids, total suspended [TSS]	—	E160	3	mg/L	<3.0	—
Physical Tests (QCLot: 1981870)						
Solids, total dissolved [TDS]	—	E162	10	mg/L	<10	—
Anions and Nutrients (QCLot: 1975032)						
Kjeldahl nitrogen, total [TKN]	—	E318	0.05	mg/L	<0.050	—
Anions and Nutrients (QCLot: 1975033)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	—
Anions and Nutrients (QCLot: 1975034)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	—
Anions and Nutrients (QCLot: 1976590)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	—
Anions and Nutrients (QCLot: 1976591)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	—
Anions and Nutrients (QCLot: 1976592)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	—
Anions and Nutrients (QCLot: 1976593)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	—
Anions and Nutrients (QCLot: 1976594)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	—
Anions and Nutrients (QCLot: 1976598)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	—
Anions and Nutrients (QCLot: 1978496)						
Kjeldahl nitrogen, total [TKN]	—	E318	0.05	mg/L	<0.050	—
Anions and Nutrients (QCLot: 1978497)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1978497) - continued						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	—
Anions and Nutrients (QCLot: 1978498)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	—
Anions and Nutrients (QCLot: 1980235)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	—
Organic / Inorganic Carbon (QCLot: 1975035)						
Carbon, total organic [TOC]	—	E355-L	0.5	mg/L	<0.50	—
Organic / Inorganic Carbon (QCLot: 1978499)						
Carbon, total organic [TOC]	—	E355-L	0.5	mg/L	<0.50	—
Microbiological Tests (QCLot: 1974380)						
Coliforms, Escherichia coli [E. coli]	—	E010	1	MPN/100mL	<1	—
Coliforms, total	—	E010	1	MPN/100mL	<1	—
Total Metals (QCLot: 1976300)						
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	—
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	—
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	—
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	—

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1976300) - continued						
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	—
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	—
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	—
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	—
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	—
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	—
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	—
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	—
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	—
Plant Pigments (QCLot: 1983805)						
Chlorophyll a	479-61-8	E870B	0.002	µg/sample	<0.0020	—

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	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1976595)									
Conductivity	—	E100	1	µS/cm	1410 µS/cm	101	90.0	110	—
Physical Tests (QCLot: 1976596)									
Alkalinity, total (as CaCO3)	—	E290	1	mg/L	150 mg/L	99.4	85.0	115	—
Physical Tests (QCLot: 1976622)									
pH	—	E108	—	pH units	7 pH units	100	98.0	102	—
Physical Tests (QCLot: 1976841)									
Turbidity	—	E121	0.1	NTU	200 NTU	99.4	85.0	115	—
Physical Tests (QCLot: 1980070)									
Colour, apparent	—	E330	2	CU	25 CU	94.4	85.0	115	—
Physical Tests (QCLot: 1981869)									
Solids, total suspended [TSS]	—	E160	3	mg/L	150 mg/L	95.0	85.0	115	—
Physical Tests (QCLot: 1981870)									
Solids, total dissolved [TDS]	—	E162	10	mg/L	1000 mg/L	96.0	85.0	115	—
Anions and Nutrients (QCLot: 1975032)									
Kjeldahl nitrogen, total [TKN]	—	E318	0.05	mg/L	4 mg/L	107	75.0	125	—
Anions and Nutrients (QCLot: 1975033)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.333 mg/L	101	80.0	120	—
Anions and Nutrients (QCLot: 1975034)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	—
Anions and Nutrients (QCLot: 1976590)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	98.6	90.0	110	—
Anions and Nutrients (QCLot: 1976591)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	—
Anions and Nutrients (QCLot: 1976592)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	99.3	90.0	110	—
Anions and Nutrients (QCLot: 1976593)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.0	90.0	110	—
Anions and Nutrients (QCLot: 1976594)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	98.5	90.0	110	—
Anions and Nutrients (QCLot: 1976598)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	98.2	80.0	120	—

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Anions and Nutrients (QCLot: 1978496)									
Kjeldahl nitrogen, total [TKN]	—	E318	0.05	mg/L	4 mg/L	103	75.0	125	—
Anions and Nutrients (QCLot: 1978497)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.333 mg/L	99.0	80.0	120	—
Anions and Nutrients (QCLot: 1978498)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.0	85.0	115	—
Anions and Nutrients (QCLot: 1980235)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	—
Organic / Inorganic Carbon (QCLot: 1975035)									
Carbon, total organic [TOC]	—	E355-L	0.5	mg/L	8.57 mg/L	107	80.0	120	—
Organic / Inorganic Carbon (QCLot: 1978499)									
Carbon, total organic [TOC]	—	E355-L	0.5	mg/L	8.57 mg/L	105	80.0	120	—
Total Metals (QCLot: 1976300)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	104	80.0	120	—
Antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	102	80.0	120	—
Arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	104	80.0	120	—
Barium, total	7440-39-3	E420	0.0001	mg/L	0.012 mg/L	104	80.0	120	—
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	96.8	80.0	120	—
Bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	101	80.0	120	—
Boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	96.8	80.0	120	—
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	99.2	80.0	120	—
Calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	96.3	80.0	120	—
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.002 mg/L	98.8	80.0	120	—
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.012 mg/L	100	80.0	120	—
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.012 mg/L	95.8	80.0	120	—
Copper, total	7440-50-8	E420	0.0005	mg/L	0.012 mg/L	93.9	80.0	120	—
Iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	98.9	80.0	120	—
Lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	102	80.0	120	—
Lithium, total	7439-93-2	E420	0.001	mg/L	0.012 mg/L	101	80.0	120	—
Magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	109	80.0	120	—
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.012 mg/L	102	80.0	120	—
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.012 mg/L	97.7	80.0	120	—
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	96.7	80.0	120	—
Phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	106	80.0	120	—
Potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	103	80.0	120	—

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1976300) - continued									
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	102	80.0	120	—
Selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	96.7	80.0	120	—
Silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	102	80.0	120	—
Silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	91.7	80.0	120	—
Sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	101	80.0	120	—
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.012 mg/L	101	80.0	120	—
Sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	100	80.0	120	—
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	98.1	80.0	120	—
Thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	101	80.0	120	—
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	99.7	80.0	120	—
Tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	103	80.0	120	—
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.012 mg/L	97.4	80.0	120	—
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	98.5	80.0	120	—
Uranium, total	7440-61-1	E420	0.00001	mg/L	0 mg/L	99.8	80.0	120	—
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	102	80.0	120	—
Zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	97.6	80.0	120	—
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	94.8	80.0	120	—
Plant Pigments (QCLot: 1983805)									
Chlorophyll a	479-61-8	E870B	0.002	µg/sample	1.07 µg/sample	92.2	80.0	120	—

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: 1975032)										
HA2501227-002	KL-3	Kjeldahl nitrogen, total [TKN]	—	E318	2.88 mg/L	2.5 mg/L	115	70.0	130	—
Anions and Nutrients (QCLot: 1975033)										
HA2501227-001	KL-2	Phosphorus, total	7723-14-0	E372-U	0.0954 mg/L	0.1 mg/L	95.4	70.0	130	—
Anions and Nutrients (QCLot: 1975034)										
HA2501224-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	—
Anions and Nutrients (QCLot: 1976590)										
HA2501224-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.46 mg/L	2.5 mg/L	98.5	75.0	125	—
Anions and Nutrients (QCLot: 1976591)										
HA2501224-001	Anonymous	Fluoride	16984-48-8	E235.F	1.00 mg/L	1 mg/L	100	75.0	125	—
Anions and Nutrients (QCLot: 1976592)										
HA2501224-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.496 mg/L	0.5 mg/L	99.2	75.0	125	—
Anions and Nutrients (QCLot: 1976593)										
HA2501224-001	Anonymous	Chloride	16887-00-6	E235.Cl	98.6 mg/L	100 mg/L	98.6	75.0	125	—
Anions and Nutrients (QCLot: 1976594)										
HA2501224-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	98.3 mg/L	100 mg/L	98.3	75.0	125	—
Anions and Nutrients (QCLot: 1976598)										
HA2501110-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0200 mg/L	0.02 mg/L	102	70.0	130	—
Anions and Nutrients (QCLot: 1978496)										
HA2501227-004	HWY-102-1	Kjeldahl nitrogen, total [TKN]	—	E318	2.92 mg/L	2.5 mg/L	117	70.0	130	—
Anions and Nutrients (QCLot: 1978497)										
HA2501227-003	KL-4	Phosphorus, total	7723-14-0	E372-U	0.101 mg/L	0.1 mg/L	101	70.0	130	—
Anions and Nutrients (QCLot: 1978498)										
HA2501227-006	LSD	Ammonia, total (as N)	7664-41-7	E298	0.100 mg/L	0.1 mg/L	100	75.0	125	—
Anions and Nutrients (QCLot: 1980235)										
HA2501198-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	ND mg/L	—	ND	75.0	125	—
Organic / Inorganic Carbon (QCLot: 1975035)										
HA2501211-001	Anonymous	Carbon, total organic [TOC]	—	E355-L	5.23 mg/L	5 mg/L	105	70.0	130	—
Organic / Inorganic Carbon (QCLot: 1978499)										
HA2501227-005	LU	Carbon, total organic [TOC]	—	E355-L	5.09 mg/L	5 mg/L	102	70.0	130	—
Total Metals (QCLot: 1976300)										

