ANNUAL REPORT
FOR THE HAMLET OF CHESTERFIELD INLET

YEAR BEING REPORTED: 2017

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water License No. **3BM-CHE1523** issued to the **Hamlet of Chesterfield Inlet**.

i) - iii) tabular summaries of all data generated under the "Monitoring Program"; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are results for Monitoring Station CHE-1, as well as detailed chemical, physical and biological analysis required at CHE-2, CHE-3 and CHE-4.

Month Reported	Quantity of Water Obtained from all Sources (L)	Quantity of Sewage Waste Discharged (Estimated, L)
January	1,360,877.60	Same
February	1,200,804.20	Same
March	1,246,553.00	Same
April	1,104,708.40	Same
May	1,234,419.00	Same
June	1,137,568.80	Same
July	1,226,305.20	Same
August	1,194,246.90	Same
September	1,238,306.90	Same
October	1,275,759.20	Same
November	1,194,409.30	Same
December	1,184,746.50	Same
ANNUAL TOTAL	**14,598,705.00**	**14,598,705.00**

Note: No meter exists to measure the sewage discharge volume; therefore sewage discharge volume is considered equal volume to the water consumption volume.

iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;

- Improved segregation of household hazardous waste, including batteries and propane tanks, is taking place at the solid waste site.

v. a list of unauthorized discharges and summary of follow-up action taken;
Spills:

Spill No.	Date	Site Description	Commodity	Quantity
2017071	2017-03-06	Chesterfield Inlet unit 93 A & B	Fuel	1 L
2017344	2017-09-14	Chesterfield Inlet	Heating Fuel P-50	390 L
2017345	2017-09-14	63 56.7N 093 38.4W (Helicopter Island, Chesterfield Inlet)	Hydraulic Fluid	100 L
2017430	2017-11-15	Chesterfield Inlet, NU	Heating Fuel	23 L

vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;

- No abandonment and restoration work was completed in 2017 and none is anticipated in 2018.

vii. a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;

- none

viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and

- none

ix. updates or revisions to the approved Operation and Maintenance Plans.

-none

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- The Hamlet is working with the Water Compliance Working Group to implement the Solid Waste Workplan goals.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

- The 3BM-CHE1523 INAC Inspection took place on July 31, 2017. A copy of the inspection report has not been received from INAC.

List of Appendixes

Appendix A: CHE-4 Effluent Quality Limits – 1 page
Appendix B: Certificate of Analysis June 13, 2017 – 12 pages
Appendix C: Certificate of Analysis August 16, 2017 – 14 pages
Appendix D: Hazardous Materials Spill Database, Chesterfield Inlet 2017 – 1 page
Appendix E: Chesterfield Inlet 2017 Monitoring Results Summary – 4 gages

2017 Chesterfield Inlet Monitoring Stations and Sampling Parameters Summary for Licence No. 3BM-CHE1523
Part D, Item 2; CHE-4 Effluent Quality Limits

Parameter	Maximum Concentration of any Grab Sample	CHE-4	
		31-Jul-17	16-Aug-17
BOD_5	80 mg/L	2	530
Total Suspended Solids	100 mg/L	6	167
Fecal Coliforms	1 x 10^4 CFU/100mL	10	24200
Oil + Grease	no visible sheen	5	106
pH	between 6 and 9	7.56	7.18

Exceeds effluent quality limits

Hamlet of Chesterfield Inlet
ATTN: SHAWN STUCKEY / DON TANUYAK
PO Box 10
Chesterfield Inlet NU X0C 0B0