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Matrix Spike (MS) Report: Spike Concentration	Spike Target	Recovery (%) MS	Recovery Limits (%) Low	Recovery Limits (%) High	Qualifier
Total Metals (QCLot: 1976300) - continued										
HA2501211-002	Anonymous	Aluminum, total	7429-90-5	E420	0.0992 mg/L	0.1 mg/L	99.2	70.0	130	—
		Antimony, total	7440-36-0	E420	0.0520 mg/L	0.05 mg/L	104	70.0	130	—
		Arsenic, total	7440-38-2	E420	0.0521 mg/L	0.05 mg/L	104	70.0	130	—
		Barium, total	7440-39-3	E420	0.0127 mg/L	0.012 mg/L	101	70.0	130	—
		Beryllium, total	7440-41-7	E420	0.00470 mg/L	0.005 mg/L	94.0	70.0	130	—
		Bismuth, total	7440-69-9	E420	0.0495 mg/L	0.05 mg/L	99.0	70.0	130	—
		Boron, total	7440-42-8	E420	0.050 mg/L	0.05 mg/L	100	70.0	130	—
		Cadmium, total	7440-43-9	E420	0.00503 mg/L	0.005 mg/L	100	70.0	130	—
		Calcium, total	7440-70-2	E420	ND mg/L	—	ND	70.0	130	—
		Cesium, total	7440-46-2	E420	0.00252 mg/L	0.002 mg/L	101	70.0	130	—
		Chromium, total	7440-47-3	E420	0.0124 mg/L	0.012 mg/L	98.8	70.0	130	—
		Cobalt, total	7440-48-4	E420	0.0121 mg/L	0.012 mg/L	96.5	70.0	130	—
		Copper, total	7440-50-8	E420	0.0114 mg/L	0.012 mg/L	91.3	70.0	130	—
		Iron, total	7439-89-6	E420	0.048 mg/L	0.05 mg/L	97.1	70.0	130	—
		Lead, total	7439-92-1	E420	0.0252 mg/L	0.025 mg/L	101	70.0	130	—
		Lithium, total	7439-93-2	E420	0.0121 mg/L	0.012 mg/L	96.7	70.0	130	—
		Magnesium, total	7439-95-4	E420	2.62 mg/L	2.5 mg/L	105	70.0	130	—
		Manganese, total	7439-96-5	E420	0.0124 mg/L	0.012 mg/L	99.0	70.0	130	—
		Molybdenum, total	7439-98-7	E420	0.0125 mg/L	0.012 mg/L	99.8	70.0	130	—
		Nickel, total	7440-02-0	E420	0.0243 mg/L	0.025 mg/L	97.0	70.0	130	—
		Phosphorus, total	7723-14-0	E420	ND mg/L	—	ND	70.0	130	—
		Potassium, total	7440-09-7	E420	2.48 mg/L	2.5 mg/L	99.2	70.0	130	—
		Rubidium, total	7440-17-7	E420	0.00498 mg/L	0.005 mg/L	99.5	70.0	130	—
		Selenium, total	7782-49-2	E420	0.0496 mg/L	0.05 mg/L	99.2	70.0	130	—
		Silicon, total	7440-21-3	E420	ND mg/L	—	ND	70.0	130	—
		Silver, total	7440-22-4	E420	0.00451 mg/L	0.005 mg/L	90.2	70.0	130	—
		Sodium, total	7440-23-5	E420	ND mg/L	—	ND	70.0	130	—
		Strontium, total	7440-24-6	E420	ND mg/L	—	ND	70.0	130	—
		Sulfur, total	7704-34-9	E420	ND mg/L	—	ND	70.0	130	—
		Tellurium, total	13494-80-9	E420	0.00485 mg/L	0.005 mg/L	97.0	70.0	130	—
		Thallium, total	7440-28-0	E420	0.0498 mg/L	0.05 mg/L	99.5	70.0	130	—
		Thorium, total	7440-29-1	E420	0.00509 mg/L	0.005 mg/L	102	70.0	130	—
		Tin, total	7440-31-5	E420	0.0260 mg/L	0.025 mg/L	104	70.0	130	—
		Titanium, total	7440-32-6	E420	0.0119 mg/L	0.012 mg/L	95.5	70.0	130	—
		Tungsten, total	7440-33-7	E420	0.00497 mg/L	0.005 mg/L	99.4	70.0	130	—
		Uranium, total	7440-61-1	E420	0.000255 mg/L	0 mg/L	102	70.0	130	—
		Vanadium, total	7440-62-2	E420	0.0255 mg/L	0.025 mg/L	102	70.0	130	—
		Zinc, total	7440-66-6	E420	ND mg/L	—	ND	70.0	130	—
		Zirconium, total	7440-67-7	E420	0.00483 mg/L	0.005 mg/L	96.6	70.0	130	—

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

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Canada Toll Free: 1 800 668 9878

Environmental Division Halifax
Work Order Reference
HA2501227

Telephone : +1 902 707 4888

Report To	Contact and company name below will appear on the final report	Reports / Recipients	Turnaround Time (TAT) Requested
Company:	WSP CANADA INC	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	☑ Routine [R] if received by 3pm M-F - no surcharges apply
Contact:	NAOMI GILES	Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A	☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimu
Phone:	782-640-1923	☑ Compare Results to Criteria on Report - provide details below if box checked	☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimu
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimu
Street:	1 SPECTACLE LAKE DRIVE	Email 1 or Fax NAOMI.GILES@WSP.COM	☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimu
City/Province:	DARTMOUTH, NS	Email 2	☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.
Postal Code:	B3B 1X7	Email 3	Additional fees may apply to rush requests on weekend
Invoice To	Same as Report To ☑ YES ☐ NO	Invoice Recipients	Date and Time Required for all E&P TATs:
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	For all tests with rush TATs requested, please c
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Client Code / QUOTE #:		AFE/Cost Center:	PO#
Job / Project #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only): HA2501227		ALS Contact:	Sampler:

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Inorganic Parameters (see attached sheet)	Calculated Parameters (see attached)	Metals	Chlorophyll-a-	E.coli (CFU/100 mL)	Total Coliform (CFU/100 mL)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	KL-1	29-04-25	—	SW	7	R	R	R	R	R	R			
	KL-2		14:20	SW		R	R	R	R	R	R			
	KL-3		12:25	SW		R	R	R	R	R	R			
	KL-4		12:40	SW		R	R	R	R	R	R			
	KL-5		—	SW		R	R	R	R	R	R			
	KL-6		—	SW		R	R	R	R	R	R			
	KL-7		—	SW		R	R	R	R	R	R			
	~~PML-1~~		—	SW		R	R	R	R	R	R			
	~~PML-2~~		—	SW		R	R	R	R	R	R			
	HWY-102-1		11:05	SW		R	R	R	R	R	R			
	~~HWY-102-2~~		—	SW		R	R	R	R	R	R			
	LU		11:51	SW		R	R	R	R	R	R			

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)	SAMPLE RECEIPT DETAILS (ALS use only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	See attached for analytical requirments. CO·CO2 ALSO - Low level Phosphorus	Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED
Are samples for human consumption/ use? ☐ YES ☑ NO		Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A
		INITIAL COOLER TEMPERATURES °C: 8.5, 11.3 — FINAL COOLER TEMPERATURES °C:

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (ALS use only)		FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: JORDAN HENRY	Date: 29-04-2025	Time: 1502	[redacted] Date: 3:00 April 29/25	Time:	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION [redacted]TE - LABORATORY COPY YELLOW - CLIENT COPY

MAY 2023 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report
Company:	WSP CANADA INC
Contact:	NAOMI GILES
Phone:	782-640-1923
	Company address below will appear on the final report
Street:	1 SPECTACLE LAKE DRIVE
City/Province:	DARTMOUTH, NS
Postal Code:	B3B 1X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A

☑ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax NAOMI.GILES@WSP.COM

Email 2

Email 3

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Client Code / QUOTE #:

Job / Project #:

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (ALS use only): ALS Contact: Sampler:

Analysis Request

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

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Inorganic Parameters (see attached sheet)	Calculated Parameters (see attached	Metals	Chlorophyll-a-	E.coli (CFU/100 mL)	Total Coliform (CFU/100 mL)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	LSD	29-04-25	13:40	SW	7	R	R	R	R	R	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

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

See attached for analytical requirements
ALSO, - Low level phosphorus LC002.

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

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

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
8.5	11.3						

SHIPMENT RELEASE (client use)

Released by: JORDAN HENRY Date: 29-04-2025 Time: 1502

INITIAL SHIPMENT RECEPTION (ALS use only)

[redacted] Date: April 29/25 Time: 3:00

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

E - LABORATORY COPY YELLOW - CLIENT COPY

MAY 2023 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form.**

Table 2 - Parameter Groups

[redacted]	Group B - Inorganic parameters	Group C - Calculated parameters	Group D - Standard metals	Group E - Microbiological parameters	Group F - Additional metals
	Total Alkalinity (as $CaCO_3$) Dissolved Chloride Colour Total Kjeldahl Nitrogen Nitrate Nitrite Nitrogen (as Ammonia) Total Organic Carbon Orthophosphate (as P) pH Total Phosphorus (low level) Reactive Silica Total Suspended Solids Dissolved Sulphate Turbidity Specific Conductance	Anion sum Cation sum Nitrate + Nitrite Bicarbonate Alkalinity (as $CaCO_3$) Hardness Total Dissolved Solids Saturation pH (at 4EC and 20EC) Langlier Index (at 4EC and 20EC)	Calcium Copper Iron Magnesium Manganese Potassium Sodium Zinc	Chlorophyll-α *E. coli* (MPN or CFU) Total coliform (MPN or CFU)	Aluminum Antimony Arsenic Barium Bismuth Boron Cadmium Chromium Cobalt Lead Molybdenum Nickel Selenium Silver Strontium Thallium Tin Titanium Uranium Vanadium

APPENDIX F – Water Quality Analysis Groups

Table 1 - Schedule of Sample Analysis

Parameters	Spring	Summer	Fall
[redacted]			
Group B - Inorganic parameters	X	X	X
Group C - Calculated parameters	X	X	X
Group D - Standard metals	X	X	X
Group E - Microbiological parameters	X	X	X
Group F - Additional metals	X		