Date Received: 15-JUN-17
Report Date: 27-JUN-17 11:04 (MT)
Version: FINAL

Client Phone: 867-898-9926

Certificate of Analysis

Lab Work Order #: L1942686

Project P.O. #: NOT SUBMITTED
Job Reference: CHESTERFIELD INLET
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1942686-1 CHE-3A							
Sampled By: Charlie on 13-JUN-17 @ 10:50							
Matrix: Wastewater							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	32.9		1.2	mg/L		20-JUN-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		20-JUN-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		20-JUN-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	27.0		1.0	mg/L		16-JUN-17	R3749875
Ammonia by colour							
Ammonia, Total (as N)	3.69		0.10	mg/L		20-JUN-17	R3752408
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	4.4		2.0	mg/L		16-JUN-17	R3752842
Carbonaceous BOD							
BOD Carbonaceous	3.4		2.0	mg/L		16-JUN-17	R3752842
Chloride in Water by IC							
Chloride (Cl)	10.8		0.50	mg/L		15-JUN-17	R3751272
Conductivity							
Conductivity	98.7		1.0	umhos/cm		16-JUN-17	R3749875
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	24200	PEHR	10	MPN/100mL		15-JUN-17	R3749223
Hardness Calculated							
Hardness (as CaCO3)	16.1	HTC	0.25	mg/L		20-JUN-17	
Mercury Total							
Mercury (Hg)-Total	0.0000088		0.0000050	mg/L	21-JUN-17	21-JUN-17	R3752879
Nitrate in Water by IC							
Nitrate (as N)	0.021		0.020	mg/L		15-JUN-17	R3751272
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		20-JUN-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		15-JUN-17	R3751272
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		20-JUN-17	R3751479
Phenol (4AAP)							
Phenols (4AAP)	0.0066		0.0010	mg/L		26-JUN-17	R3756555
Phosphorus, Total							
Phosphorus (P)-Total	0.491		0.010	mg/L		21-JUN-17	R3752412
Sulfate in Water by IC							
Sulfate (SO4)	1.86		0.30	mg/L		15-JUN-17	R3751272
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.500		0.0050	mg/L	19-JUN-17	19-JUN-17	R3751096
Arsenic (As)-Total	0.00028		0.00020	mg/L	19-JUN-17	19-JUN-17	R3751096
Cadmium (Cd)-Total	0.000031		0.000010	mg/L	19-JUN-17	19-JUN-17	R3751096
Calcium (Ca)-Total	4.11		0.10	mg/L	19-JUN-17	19-JUN-17	R3751096
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	19-JUN-17	19-JUN-17	R3751096
Cobalt (Co)-Total	0.00070		0.00020	mg/L	19-JUN-17	19-JUN-17	R3751096
Copper (Cu)-Total	0.00821		0.00020	mg/L	19-JUN-17	19-JUN-17	R3751096
Iron (Fe)-Total	0.500		0.010	mg/L	19-JUN-17	19-JUN-17	R3751096
Lead (Pb)-Total	0.000889		0.000090	mg/L	19-JUN-17	19-JUN-17	R3751096
Magnesium (Mg)-Total	1.41		0.010	mg/L	19-JUN-17	19-JUN-17	R3751096
Manganese (Mn)-Total	0.0289		0.00030	mg/L	19-JUN-17	19-JUN-17	R3751096
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	19-JUN-17	19-JUN-17	R3751096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1942686-1 CHE-3A							
Sampled By: Charlie on 13-JUN-17 @ 10:50							
Matrix: Wastewater							
Total Metals by ICP-MS							
Potassium (K)-Total	2.62		0.020	mg/L	19-JUN-17	19-JUN-17	R3751096
Sodium (Na)-Total	6.60		0.030	mg/L	19-JUN-17	19-JUN-17	R3751096
Zinc (Zn)-Total	0.0106		0.0020	mg/L	19-JUN-17	19-JUN-17	R3751096
Total Organic Carbon by Combustion							
Total Organic Carbon	3.86		0.50	mg/L		22-JUN-17	R3753983
Total Suspended Solids							
Total Suspended Solids	23.0		5.0	mg/L		19-JUN-17	R3751327
pH							
pH	7.03		0.10	pH units		16-JUN-17	R3749875
L1942686-2 CHE-3							
Sampled By: Charlie on 13-JUN-17 @ 11:13							
Matrix: Wastewater							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		26-JUN-17	R3756311
Toluene	0.0141		0.0010	mg/L		26-JUN-17	R3756311
Ethyl benzene	<0.00050		0.00050	mg/L		26-JUN-17	R3756311
o-Xylene	<0.00050		0.00050	mg/L		26-JUN-17	R3756311
m+p-Xylenes	<0.00040		0.00040	mg/L		26-JUN-17	R3756311
F1 (C6-C10)	<0.10		0.10	mg/L		26-JUN-17	R3756311
Surrogate: 4-Bromofluorobenzene (SS)	95.7		70-130	%		26-JUN-17	R3756311
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	16-JUN-17	16-JUN-17	R3749826
F3 (C16-C34)	<0.25		0.25	mg/L	16-JUN-17	16-JUN-17	R3749826
F4 (C34-C50)	<0.25		0.25	mg/L	16-JUN-17	16-JUN-17	R3749826
Surrogate: 2-Bromobenzotrifluoride	92.9		60-140	%	16-JUN-17	16-JUN-17	R3749826
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		26-JUN-17	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		26-JUN-17	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		26-JUN-17	
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	28.4		1.2	mg/L		20-JUN-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		20-JUN-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		20-JUN-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	23.3		1.0	mg/L		16-JUN-17	R3749875
Ammonia by colour							
Ammonia, Total (as N)	1.71		0.10	mg/L		20-JUN-17	R3752408
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	7.8		2.0	mg/L		16-JUN-17	R3752842
Carbonaceous BOD							
BOD Carbonaceous	5.8		2.0	mg/L		16-JUN-17	R3752842
Chloride in Water by IC							
Chloride (Cl)	8.44		0.50	mg/L		15-JUN-17	R3751272
Conductivity							
Conductivity	83.2		1.0	umhos/cm		16-JUN-17	R3749875
Fecal coliforms, 1:10 dilution by QT97							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1942686-2 CHE-3							
Sampled By: Charlie on 13-JUN-17 @ 11:13							
Matrix: Wastewater							
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10	PEHR	10	MPN/100mL		15-JUN-17	R3749223
Hardness Calculated							
Hardness (as CaCO3)	17.7	HTC	0.25	mg/L		20-JUN-17	
Mercury Total							
Mercury (Hg)-Total	0.0000063		0.0000050	mg/L	21-JUN-17	21-JUN-17	R3752879
Nitrate in Water by IC							
Nitrate (as N)	0.333		0.020	mg/L		15-JUN-17	R3751272
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.366		0.070	mg/L		20-JUN-17	
Nitrite in Water by IC							
Nitrite (as N)	0.033		0.010	mg/L		15-JUN-17	R3751272
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		20-JUN-17	R3751479
Phenol (4AAP)							
Phenols (4AAP)	0.0043		0.0010	mg/L		26-JUN-17	R3756555
Phosphorus, Total							
Phosphorus (P)-Total	0.477		0.010	mg/L		21-JUN-17	R3752412
Sulfate in Water by IC							
Sulfate (SO4)	3.28		0.30	mg/L		15-JUN-17	R3751272
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.179		0.0050	mg/L	19-JUN-17	19-JUN-17	R3751096
Arsenic (As)-Total	0.00087		0.00020	mg/L	19-JUN-17	19-JUN-17	R3751096
Cadmium (Cd)-Total	0.000024		0.000010	mg/L	19-JUN-17	19-JUN-17	R3751096
Calcium (Ca)-Total	5.19		0.10	mg/L	19-JUN-17	19-JUN-17	R3751096
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	19-JUN-17	19-JUN-17	R3751096
Cobalt (Co)-Total	0.00031		0.00020	mg/L	19-JUN-17	19-JUN-17	R3751096
Copper (Cu)-Total	0.0116		0.00020	mg/L	19-JUN-17	19-JUN-17	R3751096
Iron (Fe)-Total	0.310		0.010	mg/L	19-JUN-17	19-JUN-17	R3751096
Lead (Pb)-Total	0.000694		0.000090	mg/L	19-JUN-17	19-JUN-17	R3751096
Magnesium (Mg)-Total	1.15		0.010	mg/L	19-JUN-17	19-JUN-17	R3751096
Manganese (Mn)-Total	0.0290		0.00030	mg/L	19-JUN-17	19-JUN-17	R3751096
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	19-JUN-17	19-JUN-17	R3751096
Potassium (K)-Total	2.68		0.020	mg/L	19-JUN-17	19-JUN-17	R3751096
Sodium (Na)-Total	4.85		0.030	mg/L	19-JUN-17	19-JUN-17	R3751096
Zinc (Zn)-Total	0.0670		0.0020	mg/L	19-JUN-17	19-JUN-17	R3751096
Total Organic Carbon by Combustion							
Total Organic Carbon	6.53		0.50	mg/L		22-JUN-17	R3753983
Total Suspended Solids							
Total Suspended Solids	12		10	mg/L		19-JUN-17	R3751327
pH							
pH	7.05		0.10	pH units		16-JUN-17	R3749875
L1942686-3 CHE-2 (NOT ON COC)							
Sampled By: Charlie on 13-JUN-17 @ 11:13							
Matrix: Wastewater							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		18-JUN-17	R3753145
Toluene	<0.0010		0.0010	mg/L		18-JUN-17	R3753145
Ethyl benzene	<0.00050		0.00050	mg/L		18-JUN-17	R3753145
o-Xylene	<0.00050		0.00050	mg/L		18-JUN-17	R3753145
m+p-Xylenes	<0.00040		0.00040	mg/L		18-JUN-17	R3753145
F1 (C6-C10)	<0.10		0.10	mg/L		18-JUN-17	R3753145

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1942686-3 CHE-2 (NOT ON COC)							
Sampled By: Charlie on 13-JUN-17 @ 11:13							
Matrix: Wastewater							
BTX plus F1 by GCMS							
Surrogate: 4-Bromofluorobenzene (SS)	82.0		70-130	%		18-JUN-17	R3753145
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	16-JUN-17	16-JUN-17	R3749826
F3 (C16-C34)	0.53		0.25	mg/L	16-JUN-17	16-JUN-17	R3749826
F4 (C34-C50)	<0.25		0.25	mg/L	16-JUN-17	16-JUN-17	R3749826
Surrogate: 2-Bromobenzotrifluoride	100.9		60-140	%	16-JUN-17	16-JUN-17	R3749826
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		22-JUN-17	
Total Hydrocarbons (C6-C50)	0.53		0.38	mg/L		22-JUN-17	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		22-JUN-17	
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	92.6		1.2	mg/L		20-JUN-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		20-JUN-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		20-JUN-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	75.9		1.0	mg/L		16-JUN-17	R3749875
Ammonia by colour							
Ammonia, Total (as N)	7.9		1.0	mg/L		21-JUN-17	R3752408
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	9.6		6.0	mg/L		16-JUN-17	R3752842
Carbonaceous BOD							
BOD Carbonaceous	8.6		2.0	mg/L		16-JUN-17	R3752842
Chloride in Water by IC							
Chloride (Cl)	22.5		0.50	mg/L		15-JUN-17	R3751272
Conductivity							
Conductivity	267		1.0	umhos/cm		16-JUN-17	R3749875
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	190	PEHR	10	MPN/100mL		15-JUN-17	R3749223
Hardness Calculated							
Hardness (as CaCO3)	50.0	HTC	0.25	mg/L		20-JUN-17	
Mercury Total							
Mercury (Hg)-Total	0.0000052		0.0000050	mg/L	21-JUN-17	21-JUN-17	R3752879
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		15-JUN-17	R3751272
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		20-JUN-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		15-JUN-17	R3751272
Oil & Grease - Gravimetric							
Oil and Grease	10.8		5.0	mg/L		20-JUN-17	R3751479
Phenol (4AAP)							
Phenols (4AAP)	0.0135		0.0010	mg/L		26-JUN-17	R3756555
Phosphorus, Total							
Phosphorus (P)-Total	2.66		0.010	mg/L		21-JUN-17	R3752412
Sulfate in Water by IC							
Sulfate (SO4)	14.4		0.30	mg/L		15-JUN-17	R3751272
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0545		0.0050	mg/L	19-JUN-17	19-JUN-17	R3751096

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1942686-3 CHE-2 (NOT ON COC)							
Sampled By: Charlie on 13-JUN-17 @ 11:13							
Matrix: Wastewater							
Total Metals by ICP-MS							
Arsenic (As)-Total	0.00062		0.00020	mg/L	19-JUN-17	19-JUN-17	R3751096
Cadmium (Cd)-Total	0.000035		0.000010	mg/L	19-JUN-17	19-JUN-17	R3751096
Calcium (Ca)-Total	15.5		0.10	mg/L	19-JUN-17	19-JUN-17	R3751096
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	19-JUN-17	19-JUN-17	R3751096
Cobalt (Co)-Total	0.00035		0.00020	mg/L	19-JUN-17	19-JUN-17	R3751096
Copper (Cu)-Total	0.00687		0.00020	mg/L	19-JUN-17	19-JUN-17	R3751096
Iron (Fe)-Total	2.35		0.010	mg/L	19-JUN-17	19-JUN-17	R3751096
Lead (Pb)-Total	0.000387		0.000090	mg/L	19-JUN-17	19-JUN-17	R3751096
Magnesium (Mg)-Total	2.74		0.010	mg/L	19-JUN-17	19-JUN-17	R3751096
Manganese (Mn)-Total	0.118		0.00030	mg/L	19-JUN-17	19-JUN-17	R3751096
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	19-JUN-17	19-JUN-17	R3751096
Potassium (K)-Total	7.50		0.020	mg/L	19-JUN-17	19-JUN-17	R3751096
Sodium (Na)-Total	14.1		0.030	mg/L	19-JUN-17	19-JUN-17	R3751096
Zinc (Zn)-Total	0.0119		0.0020	mg/L	19-JUN-17	19-JUN-17	R3751096
Total Organic Carbon by Combustion							
Total Organic Carbon	11.9		0.50	mg/L		22-JUN-17	R3753983
Total Suspended Solids							
Total Suspended Solids	18.0		5.0	mg/L		19-JUN-17	R3751327
pH							
pH	7.08		0.10	pH units		16-JUN-17	R3749875

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-CO3CO3-CALC-WP	Water	Alkalinity, Carbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.