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CERTIFICATE OF ANALYSIS

Work Order	: **HA2501247**		
Client	: **WSP Canada Inc.**	Laboratory	: ALS Environmental - Halifax
Contact	: Naomi Giles	Account Manager	: Amanda Overholster
Address	: 1 Spectacle Lake Drive Dartmouth Nova Scotia Canada B3B 1X7	Address	: 13-100 Wright Ave Dartmouth NS Canada B3B 1L2
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: CA0052759.2572	Date Samples Received	: 30-Apr-2025 14:56
PO	: ----	Date Analysis Commenced	: 01-May-2025
C-O-C number	: ----	Issue Date	: 07-May-2025 17:18
Sampler	: Client		
Site	: ----		
Quote number	: HRM-2025-0160 Water Quality Monitoring (X)		
No. of samples received	: 7		
No. of samples analysed	: 7		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

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

Signatories	*Position*	*Laboratory Department*
Nataliia Makovetska		Inorganics, Winnipeg, Manitoba
Jiaxi Wang	Supervisor - Water Chemistry	Microbiology, Dartmouth, Nova Scotia
Jon Fisher	Production Manager, Environmental	Metals, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Inorganics, Dartmouth, Nova Scotia
Jon Fisher	Production Manager, Environmental	Inorganics, Winnipeg, Manitoba
Kevin Baxter	Supervisor - Inorganic	Inorganics, Winnipeg, Manitoba
Robyn MacCormack	Analyst	Administration, Dartmouth, Nova Scotia
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Dartmouth, Nova Scotia
Walt Kippenhuck	Supervisor - Inorganic	Metals, Waterloo, Ontario

General Comments

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
%	percent
CU	colour units (1 cu = 1 mg/l pt)
L	litres
meq/L	milliequivalents per litre
mg/L	milligrams per litre
MPN/100mL	most probable number per hundred millilitres
NTU	nephelometric turbidity units
pH units	pH units
µg/L	micrograms per litre
µg/sample	micrograms per sample
µS/cm	microsiemens per centimetre

<: 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
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLUI	Detection Limit Raised: Unknown interference generated an apparent false positive test result.

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

				Client sample ID	KL-1	KL-5	KL-6	KL-7	PML-1
				Client sampling date / time	30-Apr-2025 13:05	30-Apr-2025 13:30	30-Apr-2025 13:40	30-Apr-2025 12:10	30-Apr-2025 10:50
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501247-001	HA2501247-002	HA2501247-003	HA2501247-004	HA2501247-005
					Result	Result	Result	Result	Result
Sample Preparation									
Volume filtered	----	EF870B/HA	0.001	L	0.100	0.100	0.100	0.100	0.100
Physical Tests									
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290/WT	1.2	mg/L	8.8	7.0	9.3	6.7	7.6
Alkalinity, carbonate (as CO3)	3812-32-6	E290/WT	1.0	mg/L	<0.6	<0.6	<0.6	<0.6	<0.6
Alkalinity, hydroxide (as OH)	14280-30-9	E290/WT	1.0	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L	7.2	5.7	7.6	5.5	6.2
Colour, apparent	----	E330/WT	2.0	CU	41.5	35.3	37.5	34.3	32.7
Conductivity	----	E100/WT	1.0	µS/cm	312	314	306	309	331
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/WT	0.50	mg/L	27.0	26.6	26.6	26.6	28.4
Langelier index (@ 20°C)	----	EC105A/WT	0.010	-	-2.80	-2.88	-2.69	-3.01	-2.82
Langelier index (@ 4°C)	----	EC105A/WT	0.010	-	-3.05	-3.13	-2.94	-3.26	-3.07
pH	----	E108/HA	0.10	pH units	6.78	6.81	6.87	6.69	6.81
pH, saturation (@ 20°C)	----	EC105A/WT	0.010	pH units	9.58	9.69	9.56	9.70	9.63
pH, saturation (@ 4°C)	----	EC105A/WT	0.010	pH units	9.83	9.94	9.81	9.96	9.88
Solids, total dissolved [TDS]	----	E162/HA	10	mg/L	171 DLDS	177 DLDS	171 DLDS	178 DLDS	182 DLDS
Solids, total suspended [TSS]	----	E160/HA	3.0	mg/L	19.8	<3.0	<3.0	<3.0	<3.0
Turbidity	----	E121/WT	0.10	NTU	4.11	0.81	0.90	0.78	0.65
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	0.0069	0.0115	0.0073	0.0111	0.0073
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L	78.2	80.3	77.3	79.2	84.1
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	0.030	0.028	0.032	0.027	0.028

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

				Client sample ID	KL-1	KL-5	KL-6	KL-7	PML-1
				Client sampling date / time	30-Apr-2025 13:05	30-Apr-2025 13:30	30-Apr-2025 13:40	30-Apr-2025 12:10	30-Apr-2025 10:50
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501247-001	HA2501247-002	HA2501247-003	HA2501247-004	HA2501247-005
					Result	Result	Result	Result	Result
Anions and Nutrients									
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L	0.221	0.330	0.236	0.193	0.194
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	0.179	0.251	0.163	0.248	0.309
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0032	mg/L	0.179	0.251	0.163	0.248	0.309
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-U/WT	0.0020	mg/L	0.0108	0.0065	0.0074	0.0046	0.0041
Silicate (as SiO2)	7631-86-9	E392/WP	0.50	mg/L	2.74	2.91	2.75	2.90	2.89
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	9.66	9.62	9.67	9.58	10.5
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/WT	0.50	mg/L	5.94	5.75	5.97	5.40	5.64
Microbiological Tests									
Coliforms, total	----	E010/HA	1	MPN/100 mL	411	308	816	137	488
Coliforms, Escherichia coli [E. coli]	----	E010/HA	1	MPN/100 mL	2	3	1	Not Detected	20
Ion Balance									
Anion sum	----	EC101A/WT	0.10	meq/L	2.56	2.60	2.55	2.56	2.74
Cation sum (total)	----	EC101A/WT	0.10	meq/L	2.54	2.46	2.49	2.53	2.65
Ion balance (cations/anions)	----	EC101A/WT	0.01	%	99.2	94.6	97.6	98.8	96.7
Total Metals									
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L	0.294	0.141	0.160	0.131	0.118
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L	0.00034	0.00026	0.00030	0.00024	0.00022

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

				Client sample ID	KL-1	KL-5	KL-6	KL-7	PML-1
				Client sampling date / time	30-Apr-2025 13:05	30-Apr-2025 13:30	30-Apr-2025 13:40	30-Apr-2025 12:10	30-Apr-2025 10:50
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501247-001	HA2501247-002	HA2501247-003	HA2501247-004	HA2501247-005
					Result	Result	Result	Result	Result
Total Metals									
Barium, total	7440-39-3	E420/WT	0.00010	mg/L	0.0163	0.0245	0.0129	0.0243	0.0301
Beryllium, total	7440-41-7	E420/WT	0.000020	mg/L	0.000044	0.000034	0.000037	0.000036	0.000031
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	7440-42-8	E420/WT	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L	0.0000189	0.0000209	0.0000201	0.0000189	0.0000134
Calcium, total	7440-70-2	E420/WT	0.100	mg/L	8.72	8.60	8.66	8.58	9.10
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L	0.000166	0.000101	0.000120	0.000094	0.000103
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L	0.00052	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L	0.00019	<0.00010	0.00011	<0.00010	<0.00010
Copper, total	7440-50-8	E420/WT	0.00050	mg/L	0.00099	0.00079	0.00081	0.00074	0.00078
Iron, total	7439-89-6	E420/WT	0.010	mg/L	0.290	0.113	0.113	0.091	0.086
Lead, total	7439-92-1	E420/WT	0.000050	mg/L	0.000341	0.000203	0.000238	0.000183	0.000144
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L	0.0016	<0.0010	0.0014	<0.0010	<0.0010
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L	1.28	1.25	1.22	1.27	1.37
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L	0.0344	0.0212	0.0236	0.0200	0.0145
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L	0.000232	0.000147	0.000252	0.000136	0.000149
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L	0.00086	0.00060	0.00071	0.00060	0.00057
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium, total	7440-09-7	E420/WT	0.050	mg/L	0.974	0.982	0.922	0.982	1.10
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L	0.00222	0.00211	0.00212	0.00210	0.00226
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L	0.000073	0.000063	0.000073	0.000058	0.000065

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

				Client sample ID	KL-1	KL-5	KL-6	KL-7	PML-1
				Client sampling date / time	30-Apr-2025 13:05	30-Apr-2025 13:30	30-Apr-2025 13:40	30-Apr-2025 12:10	30-Apr-2025 10:50
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501247-001	HA2501247-002	HA2501247-003	HA2501247-004	HA2501247-005
					Result	Result	Result	Result	Result
Total Metals									
Silicon (as SiO2), total	7631-86-9	EC420.SiO2/WT	0.25	mg/L	2.95	2.74	2.63	2.70	2.72
Silicon, total	7440-21-3	E420/WT	0.10	mg/L	1.38	1.28	1.23	1.26	1.27
Silver, total	7440-22-4	E420/WT	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	7440-23-5	E420/WT	0.050	mg/L	44.4	43.3	43.9	45.0	46.9
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L	0.0440	0.0406	0.0444	0.0394	0.0430
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L	3.17	3.07	3.17	3.07	3.43
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin, total	7440-31-5	E420/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L	0.00627	0.00147	0.00153	<0.00120 DLUI	0.00115
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L	0.000216	0.000104	0.000229	0.000107	0.000100
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L	0.00079	<0.00050	0.00059	<0.00050	<0.00050
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L	0.0058	0.0051	0.0046	0.0054	0.0044
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Plant Pigments									
Chlorophyll a	479-61-8	EC870B/WP	0.010	µg/L	1.92	0.855	1.28	0.908	0.758
Chlorophyll a	479-61-8	E870B/WP	0.0020	µg/sample	0.192	0.0855	0.128	0.0908	0.0758