ALK-HCO3HCO3-CALC-WP	Water	Alkalinity, Bicarbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L

ALK-OHOH-CALC-WP	Water	Alkalinity, Hydroxide	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.

ALK-TITR-WP	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BOD-CBOD-WP	Water	Carbonaceous BOD	APHA 5210 B

Samples are diluted and seeded, have TCMP added to inhibit nitrogenous demands, and then are incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.

BOD-WP	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B

Samples are diluted and seeded and then incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.

BTEXS+F1-HSMS-WP	Water	BTX plus F1 by GCMS	EPA 8260C / EPA 5021A

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transfered into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

C-TOC-HTC-WP	Water	Total Organic Carbon by Combustion	APHA 5310 B-WP

Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-WP	Water	Conductivity	APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511

Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.

FC10-QT97-WP	Water	Fecal coliforms, 1:10 dilution by QT97	APHA 9223B QT97

Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.

HARDNESS-CALC-WP	Water	Hardness Calculated	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-CVAF-WP	Water	Mercury Total	EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-T-L-MS-WP	Water	Total Metals by ICP-MS	APHA 3030E/EPA 6020A-TL

This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-WP	Water	Nitrite in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-IC-N-WP	Water	Nitrate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

OG-GRAV-WP	Water	Oil & Grease - Gravimetric	EPA 1664 (modified)

Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil & Grease is determined from the weight of the residue in the vial.

P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.

PH-WP	Water	pH	APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.

PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.

SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

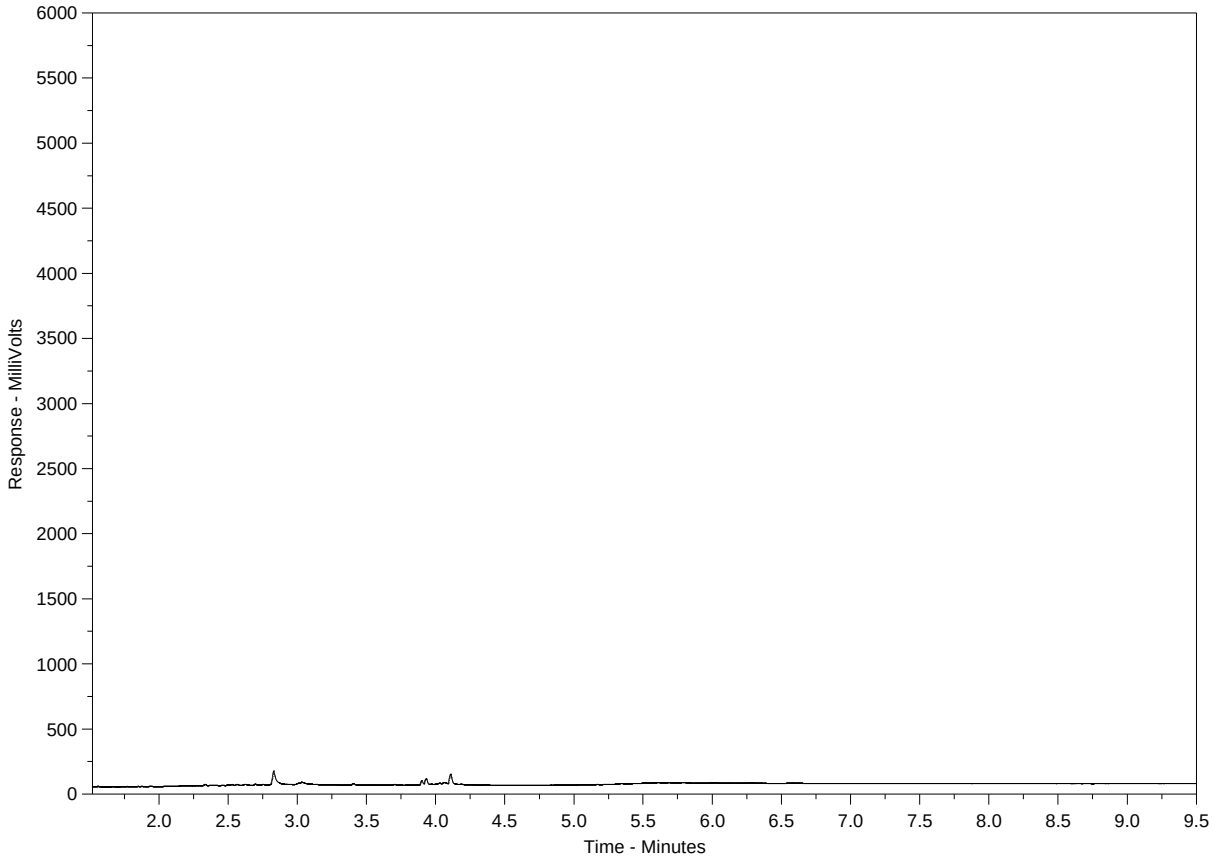
GLOSSARY OF REPORT TERMS

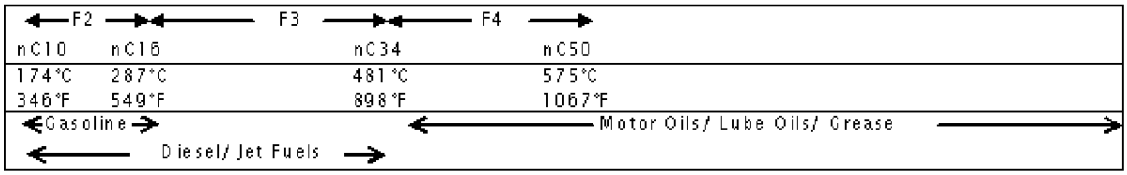
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1942686-2
Client Sample ID: CHE-3





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

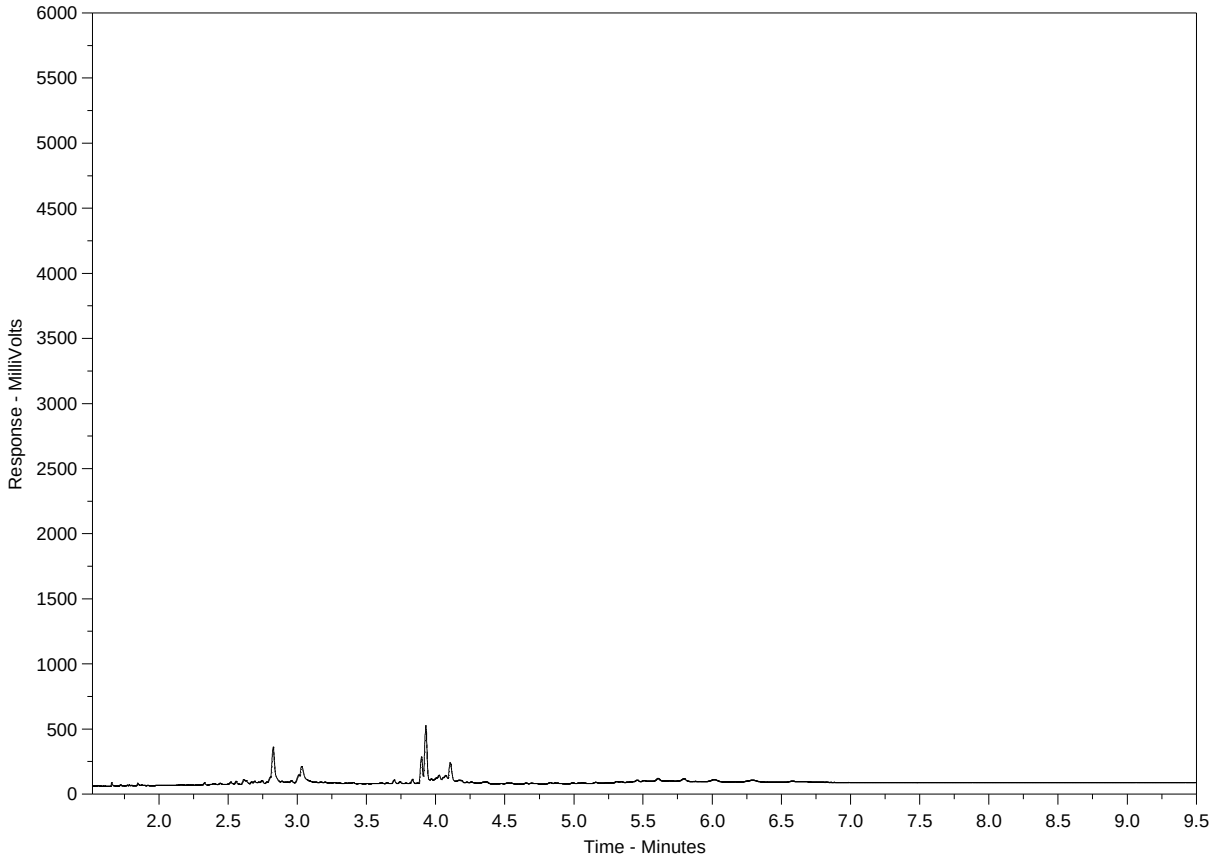
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

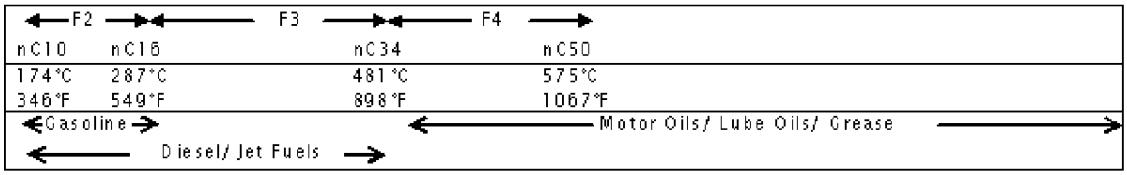
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1942686-3
Client Sample ID: CHE-2 (NOT ON COC)





The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1942686-COFC

COC Number: 14 - 503477

Page ____ of ____

L1942686

Report To		Report Format / Distribution		Turnaround Time (TAT) (Rush Turnaround Time (TAT) is not available for all tests)	
Company:	Hamlet of Chesterfield Inlet	Select Report Format:	☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☐	Regular (Standard TAT if received by 3pm)
Contact:		Quality Control (QC) Report with Report	☐ Yes ☐ No	P ☐	Priority (2-4 business days if received by 3pm)
Address:		☐ Criteria on Report - provide details below if box checked		E ☐	Emergency (1-2 business days if received by 3pm)
		Select Distribution:	☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐	Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:		Email 1 or Fax		Specify Date Required for E2,E or P:	
		Email 2			

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:		GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Analysis Request