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

Analytical Results

Sub-Matrix: Surface Water (Matrix: Water)				Client sample ID	PML-2	HWY-102-2	----	----	----
				Client sampling date / time	30-Apr-2025 11:05	30-Apr-2025 14:05	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501247-006	HA2501247-007	----	----	----
					Result	Result	----	----	----
Sample Preparation									
Volume filtered	----	EF870B/HA	0.001	L	0.100	0.100	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290/WT	1.2	mg/L	7.4	6.1	----	----	----
Alkalinity, carbonate (as CO3)	3812-32-6	E290/WT	1.0	mg/L	<0.6	<0.6	----	----	----
Alkalinity, hydroxide (as OH)	14280-30-9	E290/WT	1.0	mg/L	<0.3	<0.3	----	----	----
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L	6.1	5.0	----	----	----
Colour, apparent	----	E330/WT	2.0	CU	31.4	41.5	----	----	----
Conductivity	----	E100/WT	1.0	µS/cm	337	557	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/WT	0.50	mg/L	29.0	37.6	----	----	----
Langelier index (@ 20°C)	----	EC105A/WT	0.010	-	-2.87	-3.30	----	----	----
Langelier index (@ 4°C)	----	EC105A/WT	0.010	-	-3.12	-3.56	----	----	----
pH	----	E108/HA	0.10	pH units	6.75	6.33	----	----	----
pH, saturation (@ 20°C)	----	EC105A/WT	0.010	pH units	9.62	9.64	----	----	----
pH, saturation (@ 4°C)	----	EC105A/WT	0.010	pH units	9.87	9.88	----	----	----
Solids, total dissolved [TDS]	----	E162/HA	10	mg/L	180 DLDS	304 DLDS	----	----	----
Solids, total suspended [TSS]	----	E160/HA	3.0	mg/L	<3.0	<3.0	----	----	----
Turbidity	----	E121/WT	0.10	NTU	0.65	0.44	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	0.0122	0.0106	----	----	----
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L	85.1	150	----	----	----
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	0.029	0.028	----	----	----

Analytical Results

Sub-Matrix: Surface Water (Matrix: Water)				Client sample ID	PML-2	HWY-102-2	----	----	----
				Client sampling date / time	30-Apr-2025 11:05	30-Apr-2025 14:05	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501247-006	HA2501247-007	----	----	----
					Result	Result	----	----	----
Anions and Nutrients									
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L	0.206	0.272	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	0.325	0.149	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0032	mg/L	0.325	0.149	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.010	<0.010	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	<0.0010	<0.0010	----	----	----
Phosphorus, total	7723-14-0	E372-U/WT	0.0020	mg/L	0.0046	0.0105	----	----	----
Silicate (as SiO2)	7631-86-9	E392/WP	0.50	mg/L	2.92	3.02	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	10.5	14.8	----	----	----
Organic / Inorganic Carbon									
Carbon, total organic [TOC]	----	E355-L/WT	0.50	mg/L	5.73	6.82	----	----	----
Microbiological Tests									
Coliforms, total	----	E010/HA	1	MPN/100 mL	1300	727	----	----	----
Coliforms, Escherichia coli [E. coli]	----	E010/HA	1	MPN/100 mL	56	4	----	----	----
Ion Balance									
Anion sum	----	EC101A/WT	0.10	meq/L	2.76	4.65	----	----	----
Cation sum (total)	----	EC101A/WT	0.10	meq/L	2.70	4.53	----	----	----
Ion balance (cations/anions)	----	EC101A/WT	0.01	%	97.8	97.4	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L	0.120	0.134	----	----	----
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L	<0.00010	0.00013	----	----	----
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L	0.00023	0.00019	----	----	----

Analytical Results

Sub-Matrix: Surface Water (Matrix: Water)				Client sample ID	PML-2	HWY-102-2	----	----	----
				Client sampling date / time	30-Apr-2025 11:05	30-Apr-2025 14:05	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501247-006	HA2501247-007	----	----	----
					Result	Result	----	----	----
Total Metals									
Barium, total	7440-39-3	E420/WT	0.00010	mg/L	0.0322	0.114	----	----	----
Beryllium, total	7440-41-7	E420/WT	0.000020	mg/L	0.000030	<0.000020	----	----	----
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Boron, total	7440-42-8	E420/WT	0.010	mg/L	<0.010	<0.010	----	----	----
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L	0.0000171	0.0000195	----	----	----
Calcium, total	7440-70-2	E420/WT	0.100	mg/L	9.36	12.2	----	----	----
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L	0.000099	0.000036	----	----	----
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L	<0.00010	0.00015	----	----	----
Copper, total	7440-50-8	E420/WT	0.00050	mg/L	0.00082	0.00119	----	----	----
Iron, total	7439-89-6	E420/WT	0.010	mg/L	0.109	0.225	----	----	----
Lead, total	7439-92-1	E420/WT	0.000050	mg/L	0.000148	0.000163	----	----	----
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L	<0.0010	<0.0010	----	----	----
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L	1.37	1.74	----	----	----
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L	0.0182	0.0244	----	----	----
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L	0.000140	0.000101	----	----	----
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L	0.00057	0.00072	----	----	----
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L	<0.050	<0.050	----	----	----
Potassium, total	7440-09-7	E420/WT	0.050	mg/L	1.13	1.45	----	----	----
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L	0.00232	0.00285	----	----	----
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L	0.000072	<0.000050	----	----	----

Analytical Results

Sub-Matrix: Surface Water (Matrix: Water)				Client sample ID	PML-2	HWY-102-2	----	----	----
				Client sampling date / time	30-Apr-2025 11:05	30-Apr-2025 14:05	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	HA2501247-006	HA2501247-007	----	----	----
					Result	Result	----	----	----
Total Metals									
Silicon (as SiO2), total	7631-86-9	EC420.SiO2/WT	0.25	mg/L	2.78	2.93	----	----	----
Silicon, total	7440-21-3	E420/WT	0.10	mg/L	1.30	1.37	----	----	----
Silver, total	7440-22-4	E420/WT	0.000010	mg/L	<0.000010	<0.000010	----	----	----
Sodium, total	7440-23-5	E420/WT	0.050	mg/L	47.7	85.5	----	----	----
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L	0.0430	0.0619	----	----	----
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L	3.47	4.82	----	----	----
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L	<0.00020	<0.00020	----	----	----
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L	<0.000010	<0.000010	----	----	----
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Tin, total	7440-31-5	E420/WT	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L	0.00120	0.00209	----	----	----
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L	<0.00010	0.00033	----	----	----
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L	0.000084	0.000011	----	----	----
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L	0.0047	0.0094	----	----	----
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L	<0.00020	<0.00020	----	----	----
Plant Pigments									
Chlorophyll a	479-61-8	EC870B/WP	0.010	µg/L	0.566	1.00	----	----	----
Chlorophyll a	479-61-8	E870B/WP	0.0020	µg/sample	0.0566	0.100	----	----	----

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

ALS Canada Ltd.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **HA2501247**	Page	: 1 of 27
Client	: **WSP Canada Inc.**	Laboratory	: ALS Environmental - Halifax
Contact	: Naomi Giles	Account Manager	: Amanda Overholster
Address	: 1 Spectacle Lake Drive Dartmouth NS Canada B3B 1X7	Address	: 13-100 Wright Ave Dartmouth, Nova Scotia Canada B3B 1L2
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: CA0052759.2572	Date Samples Received	: 30-Apr-2025 14:56
PO	: ----	Issue Date	: 07-May-2025 17:18
C O C number	: ----		
Sampler	: Client		
Site	: ----		
Quote number	: HRM-2025-0160 Water Quality Monitoring (X)		
No of samples received	: 7		
No. of samples analysed	: 7		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

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

Outliers : Frequency of Quality Control Samples

- 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 : Analytical Method / 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) HWY-102-2	E298	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) KL-1	E298	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) KL-5	E298	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) KL-6	E298	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) KL-7	E298	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) PML-1	E298	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) PML-2	E298	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE HWY-102-2	E235.Cl	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE KL-1	E235.Cl	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE KL-5	E235.Cl	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE KL-6	E235.Cl	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE KL-7	E235.Cl	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE PML-1	E235.Cl	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE PML-2	E235.Cl	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE HWY-102-2	E378-U	30-Apr-2025	02-May-2025	3 days	2 days	✓	05-May-2025	3 days	2 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE KL-1	E378-U	30-Apr-2025	02-May-2025	3 days	2 days	✓	05-May-2025	3 days	2 days	✖ EHT