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

ALS Sample # (lab 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
	CHC-3A (1)	13/06/17	1050 AM	S	1
	CHC-3A (2)	13/06/17	1056 AM	S	
	" (3)	13/06/17	10:54 AM	S	
	" (4)	13/06/17	11 AM	S	
	" (5)	13/06/17	11:01 AM	S	
	" (6)	13/06/17	11:03 AM	S	
	CHC-3 (1)	13/06/17	11:13 AM	S	
	" (2)	13/06/17	11:15 AM	S	
	" (3)	13/06/17	11:17 AM	S	
	" (4)	13/06/17	11:20 AM	S	
	" (5)	13/06/17	11:21 AM	S	
	" (6)	13/06/17	11:25 AM		

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☑	
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
10.3° C.			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
				15-Jun-17	1145			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

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.**

Hamlet of Chesterfield Inlet
ATTN: DON TANUYAK
PO Box 10
Chesterfield Inlet NU X0C 0B0

Date Received: 18-AUG-17
Report Date: 29-AUG-17 10:48 (MT)
Version: FINAL

Client Phone: 867-898-9926

Certificate of Analysis

Lab Work Order #: L1977151

Project P.O. #: NOT SUBMITTED
Job Reference: CHESTERFIELD INLET -
C of C Numbers:
Legal Site Desc:

Comments: NOTE: Sample Vials for BTX,F1-F4 Petroleum Hydrocarbons analysis were received empty (unfilled) - Unable to provide this analysis.

Craig Riddell, B.Sc.Ag
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1977151-1 CHE-2							
Sampled By: CLIENT on 16-AUG-17							
Matrix: WW							
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	19-AUG-17	22-AUG-17	R3807592
2-Methyl Naphthalene	<0.000050	DLM	0.000050	mg/L	19-AUG-17	22-AUG-17	R3807592
Acenaphthene	<0.000020		0.000020	mg/L	19-AUG-17	22-AUG-17	R3807592
Acenaphthylene	<0.000020		0.000020	mg/L	19-AUG-17	22-AUG-17	R3807592
Anthracene	<0.000010		0.000010	mg/L	19-AUG-17	22-AUG-17	R3807592
Acridine	<0.000020		0.000020	mg/L	19-AUG-17	22-AUG-17	R3807592
Benzo(a)anthracene	<0.000010		0.000010	mg/L	19-AUG-17	22-AUG-17	R3807592
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	19-AUG-17	22-AUG-17	R3807592
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	19-AUG-17	22-AUG-17	R3807592
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	19-AUG-17	22-AUG-17	R3807592
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	19-AUG-17	22-AUG-17	R3807592
Chrysene	<0.000020		0.000020	mg/L	19-AUG-17	22-AUG-17	R3807592
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	19-AUG-17	22-AUG-17	R3807592
Fluoranthene	<0.000020		0.000020	mg/L	19-AUG-17	22-AUG-17	R3807592
Fluorene	<0.000020		0.000020	mg/L	19-AUG-17	22-AUG-17	R3807592
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	19-AUG-17	22-AUG-17	R3807592
Naphthalene	<0.000050		0.000050	mg/L	19-AUG-17	22-AUG-17	R3807592
Phenanthrene	<0.000050		0.000050	mg/L	19-AUG-17	22-AUG-17	R3807592
Pyrene	<0.000010		0.000010	mg/L	19-AUG-17	22-AUG-17	R3807592
Quinoline	<0.000020		0.000020	mg/L	19-AUG-17	22-AUG-17	R3807592
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	19-AUG-17	22-AUG-17	R3807592
Surrogate: Acenaphthene d10	76.0		40-130	%	19-AUG-17	22-AUG-17	R3807592
Surrogate: Acridine d9	87.9		40-130	%	19-AUG-17	22-AUG-17	R3807592
Surrogate: Chrysene d12	73.1		40-130	%	19-AUG-17	22-AUG-17	R3807592
Surrogate: Naphthalene d8	69.5		40-130	%	19-AUG-17	22-AUG-17	R3807592
Surrogate: Phenanthrene d10	77.2		40-130	%	19-AUG-17	22-AUG-17	R3807592
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	128		1.2	mg/L		21-AUG-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		21-AUG-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		21-AUG-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	105		1.0	mg/L		18-AUG-17	R3804105
Ammonia by colour							
Ammonia, Total (as N)	0.021		0.010	mg/L		28-AUG-17	R3813675
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		18-AUG-17	R3808774
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		18-AUG-17	R3808774
Chloride in Water by IC							
Chloride (Cl)	74.5		0.50	mg/L		18-AUG-17	R3804947
Conductivity							
Conductivity	515		1.0	umhos/cm		18-AUG-17	R3804105
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10	PEHR	10	MPN/100mL		18-AUG-17	R3803909
Hardness Calculated							
Hardness (as CaCO3)	169	HTC	0.20	mg/L		28-AUG-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	21-AUG-17	22-AUG-17	R3807514

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1977151-1 CHE-2							
Sampled By: CLIENT on 16-AUG-17							
Matrix: WW							
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		18-AUG-17	R3804947
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		21-AUG-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		18-AUG-17	R3804947
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		24-AUG-17	R3808945
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		22-AUG-17	R3807364
Phosphorus, Total							
Phosphorus (P)-Total	0.021		0.010	mg/L		22-AUG-17	R3806250
Sulfate in Water by IC							
Sulfate (SO4)	54.9		0.30	mg/L		18-AUG-17	R3804947
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0121		0.0030	mg/L	22-AUG-17	27-AUG-17	R3812844
Arsenic (As)-Total	0.00033		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Cadmium (Cd)-Total	0.0000142		0.0000050	mg/L	22-AUG-17	27-AUG-17	R3812844
Calcium (Ca)-Total	46.1		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Chromium (Cr)-Total	0.00027		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Cobalt (Co)-Total	0.00017		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Copper (Cu)-Total	0.00076		0.00050	mg/L	22-AUG-17	27-AUG-17	R3812844
Iron (Fe)-Total	1.00		0.010	mg/L	22-AUG-17	27-AUG-17	R3812844
Lead (Pb)-Total	<0.000050		0.000050	mg/L	22-AUG-17	27-AUG-17	R3812844
Magnesium (Mg)-Total	13.1		0.0050	mg/L	22-AUG-17	27-AUG-17	R3812844
Manganese (Mn)-Total	0.0203		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Nickel (Ni)-Total	0.00185		0.00050	mg/L	22-AUG-17	27-AUG-17	R3812844
Potassium (K)-Total	8.19		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Sodium (Na)-Total	59.3		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	22-AUG-17	27-AUG-17	R3812844
Total Organic Carbon by Combustion							
Total Organic Carbon	8.24		0.50	mg/L		21-AUG-17	R3805956
Total Suspended Solids							
Total Suspended Solids	15.0		5.0	mg/L		22-AUG-17	R3807546
pH							
pH	7.27		0.10	pH units		18-AUG-17	R3804105
L1977151-2 CHE-3							
Sampled By: CLIENT on 16-AUG-17							
Matrix: WW							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	250		1.2	mg/L		21-AUG-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		21-AUG-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		21-AUG-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	205		1.0	mg/L		18-AUG-17	R3804105
Ammonia by colour							
Ammonia, Total (as N)	19.1		0.010	mg/L		28-AUG-17	R3813675
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	10.8		2.0	mg/L		18-AUG-17	R3808774

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1977151-2 CHE-3							
Sampled By: CLIENT on 16-AUG-17							
Matrix: WW							
Carbonaceous BOD							
BOD Carbonaceous	5.0		2.0	mg/L		18-AUG-17	R3808774
Chloride in Water by IC							
Chloride (Cl)	54.6		0.50	mg/L		18-AUG-17	R3804947
Conductivity							
Conductivity	568		1.0	umhos/cm		18-AUG-17	R3804105
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	610	PEHR	10	MPN/100mL		18-AUG-17	R3803909
Hardness Calculated							
Hardness (as CaCO3)	118	HTC	0.20	mg/L		28-AUG-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	21-AUG-17	22-AUG-17	R3807514
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		18-AUG-17	R3804947
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		21-AUG-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		18-AUG-17	R3804947
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		24-AUG-17	R3808945
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		22-AUG-17	R3807364
Phosphorus, Total							
Phosphorus (P)-Total	4.54		0.10	mg/L		22-AUG-17	R3806250
Sulfate in Water by IC							
Sulfate (SO4)	5.80		0.30	mg/L		18-AUG-17	R3804947
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0325		0.0030	mg/L	22-AUG-17	27-AUG-17	R3812844
Arsenic (As)-Total	0.00088		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	22-AUG-17	27-AUG-17	R3812844
Calcium (Ca)-Total	35.3		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Chromium (Cr)-Total	0.00041		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Cobalt (Co)-Total	0.00039		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Copper (Cu)-Total	0.00134		0.00050	mg/L	22-AUG-17	27-AUG-17	R3812844
Iron (Fe)-Total	1.44		0.010	mg/L	22-AUG-17	27-AUG-17	R3812844
Lead (Pb)-Total	0.000073		0.000050	mg/L	22-AUG-17	27-AUG-17	R3812844
Magnesium (Mg)-Total	7.19		0.0050	mg/L	22-AUG-17	27-AUG-17	R3812844
Manganese (Mn)-Total	0.171		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Nickel (Ni)-Total	0.00358		0.00050	mg/L	22-AUG-17	27-AUG-17	R3812844
Potassium (K)-Total	14.9		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Sodium (Na)-Total	50.6		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Zinc (Zn)-Total	0.0058		0.0030	mg/L	22-AUG-17	27-AUG-17	R3812844
Total Organic Carbon by Combustion							
Total Organic Carbon	23.3		0.50	mg/L		21-AUG-17	R3805956
Total Suspended Solids							
Total Suspended Solids	11.0		5.0	mg/L		22-AUG-17	R3807546
pH							
pH	7.45		0.10	pH units		18-AUG-17	R3804105
L1977151-3 CHE-4							
Sampled By: CLIENT on 16-AUG-17							
Matrix: WW							
Nunavut WW Group 1							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1977151-3 CHE-4							
Sampled By: CLIENT on 16-AUG-17							
Matrix: WW							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	333		1.2	mg/L		21-AUG-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		21-AUG-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		21-AUG-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	273		1.0	mg/L		18-AUG-17	R3804105
Ammonia by colour							
Ammonia, Total (as N)	48.2		0.010	mg/L		28-AUG-17	R3813675
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	530		100	mg/L		18-AUG-17	R3808774
Carbonaceous BOD							
BOD Carbonaceous	450		100	mg/L		18-AUG-17	R3808774
Chloride in Water by IC							
Chloride (Cl)	74.0		1.0	mg/L		18-AUG-17	R3804947
Conductivity							
Conductivity	791		1.0	umhos/cm		18-AUG-17	R3804105
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	>24200	PEHR	10	MPN/100mL		18-AUG-17	R3803909
Hardness Calculated							
Hardness (as CaCO3)	95.4	HTC	0.20	mg/L		28-AUG-17	
Mercury Total							
Mercury (Hg)-Total	<0.000025		0.000025	mg/L	21-AUG-17	22-AUG-17	R3807514
Nitrate in Water by IC							
Nitrate (as N)	<0.040	DLM	0.040	mg/L		18-AUG-17	R3804947
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		21-AUG-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		18-AUG-17	R3804947
Oil & Grease - Gravimetric							
Oil and Grease	106		5.0	mg/L		24-AUG-17	R3808945
Phenol (4AAP)							
Phenols (4AAP)	0.107	DLM	0.010	mg/L		23-AUG-17	R3808241
Phosphorus, Total							
Phosphorus (P)-Total	6.28		0.25	mg/L		22-AUG-17	R3806250
Sulfate in Water by IC							
Sulfate (SO4)	5.68		0.60	mg/L		18-AUG-17	R3804947
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.389		0.0030	mg/L	22-AUG-17	27-AUG-17	R3812844
Arsenic (As)-Total	0.00127		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Cadmium (Cd)-Total	0.000150		0.0000050	mg/L	22-AUG-17	27-AUG-17	R3812844
Calcium (Ca)-Total	25.5		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Chromium (Cr)-Total	0.00169		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Cobalt (Co)-Total	0.00118		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Copper (Cu)-Total	0.0656		0.00050	mg/L	22-AUG-17	27-AUG-17	R3812844
Iron (Fe)-Total	9.38		0.010	mg/L	22-AUG-17	27-AUG-17	R3812844
Lead (Pb)-Total	0.00231		0.000050	mg/L	22-AUG-17	27-AUG-17	R3812844
Magnesium (Mg)-Total	7.73		0.0050	mg/L	22-AUG-17	27-AUG-17	R3812844
Manganese (Mn)-Total	0.198		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Nickel (Ni)-Total	0.00648		0.00050	mg/L	22-AUG-17	27-AUG-17	R3812844
Potassium (K)-Total	20.7		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Sodium (Na)-Total	62.7		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1977151-3 CHE-4							
Sampled By: CLIENT on 16-AUG-17							
Matrix: WW							
Total Metals in Water by CRC ICPMS							
Zinc (Zn)-Total	0.102		0.0030	mg/L	22-AUG-17	27-AUG-17	R3812844
Total Organic Carbon by Combustion							
Total Organic Carbon	145		5.0	mg/L		21-AUG-17	R3805956
Total Suspended Solids							
Total Suspended Solids	167		33	mg/L		22-AUG-17	R3807546
pH							
pH	7.18		0.10	pH units		18-AUG-17	R3804105
L1977151-4 CHE-3A							
Sampled By: CLIENT on 16-AUG-17							
Matrix: WW							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	315		1.2	mg/L		21-AUG-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		21-AUG-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		21-AUG-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	259		1.0	mg/L		18-AUG-17	R3804105
Ammonia by colour							
Ammonia, Total (as N)	43.3		0.010	mg/L		28-AUG-17	R3813675
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	133		50	mg/L		18-AUG-17	R3808774
Carbonaceous BOD							
BOD Carbonaceous	124		20	mg/L		18-AUG-17	R3808774
Chloride in Water by IC							
Chloride (Cl)	77.6		0.50	mg/L		18-AUG-17	R3804947
Conductivity							
Conductivity	786		1.0	umhos/cm		18-AUG-17	R3804105
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	>24200	PEHR	10	MPN/100mL		18-AUG-17	R3803909
Hardness Calculated							
Hardness (as CaCO3)	98.6	HTC	0.20	mg/L		28-AUG-17	
Mercury Total							
Mercury (Hg)-Total	<0.000050		0.000050	mg/L	21-AUG-17	22-AUG-17	R3807514
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		18-AUG-17	R3804947
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		21-AUG-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		18-AUG-17	R3804947
Oil & Grease - Gravimetric							
Oil and Grease	44.9		5.0	mg/L		24-AUG-17	R3808945
Phenol (4AAP)							
Phenols (4AAP)	0.213	DLM	0.010	mg/L		23-AUG-17	R3808241
Phosphorus, Total							
Phosphorus (P)-Total	8.56		0.10	mg/L		22-AUG-17	R3806250
Sulfate in Water by IC							
Sulfate (SO4)	12.2		0.30	mg/L		18-AUG-17	R3804947
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.558		0.0030	mg/L	22-AUG-17	27-AUG-17	R3812844