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE KL-5	E378-U	30-Apr-2025	02-May-2025	3 days	2 days	✓	05-May-2025	3 days	2 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE KL-6	E378-U	30-Apr-2025	02-May-2025	3 days	2 days	✓	05-May-2025	3 days	2 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE KL-7	E378-U	30-Apr-2025	02-May-2025	3 days	2 days	✓	05-May-2025	3 days	2 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE PML-1	E378-U	30-Apr-2025	02-May-2025	3 days	2 days	✓	05-May-2025	3 days	2 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE PML-2	E378-U	30-Apr-2025	02-May-2025	3 days	2 days	✓	05-May-2025	3 days	2 days	✖ EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE HWY-102-2	E235.F	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE KL-1	E235.F	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE KL-5	E235.F	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE KL-6	E235.F	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE KL-7	E235.F	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE PML-1	E235.F	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE PML-2	E235.F	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE HWY-102-2	E235.NO3	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE KL-1	E235.NO3	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE KL-5	E235.NO3	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE KL-6	E235.NO3	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE KL-7	E235.NO3	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE PML-1	E235.NO3	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE PML-2	E235.NO3	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE HWY-102-2	E235.NO2	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE KL-1	E235.NO2	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE KL-5	E235.NO2	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE KL-6	E235.NO2	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE KL-7	E235.NO2	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE PML-1	E235.NO2	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE PML-2	E235.NO2	30-Apr-2025	02-May-2025	3 days	2 days	✓	02-May-2025	3 days	2 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE HWY-102-2	E392	30-Apr-2025	----	----	----		05-May-2025	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE KL-1	E392	30-Apr-2025	----	----	----		05-May-2025	28 days	5 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE KL-5	E392	30-Apr-2025	----	----	----		05-May-2025	28 days	5 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE KL-6	E392	30-Apr-2025	----	----	----		05-May-2025	28 days	5 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE KL-7	E392	30-Apr-2025	----	----	----		05-May-2025	28 days	5 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE PML-1	E392	30-Apr-2025	----	----	----		05-May-2025	28 days	5 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE PML-2	E392	30-Apr-2025	----	----	----		05-May-2025	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE HWY-102-2	E235.SO4	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE KL-1	E235.SO4	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE KL-5	E235.SO4	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE KL-6	E235.SO4	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE KL-7	E235.SO4	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE PML-1	E235.SO4	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE PML-2	E235.SO4	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) HWY-102-2	E318	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) KL-1	E318	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) KL-5	E318	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) KL-6	E318	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) KL-7	E318	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) PML-1	E318	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) PML-2	E318	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) HWY-102-2	E372-U	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) KL-1	E372-U	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) KL-5	E372-U	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) KL-6	E372-U	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) KL-7	E372-U	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) PML-1	E372-U	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) PML-2	E372-U	30-Apr-2025	05-May-2025	28 days	5 days	✓	05-May-2025	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) HWY-102-2	E010	30-Apr-2025	----	----	----		01-May-2025	30 hrs	26 hrs	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) KL-5	E010	30-Apr-2025	----	----	----		01-May-2025	30 hrs	26 hrs	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) KL-6	E010	30-Apr-2025	----	----	----		01-May-2025	30 hrs	26 hrs	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) KL-1	E010	30-Apr-2025	----	----	----		01-May-2025	30 hrs	27 hrs	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) KL-7	E010	30-Apr-2025	----	----	----		01-May-2025	30 hrs	28 hrs	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) PML-1	E010	30-Apr-2025	----	----	----		01-May-2025	30 hrs	29 hrs	✓
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)										
Sterile HDPE (Sodium thiosulphate) PML-2	E010	30-Apr-2025	----	----	----		01-May-2025	30 hrs	29 hrs	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) HWY-102-2	E355-L	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) KL-1	E355-L	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times 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) KL-5	E355-L	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) KL-6	E355-L	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) KL-7	E355-L	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) PML-1	E355-L	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) PML-2	E355-L	30-Apr-2025	03-May-2025	28 days	3 days	✓	05-May-2025	28 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE HWY-102-2	E290	30-Apr-2025	02-May-2025	14 days	2 days	✓	02-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE KL-1	E290	30-Apr-2025	02-May-2025	14 days	2 days	✓	02-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE KL-5	E290	30-Apr-2025	02-May-2025	14 days	2 days	✓	02-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE KL-6	E290	30-Apr-2025	02-May-2025	14 days	2 days	✓	02-May-2025	14 days	2 days	✓

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE KL-7	E290	30-Apr-2025	02-May-2025	14 days	2 days	✓	02-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE PML-1	E290	30-Apr-2025	02-May-2025	14 days	2 days	✓	02-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE PML-2	E290	30-Apr-2025	02-May-2025	14 days	2 days	✓	02-May-2025	14 days	2 days	✓
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE HWY-102-2	E330	30-Apr-2025	----	----	----		05-May-2025	48 hrs	118 hrs	✖ EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE KL-6	E330	30-Apr-2025	----	----	----		05-May-2025	48 hrs	118 hrs	✖ EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE KL-1	E330	30-Apr-2025	----	----	----		05-May-2025	48 hrs	119 hrs	✖ EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE KL-5	E330	30-Apr-2025	----	----	----		05-May-2025	48 hrs	119 hrs	✖ EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE KL-7	E330	30-Apr-2025	----	----	----		05-May-2025	48 hrs	120 hrs	✖ EHT
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE PML-1	E330	30-Apr-2025	----	----	----		05-May-2025	48 hrs	121 hrs	✖ EHT

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Colour (Apparent) by Spectrometer										
HDPE PML-2	E330	30-Apr-2025	----	----	----		05-May-2025	48 hrs	121 hrs	✖ EHT
Physical Tests : Conductivity in Water										
HDPE HWY-102-2	E100	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE KL-1	E100	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE KL-5	E100	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE KL-6	E100	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE KL-7	E100	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE PML-1	E100	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE PML-2	E100	30-Apr-2025	02-May-2025	28 days	2 days	✓	02-May-2025	28 days	2 days	✓
Physical Tests : pH by Meter										
HDPE HWY-102-2	E108	30-Apr-2025	02-May-2025	0.25 hrs	43 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	43 hrs	✖ EHTR-FM

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE KL-6	E108	30-Apr-2025	02-May-2025	0.25 hrs	43 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	43 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE KL-1	E108	30-Apr-2025	02-May-2025	0.25 hrs	44 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	44 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE KL-5	E108	30-Apr-2025	02-May-2025	0.25 hrs	44 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	44 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE KL-7	E108	30-Apr-2025	02-May-2025	0.25 hrs	45 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	45 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE PML-1	E108	30-Apr-2025	02-May-2025	0.25 hrs	46 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	46 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE PML-2	E108	30-Apr-2025	02-May-2025	0.25 hrs	46 hrs	✖ EHTR-FM	02-May-2025	0.25 hrs	46 hrs	✖ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE HWY-102-2	E162	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE KL-1	E162	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE KL-5	E162	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE KL-6	E162	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE KL-7	E162	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE PML-1	E162	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE PML-2	E162	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE HWY-102-2	E160	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE KL-1	E160	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE KL-5	E160	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE KL-6	E160	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE KL-7	E160	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE PML-1	E160	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE PML-2	E160	30-Apr-2025	----	----	----		06-May-2025	7 days	6 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE HWY-102-2	E121	30-Apr-2025	----	----	----		03-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE KL-1	E121	30-Apr-2025	----	----	----		03-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE KL-5	E121	30-Apr-2025	----	----	----		03-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE KL-6	E121	30-Apr-2025	----	----	----		03-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE KL-7	E121	30-Apr-2025	----	----	----		03-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE PML-1	E121	30-Apr-2025	----	----	----		03-May-2025	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE PML-2	E121	30-Apr-2025	----	----	----		03-May-2025	3 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube HWY-102-2	E870B	30-Apr-2025	07-May-2025	28 days	7 days	✓	07-May-2025	28 days	7 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube KL-1	E870B	30-Apr-2025	07-May-2025	28 days	7 days	✓	07-May-2025	28 days	7 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube KL-5	E870B	30-Apr-2025	07-May-2025	28 days	7 days	✓	07-May-2025	28 days	7 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube KL-6	E870B	30-Apr-2025	07-May-2025	28 days	7 days	✓	07-May-2025	28 days	7 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube KL-7	E870B	30-Apr-2025	07-May-2025	28 days	7 days	✓	07-May-2025	28 days	7 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube PML-1	E870B	30-Apr-2025	07-May-2025	28 days	7 days	✓	07-May-2025	28 days	7 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry (Support Lab Filtered µg)										
Opaque HDPE tube PML-2	E870B	30-Apr-2025	07-May-2025	28 days	7 days	✓	07-May-2025	28 days	7 days	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE HWY-102-2	EF870B	30-Apr-2025	----	----	----		01-May-2025	48 hrs	21 hrs	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE KL-1	EF870B	30-Apr-2025	----	----	----		01-May-2025	48 hrs	22 hrs	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE KL-5	EF870B	30-Apr-2025	----	----	----		01-May-2025	48 hrs	22 hrs	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE KL-6	EF870B	30-Apr-2025	----	----	----		01-May-2025	48 hrs	22 hrs	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE KL-7	EF870B	30-Apr-2025	----	----	----		01-May-2025	48 hrs	23 hrs	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE PML-2	EF870B	30-Apr-2025	----	----	----		01-May-2025	48 hrs	24 hrs	✓
Sample Preparation : Chlorophyll-a Filtration by Support Laboratory										
Opaque HDPE PML-1	EF870B	30-Apr-2025	----	----	----		01-May-2025	48 hrs	25 hrs	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) HWY-102-2	E420	30-Apr-2025	02-May-2025	180 days	2 days	✓	03-May-2025	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) KL-1	E420	30-Apr-2025	02-May-2025	180 days	2 days	✓	03-May-2025	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) KL-5	E420	30-Apr-2025	02-May-2025	180 days	2 days	✓	03-May-2025	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) KL-6	E420	30-Apr-2025	02-May-2025	180 days	2 days	✓	03-May-2025	180 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times 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)										
KL-7	E420	30-Apr-2025	02-May-2025	180 days	2 days	✓	03-May-2025	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
PML 2	E420	30-Apr-2025	02-May-2025	180 days	2 days	✓	03-May-2025	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
PML-1	E420	30-Apr-2025	02-May-2025	180 days	3 days	✓	03-May-2025	180 days	3 days	✓

Legend & Qualifier Definitions

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

EHT: Exceeded ALS recommended hold time prior to analysis.

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)							
Total Coliforms and E. coli (Enzyme Substrate)	E010	1975295	1	12	8.3	5.0	✓
Conductivity in Water	E100	1977393	1	15	6.6	5.0	✓
pH by Meter	E108	1976622	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1978458	1	19	5.2	5.0	✓
TSS by Gravimetry	E160	1981869	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1981870	1	13	7.6	5.2	✓
Chloride in Water by IC	E235.Cl	1977390	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	1977388	1	15	6.6	5.0	✓
Nitrite in Water by IC	E235.NO2	1977389	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	1977387	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1977391	1	16	6.2	5.0	✓
Alkalinity Species by Titration	E290	1977394	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1978498	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1978496	1	20	5.0	5.0	✓
Colour (Apparent) by Spectrometer	E330	1980070	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1978499	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1978497	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1977396	1	17	5.8	5.0	✓
Reactive Silica by Colourimetry	E392	1980235	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1977902	1	20	5.0	5.0	✓
Chlorophyll-a by Fluorometry (Support Lab Filtered µg)	E870B	1983805	0	13	0.0	5.0	✗
Laboratory Control Samples (LCS)							
Conductivity in Water	E100	1977393	1	15	6.6	5.0	✓
pH by Meter	E108	1976622	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1978458	1	19	5.2	5.0	✓
TSS by Gravimetry	E160	1981869	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1981870	1	13	7.6	5.2	✓
Chloride in Water by IC	E235.Cl	1977390	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	1977388	1	15	6.6	5.0	✓
Nitrite in Water by IC	E235.NO2	1977389	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	1977387	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1977391	1	16	6.2	5.0	✓
Alkalinity Species by Titration	E290	1977394	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1978498	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1978496	1	20	5.0	5.0	✓
Colour (Apparent) by Spectrometer	E330	1980070	1	20	5.0	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							
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1978499	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1978497	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1977396	1	17	5.8	5.0	✓
Reactive Silica by Colourimetry	E392	1980235	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1977902	1	20	5.0	5.0	✓
Chlorophyll-a by Fluorometry (Support Lab Filtered µg)	E870B	1983805	1	13	7.6	5.0	✓
Method Blanks (MB)							
Total Coliforms and E. coli (Enzyme Substrate)	E010	1975295	1	12	8.3	5.0	✓
Conductivity in Water	E100	1977393	1	15	6.6	5.0	✓
Turbidity by Nephelometry	E121	1978458	1	19	5.2	5.0	✓
TSS by Gravimetry	E160	1981869	1	15	6.6	5.0	✓
TDS by Gravimetry	E162	1981870	1	13	7.6	5.2	✓
Chloride in Water by IC	E235.Cl	1977390	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	1977388	1	15	6.6	5.0	✓
Nitrite in Water by IC	E235.NO2	1977389	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	1977387	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1977391	1	16	6.2	5.0	✓
Alkalinity Species by Titration	E290	1977394	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	1978498	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1978496	1	20	5.0	5.0	✓
Colour (Apparent) by Spectrometer	E330	1980070	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1978499	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1978497	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1977396	1	17	5.8	5.0	✓
Reactive Silica by Colourimetry	E392	1980235	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1977902	1	20	5.0	5.0	✓
Chlorophyll-a by Fluorometry (Support Lab Filtered µg)	E870B	1983805	1	13	7.6	5.0	✓
Matrix Spikes (MS)							
Chloride in Water by IC	E235.Cl	1977390	1	16	6.2	5.0	✓
Fluoride in Water by IC	E235.F	1977388	1	15	6.6	5.0	✓
Nitrite in Water by IC	E235.NO2	1977389	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	1977387	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1977391	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1978498	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1978496	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1978499	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1978497	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1977396	1	17	5.8	5.0	✓
Reactive Silica by Colourimetry	E392	1980235	1	20	5.0	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) - Continued							
Total Metals in Water by CRC ICPMS	E420	1977902	1	20	5.0	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Coliforms and E. coli (Enzyme Substrate)	E010 ALS Environmental - Halifax	Water	APHA 9223 (mod)	The enzyme substrate test simultaneously detects Total Coliforms and E. coli in a 100 mL sample after incubation at 35.0 ±0.5°C for either 18 or 24 hours (dependent on reagent used).
Conductivity in Water	E100 ALS Environmental - Waterloo	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 ALS Environmental - Halifax	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 ALS Environmental - Waterloo	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 ALS Environmental - Halifax	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Halifax	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl ALS Environmental - Waterloo	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 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate in Water by IC	E235.NO3 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Waterloo	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 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Colour (Apparent) by Spectrometer	E330 ALS Environmental - Waterloo	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters. 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 ALS Environmental - Waterloo	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 carbonate-based Inorganic Carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. Forms of carbon associated with inorganic or organic molecules (e.g. SCN and CN) are included in NPOC if they are not removed by purging under acidic conditions. Notably, NPOC excludes most volatile organic compounds and free cyanide. For samples where the majority of Total Carbon is inorganic, this method provides greater accuracy and reliability versus the TOC by subtraction method (TC minus TIC).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Waterloo	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 0.001 mg/L)	E378-U ALS Environmental - Waterloo	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically 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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Reactive Silica by Colourimetry	E392 ALS Environmental - Winnipeg	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Waterloo	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.
Chlorophyll-a by Fluorometry (Support Lab Filtered µg)	E870B ALS Environmental - Winnipeg	Water	EPA 445.0 (mod)	Chlorophyll-a is determined by solvent extraction followed with analysis by fluorometry using the non-acidification procedure. Sampling volume not provided by client.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Waterloo	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed as 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 hardness is a property of water due to dissolved divalent cations. In non-turbid waters, Hardness from total Ca/Mg is normally comparable to Dissolved Hardness, but may be biased high if particulate forms of Ca or Mg are present.
Ion Balance using Total Metals	EC101A ALS Environmental - Waterloo	Water	APHA 1030E	Cation Sum (using total metals), Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
Saturation Index using Laboratory pH (Ca-T)	EC105A ALS Environmental - Waterloo	Water	APHA 2330B	Langelier Index provides an indication of scale formation potential at a given pH and temperature, and is calculated as per APHA 2330B Saturation Index. Positive values indicate oversaturation with respect to CaCO3. Negative values indicate undersaturation of CaCO3. This calculation uses laboratory pH measurements and provides estimates of Langelier Index at temperatures of 4, 15, 20, 25, 66, and 77°C. Ryznar Stability Index is an alternative index used for scale formation and corrosion potential.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Waterloo	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Total Silicon as Silica (Calculation)	EC420.SiO2 ALS Environmental - Waterloo	Water	N/A	Total Silicon (as SiO2) is a calculated parameter. Total Silicon (as SiO2 mg/L) = 2.139 x Total Silicon (mg/L).
Chlorophyll-a by Fluorometry (Support Lab Filtered µg/L)	EC870B ALS Environmental - Winnipeg	Water	CALC	Convert results to sample concentration based on support lab filter information.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Chlorophyll-a Filtration by Support Laboratory	EF870B ALS Environmental - Halifax	Water	EPA 445.0 (mod)	Filtration for chlorophyll-a analysis

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Waterloo	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318 ALS Environmental - Waterloo	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Waterloo	Water		Preparation for Total Organic Carbon by Combustion
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Waterloo	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Chlorophyll-a Extraction (Support Lab Filtered)	EP870B ALS Environmental - Winnipeg	Water	EPA 445.0 (mod)	Chlorophyll-a solvent extraction.

QUALITY CONTROL REPORT

Work Order	: **HA2501247**	Page	: 1 of 13
Client	: WSP Canada Inc.	Laboratory	: ALS Environmental - Halifax
Contact	: Naomi Giles	Account Manager	: Amanda Overholster
Address	: 1 Spectacle Lake Drive Dartmouth NS Canada B3B 1X7	Address	: 13-100 Wright Ave Dartmouth, Nova Scotia Canada B3B 1L2
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: CA0052759.2572	Date Samples Received	: 30-Apr-2025 14:56
PO	: ----	Date Analysis Commenced	: 01-May-2025
C-O-C number	: ----	Issue Date	: 07-May-2025 17:17
Sampler	: Client		
Site	: ----		
Quote number	: HRM-2025-0160 Water Quality Monitoring (X)		
No. of samples received	: 7		
No. of samples analysed	: 7		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Nataliia Makovetska		Winnipeg Inorganics, Winnipeg, Manitoba
Jiaxi Wang	Supervisor - Water Chemistry	Halifax Microbiology, Dartmouth, Nova Scotia
Jon Fisher	Production Manager, Environmental	Halifax Inorganics, Dartmouth, Nova Scotia
Jon Fisher	Production Manager, Environmental	Winnipeg Inorganics, Winnipeg, Manitoba
Jon Fisher	Production Manager, Environmental	Waterloo Metals, Waterloo, Ontario
Kevin Baxter	Supervisor - Inorganic	Winnipeg Inorganics, Winnipeg, Manitoba
Robyn MacCormack	Analyst	Halifax Administration, Dartmouth, Nova Scotia
Walt Kippenhuck	Supervisor - Inorganic	Halifax Inorganics, Dartmouth, Nova Scotia
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1976622)											
HA2501224-001	Anonymous	pH	—	E108	0.10	pH units	5.24	5.26	0.343%	4%	—
Physical Tests (QC Lot: 1977393)											
HA2501247-001	KL-1	Conductivity	—	E100	1.0	µS/cm	312	308	1.29%	10%	—
Physical Tests (QC Lot: 1977394)											
HA2501247-001	KL-1	Alkalinity, total (as CaCO3)	—	E290	1.0	mg/L	7.2	7.1	0.1	Diff <2x LOR	—
Physical Tests (QC Lot: 1980070)											
HA2501227-001	Anonymous	Colour, apparent	—	E330	2.0	CU	89.0	88.5	0.589%	20%	—
Physical Tests (QC Lot: 1981869)											
HA2501227-001	Anonymous	Solids, total suspended [TSS]	—	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	—
Physical Tests (QC Lot: 1981870)											
HA2501227-001	Anonymous	Solids, total dissolved [TDS]	—	E162	13	mg/L	84	84	1	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1977387)											
HA2501254-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.042	0.038	0.003	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1977388)											
HA2501254-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.230	0.228	0.699%	20%	—
Anions and Nutrients (QC Lot: 1977389)											
HA2501254-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1977390)											
HA2501254-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	56.5	56.4	0.120%	20%	—
Anions and Nutrients (QC Lot: 1977391)											
HA2501254-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	22.0	21.9	0.304%	20%	—
Anions and Nutrients (QC Lot: 1977396)											
HA2501106-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0036	0.0041	0.0006	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1978496)											
HA2501227-004	Anonymous	Kjeldahl nitrogen, total [TKN]	—	E318	0.050	mg/L	0.316	0.254	0.063	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1978497)											
HA2501227-003	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0039	0.0039	0.00002	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1978498)											
HA2501227-006	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0068	0.0065	0.0003	Diff <2x LOR	—
Anions and Nutrients (QC Lot: 1980235)											

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
Anions and Nutrients (QC Lot: 1980235) - continued											
HA2501198-001	Anonymous	Silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	11.0	11.0	0.204%	20%	—
Organic / Inorganic Carbon (QC Lot: 1978499)											
HA2501227-005	Anonymous	Carbon, total organic [TOC]	—	E355-L	0.50	mg/L	4.19	4.35	0.16	Diff <2x LOR	—
Microbiological Tests (QC Lot: 1975295)											
HA2501240-001	Anonymous	Coliforms, Escherichia coli [E. coli]	—	E010	1	MPN/100mL	5	5	0.00%	65%	—
		Coliforms, total	—	E010	1	MPN/100mL	308	236	26.4%	65%	—
Total Metals (QC Lot: 1977902)											
HA2501247-001	KL-1	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.294	0.294	0.00956%	20%	—
		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	0.00034	0.00036	0.00002	Diff <2x LOR	—
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0163	0.0162	0.805%	20%	—
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	0.000044	0.000044	0.000001	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	<0.010	<0.010	0	Diff <2x LOR	—
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000189	0.0000213	0.0000024	Diff <2x LOR	—
		Calcium, total	7440-70-2	E420	0.100	mg/L	8.72	8.53	2.12%	20%	—
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000166	0.000163	1.94%	20%	—
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.00052	<0.00050	0.00002	Diff <2x LOR	—
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00019	0.00020	0.00001	Diff <2x LOR	—
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00099	0.00100	0.00002	Diff <2x LOR	—
		Iron, total	7439-89-6	E420	0.010	mg/L	0.290	0.281	2.94%	20%	—
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000341	0.000337	0.000003	Diff <2x LOR	—
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0016	0.0016	0.00005	Diff <2x LOR	—
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	1.28	1.26	1.21%	20%	—
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0344	0.0340	1.22%	20%	—
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000232	0.000209	0.000023	Diff <2x LOR	—
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00086	0.00107	0.00021	Diff <2x LOR	—
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	—
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.974	0.948	2.74%	20%	—
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00222	0.00228	2.73%	20%	—
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000073	0.000067	0.000006	Diff <2x LOR	—
		Silicon, total	7440-21-3	E420	0.10	mg/L	1.38	1.35	2.11%	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	44.4	43.4	2.32%	20%	—

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
Total Metals (QC Lot: 1977902) - continued											
HA2501247-001	KL-1	Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0440	0.0431	2.10%	20%	—
		Sulfur, total	7704-34-9	E420	0.50	mg/L	3.17	3.09	0.08	Diff <2x LOR	—
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	—
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	—
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	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	0.00627	0.00576	8.54%	20%	—
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	—
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000216	0.000213	1.07%	20%	—
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00079	0.00076	0.00002	Diff <2x LOR	—
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0058	0.0058	0.00005	Diff <2x LOR	—
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	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: 1977393)						
Conductivity	—	E100	1	µS/cm	<1.0	—
Physical Tests (QCLot: 1977394)						
Alkalinity, total (as CaCO3)	—	E290	1	mg/L	1.0	—
Physical Tests (QCLot: 1978458)						
Turbidity	—	E121	0.1	NTU	<0.10	—
Physical Tests (QCLot: 1980070)						
Colour, apparent	—	E330	2	CU	<2.0	—
Physical Tests (QCLot: 1981869)						
Solids, total suspended [TSS]	—	E160	3	mg/L	<3.0	—
Physical Tests (QCLot: 1981870)						
Solids, total dissolved [TDS]	—	E162	10	mg/L	<10	—
Anions and Nutrients (QCLot: 1977387)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	—
Anions and Nutrients (QCLot: 1977388)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	—
Anions and Nutrients (QCLot: 1977389)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	—
Anions and Nutrients (QCLot: 1977390)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	—
Anions and Nutrients (QCLot: 1977391)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	—
Anions and Nutrients (QCLot: 1977396)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	—
Anions and Nutrients (QCLot: 1978496)						
Kjeldahl nitrogen, total [TKN]	—	E318	0.05	mg/L	<0.050	—
Anions and Nutrients (QCLot: 1978497)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	—
Anions and Nutrients (QCLot: 1978498)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	—
Anions and Nutrients (QCLot: 1980235)						
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	—
Organic / Inorganic Carbon (QCLot: 1978499)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 1978499) - continued						
Carbon, total organic [TOC]	—	E355-L	0.5	mg/L	<0.50	—
Microbiological Tests (QCLot: 1975295)						
Coliforms, Escherichia coli [E. coli]	—	E010	1	MPN/100mL	<1	—
Coliforms, total	—	E010	1	MPN/100mL	<1	—
Total Metals (QCLot: 1977902)						
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	—
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	—
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	—
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	—
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	—
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	—
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	—

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1977902) - continued						
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	—
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	—
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	—
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	—
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	—
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	—
Plant Pigments (QCLot: 1983805)						
Chlorophyll a	479-61-8	E870B	0.002	µg/sample	<0.0020	—

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	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1976622)									
pH	—	E108	—	pH units	7 pH units	100	98.0	102	—
Physical Tests (QCLot: 1977393)									
Conductivity	—	E100	1	µS/cm	1410 µS/cm	99.4	90.0	110	—
Physical Tests (QCLot: 1977394)									
Alkalinity, total (as CaCO3)	—	E290	1	mg/L	150 mg/L	100	85.0	115	—
Physical Tests (QCLot: 1978458)									
Turbidity	—	E121	0.1	NTU	200 NTU	98.0	85.0	115	—
Physical Tests (QCLot: 1980070)									
Colour, apparent	—	E330	2	CU	25 CU	94.4	85.0	115	—
Physical Tests (QCLot: 1981869)									
Solids, total suspended [TSS]	—	E160	3	mg/L	150 mg/L	95.0	85.0	115	—
Physical Tests (QCLot: 1981870)									
Solids, total dissolved [TDS]	—	E162	10	mg/L	1000 mg/L	96.0	85.0	115	—
Anions and Nutrients (QCLot: 1977387)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	98.9	90.0	110	—
Anions and Nutrients (QCLot: 1977388)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.9	90.0	110	—
Anions and Nutrients (QCLot: 1977389)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	99.4	90.0	110	—
Anions and Nutrients (QCLot: 1977390)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.1	90.0	110	—
Anions and Nutrients (QCLot: 1977391)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.9	90.0	110	—
Anions and Nutrients (QCLot: 1977396)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	96.4	80.0	120	—
Anions and Nutrients (QCLot: 1978496)									
Kjeldahl nitrogen, total [TKN]	—	E318	0.05	mg/L	4 mg/L	103	75.0	125	—
Anions and Nutrients (QCLot: 1978497)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.333 mg/L	99.0	80.0	120	—
Anions and Nutrients (QCLot: 1978498)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.0	85.0	115	—

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1980235)									
Silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	—
Organic / Inorganic Carbon (QCLot: 1978499)									
Carbon, total organic [TOC]	—	E355-L	0.5	mg/L	8.57 mg/L	105	80.0	120	—
Total Metals (QCLot: 1977902)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	98.6	80.0	120	—
Antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	102	80.0	120	—
Arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	103	80.0	120	—
Barium, total	7440-39-3	E420	0.0001	mg/L	0.012 mg/L	102	80.0	120	—
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	100	80.0	120	—
Bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	99.6	80.0	120	—
Boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	94.5	80.0	120	—
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	97.2	80.0	120	—
Calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	95.6	80.0	120	—
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.002 mg/L	104	80.0	120	—
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.012 mg/L	96.8	80.0	120	—
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.012 mg/L	96.1	80.0	120	—
Copper, total	7440-50-8	E420	0.0005	mg/L	0.012 mg/L	96.2	80.0	120	—
Iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	94.2	80.0	120	—
Lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	102	80.0	120	—
Lithium, total	7439-93-2	E420	0.001	mg/L	0.012 mg/L	94.0	80.0	120	—
Magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	104	80.0	120	—
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.012 mg/L	96.2	80.0	120	—
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.012 mg/L	100	80.0	120	—
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	95.5	80.0	120	—
Phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	101	80.0	120	—
Potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	98.6	80.0	120	—
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	99.1	80.0	120	—
Selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	96.2	80.0	120	—
Silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	96.1	80.0	120	—
Silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	97.0	80.0	120	—
Sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	99.7	80.0	120	—
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.012 mg/L	101	80.0	120	—
Sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	99.2	80.0	120	—
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	94.9	80.0	120	—

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1977902) - continued									
Thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	99.9	80.0	120	---
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	97.6	80.0	120	---
Tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	99.0	80.0	120	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.012 mg/L	94.8	80.0	120	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	99.3	80.0	120	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	0 mg/L	103	80.0	120	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	98.9	80.0	120	---
Zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	102	80.0	120	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	98.8	80.0	120	---
Plant Pigments (QCLot: 1983805)									
Chlorophyll a	479-61-8	E870B	0.002	µg/sample	1.07 µg/sample	92.2	80.0	120	---

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: 1977387)										
HA2501254-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.45 mg/L	2.5 mg/L	98.1	75.0	125	—
Anions and Nutrients (QCLot: 1977388)										
HA2501254-001	Anonymous	Fluoride	16984-48-8	E235.F	1.04 mg/L	1 mg/L	104	75.0	125	—
Anions and Nutrients (QCLot: 1977389)										
HA2501254-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.500 mg/L	0.5 mg/L	100.0	75.0	125	—
Anions and Nutrients (QCLot: 1977390)										
HA2501254-001	Anonymous	Chloride	16887-00-6	E235.Cl	98.4 mg/L	100 mg/L	98.4	75.0	125	—
Anions and Nutrients (QCLot: 1977391)										
HA2501254-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	99.3 mg/L	100 mg/L	99.3	75.0	125	—
Anions and Nutrients (QCLot: 1977396)										
HA2501106-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0177 mg/L	0.02 mg/L	90.5	70.0	130	—
Anions and Nutrients (QCLot: 1978496)										
HA2501227-004	Anonymous	Kjeldahl nitrogen, total [TKN]	—	E318	2.92 mg/L	2.5 mg/L	117	70.0	130	—
Anions and Nutrients (QCLot: 1978497)										
HA2501227-003	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.101 mg/L	0.1 mg/L	101	70.0	130	—
Anions and Nutrients (QCLot: 1978498)										
HA2501227-006	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.100 mg/L	0.1 mg/L	100	75.0	125	—
Anions and Nutrients (QCLot: 1980235)										
HA2501198-002	Anonymous	Silicate (as SiO2)	7631-86-9	E392	ND mg/L	—	ND	75.0	125	—
Organic / Inorganic Carbon (QCLot: 1978499)										
HA2501227-005	Anonymous	Carbon, total organic [TOC]	—	E355-L	5.09 mg/L	5 mg/L	102	70.0	130	—
Total Metals (QCLot: 1977902)										
HA2501247-002	KL-5	Aluminum, total	7429-90-5	E420	ND mg/L	—	ND	70.0	130	—
		Antimony, total	7440-36-0	E420	0.0480 mg/L	0.05 mg/L	95.9	70.0	130	—
		Arsenic, total	7440-38-2	E420	0.0504 mg/L	0.05 mg/L	101	70.0	130	—
		Barium, total	7440-39-3	E420	ND mg/L	—	ND	70.0	130	—
		Beryllium, total	7440-41-7	E420	0.00474 mg/L	0.005 mg/L	94.8	70.0	130	—
		Bismuth, total	7440-69-9	E420	0.0451 mg/L	0.05 mg/L	90.2	70.0	130	—
		Boron, total	7440-42-8	E420	0.047 mg/L	0.05 mg/L	93.3	70.0	130	—
		Cadmium, total	7440-43-9	E420	0.00471 mg/L	0.005 mg/L	94.2	70.0	130	—
		Calcium, total	7440-70-2	E420	ND mg/L	—	ND	70.0	130	—
		Cesium, total	7440-46-2	E420	0.00250 mg/L	0.002 mg/L	100.0	70.0	130	—
		Chromium, total	7440-47-3	E420	0.0121 mg/L	0.012 mg/L	96.8	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
Total Metals (QCLot: 1977902) - continued										
HA2501247-002	KL-5	Cobalt, total	7440-48-4	E420	0.0117 mg/L	0.012 mg/L	93.5	70.0	130	—
		Copper, total	7440-50-8	E420	0.0117 mg/L	0.012 mg/L	93.3	70.0	130	—
		Iron, total	7439-89-6	E420	ND mg/L	—	ND	70.0	130	—
		Lead, total	7439-92-1	E420	0.0235 mg/L	0.025 mg/L	94.1	70.0	130	—
		Lithium, total	7439-93-2	E420	0.0122 mg/L	0.012 mg/L	97.5	70.0	130	—
		Magnesium, total	7439-95-4	E420	2.38 mg/L	2.5 mg/L	95.2	70.0	130	—
		Manganese, total	7439-96-5	E420	ND mg/L	—	ND	70.0	130	—
		Molybdenum, total	7439-98-7	E420	0.0123 mg/L	0.012 mg/L	98.5	70.0	130	—
		Nickel, total	7440-02-0	E420	0.0229 mg/L	0.025 mg/L	91.5	70.0	130	—
		Phosphorus, total	7723-14-0	E420	0.512 mg/L	0.5 mg/L	102	70.0	130	—
		Potassium, total	7440-09-7	E420	2.35 mg/L	2.5 mg/L	94.0	70.0	130	—
		Rubidium, total	7440-17-7	E420	0.00485 mg/L	0.005 mg/L	97.0	70.0	130	—
		Selenium, total	7782-49-2	E420	0.0465 mg/L	0.05 mg/L	93.1	70.0	130	—
		Silicon, total	7440-21-3	E420	ND mg/L	—	ND	70.0	130	—
		Silver, total	7440-22-4	E420	0.00453 mg/L	0.005 mg/L	90.6	70.0	130	—
		Sodium, total	7440-23-5	E420	ND mg/L	—	ND	70.0	130	—
		Strontium, total	7440-24-6	E420	ND mg/L	—	ND	70.0	130	—
		Sulfur, total	7704-34-9	E420	ND mg/L	—	ND	70.0	130	—
		Tellurium, total	13494-80-9	E420	0.00440 mg/L	0.005 mg/L	88.0	70.0	130	—
		Thallium, total	7440-28-0	E420	0.0465 mg/L	0.05 mg/L	92.9	70.0	130	—
		Thorium, total	7440-29-1	E420	0.00470 mg/L	0.005 mg/L	94.0	70.0	130	—
		Tin, total	7440-31-5	E420	0.0245 mg/L	0.025 mg/L	98.0	70.0	130	—
		Titanium, total	7440-32-6	E420	0.0119 mg/L	0.012 mg/L	95.5	70.0	130	—
		Tungsten, total	7440-33-7	E420	0.00477 mg/L	0.005 mg/L	95.5	70.0	130	—
		Uranium, total	7440-61-1	E420	0.000242 mg/L	0 mg/L	96.8	70.0	130	—
		Vanadium, total	7440-62-2	E420	0.0244 mg/L	0.025 mg/L	97.6	70.0	130	—
		Zinc, total	7440-66-6	E420	0.0231 mg/L	0.025 mg/L	92.5	70.0	130	—
		Zirconium, total	7440-67-7	E420	0.00461 mg/L	0.005 mg/L	92.3	70.0	130	—

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Environmental Division Halifax
Work Order Reference
HA2501247

Telephone : +1 902 707 4888

Report To	Contact and company name below will appear on the final report	Reports / Recipients	Turnaround Time (TAT) Requested
Company:	WSP CANADA INC	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	☑ Routine [R] if received by 3pm M-F - no surcharges apply
Contact:	NAOMI GILES	Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A	☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimu
Phone:	782-640-1923	☑ Compare Results to Criteria on Report - provide details below if box checked	☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minim
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minim
Street:	1 SPECTACLE LAKE DRIVE	Email 1 or Fax NAOMI.GILES@WSP.COM	☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minim
City/Province:	DARTMOUTH, NS	Email 2	☐ Same day [E2] if received by 10am M-S - 200% rush surcharge
Postal Code:	B3B 1X7	Email 3	Additional fees may apply to rush requests on weekend
Invoice To	Same as Report To ☑ YES ☐ NO	Invoice Recipients	Date and Time Required for all E&P TATs:
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	For all tests with rush TATs requested, please c
Company:		Email 1 or Fax	Analysis Re
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Client Code / QUOTE #:		AFE/Cost Center:	PO#
Job / Project #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only): HA2501247		ALS Contact:	Sampler:

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

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Inorganic Parameters (see attached sheet)	Calculated Parameters (see attached	Metals	Chlorophyll-a-	E.coli (CFU/100 mL)	Total Coliform (CFU/100 mL)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes
	KL-1	30-04-25	1305	SW		R	R	R	R	R	R			
	~~KL-2~~			SW		R	R	R	R	R	R			
	~~KL-3~~			SW		R	R	R	R	R	R			
	~~KL-4~~			SW		R	R	R	R	R	R			
	KL-5		1330	SW		R	R	R	R	R	R			
	KL-6		1340	SW		R	R	R	R	R	R			
	KL-7		1210	SW		R	R	R	R	R	R			
	PML-1		1050	SW		R	R	R	R	R	R			
	PML-2		1105	SW		R	R	R	R	R	R			
	~~HWY-102-1~~			SW		R	R	R	R	R	R			
	HWY-102-2		1405	SW		R	R	R	R	R	R			
	~~LU~~			SW		R	R	R	R	R	R			

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)	SAMPLE RECEIPT DETAILS (ALS use only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	See attached for analytical requirments. Also, - Low level phosphorus <0.002	Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED
Are samples for human consumption/ use? ☐ YES ☑ NO		Cooler Custody Seals Intact: ☐ YES ☑ N/A Sample Custody Seals Intact: ☐ YES ☑ N/A
		INITIAL COOLER TEMPERATURES °C: 12.5°C; FINAL COOLER TEMPERATURES °C

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (ALS use only)		FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: JH/MO	Date: 30-04-2025	Time: 1430	Date: Apr 30/25	Time: 14:56	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION [redacted] E - LABORATORY COPY YELLOW - CLIENT COPY

MAY 2023 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Table 2 - Parameter Groups

[redacted]	Group B - Inorganic parameters	Group C - Calculated parameters	Group D - Standard metals	Group E - Microbiological parameters	Group F - Additional metals
	Total Alkalinity (as $CaCO_3$) Dissolved Chloride Colour Total Kjeldahl Nitrogen Nitrate Nitrite Nitrogen (as Ammonia) Total Organic Carbon Orthophosphate (as P) pH Total Phosphorus (low level) Reactive Silica Total Suspended Solids Dissolved Sulphate Turbidity Specific Conductance	Anion sum Cation sum Nitrate + Nitrite Bicarbonate Alkalinity (as $CaCO_3$) Hardness Total Dissolved Solids Saturation pH (at 4EC and 20EC) Langlier Index (at 4EC and 20EC)	Calcium Copper Iron Magnesium Manganese Potassium Sodium Zinc	Chlorophyll-α *E. coli* (MPN or CFU) Total coliform (MPN or CFU)	Aluminum Antimony Arsenic Barium Bismuth Boron Cadmium Chromium Cobalt Lead Molybdenum Nickel Selenium Silver Strontium Thallium Tin Titanium Uranium Vanadium

APPENDIX F – Water Quality Analysis Groups

Table 1 - Schedule of Sample Analysis

Parameters	Spring	Summer	Fall
[redacted]			
Group B - Inorganic parameters	X	X	X
Group C - Calculated parameters	X	X	X
Group D - Standard metals	X	X	X
Group E - Microbiological parameters	X	X	X
Group F - Additional metals	X		