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1977151-4 CHE-3A							
Sampled By: CLIENT on 16-AUG-17							
Matrix: WW							
Total Metals in Water by CRC ICPMS							
Arsenic (As)-Total	0.00120		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Cadmium (Cd)-Total	0.000198		0.0000050	mg/L	22-AUG-17	27-AUG-17	R3812844
Calcium (Ca)-Total	26.5		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Chromium (Cr)-Total	0.00198		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Cobalt (Co)-Total	0.00122		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Copper (Cu)-Total	0.0933		0.00050	mg/L	22-AUG-17	27-AUG-17	R3812844
Iron (Fe)-Total	16.1		0.010	mg/L	22-AUG-17	27-AUG-17	R3812844
Lead (Pb)-Total	0.00305		0.000050	mg/L	22-AUG-17	27-AUG-17	R3812844
Magnesium (Mg)-Total	7.85		0.0050	mg/L	22-AUG-17	27-AUG-17	R3812844
Manganese (Mn)-Total	0.124		0.00010	mg/L	22-AUG-17	27-AUG-17	R3812844
Nickel (Ni)-Total	0.00681		0.00050	mg/L	22-AUG-17	27-AUG-17	R3812844
Potassium (K)-Total	21.2		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Sodium (Na)-Total	64.3		0.050	mg/L	22-AUG-17	27-AUG-17	R3812844
Zinc (Zn)-Total	0.163		0.0030	mg/L	22-AUG-17	27-AUG-17	R3812844
Total Organic Carbon by Combustion							
Total Organic Carbon	133		5.0	mg/L		21-AUG-17	R3805956
Total Suspended Solids							
Total Suspended Solids	120		33	mg/L		22-AUG-17	R3807546
pH							
pH	7.11		0.10	pH units		18-AUG-17	R3804105

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-CO3CO3-CALC-WP	Water	Alkalinity, Carbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.

ALK-HCO3HCO3-CALC-WP	Water	Alkalinity, Bicarbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L

ALK-OHOH-CALC-WP	Water	Alkalinity, Hydroxide	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.

ALK-TITR-WP	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BOD-CBOD-WP	Water	Carbonaceous BOD	APHA 5210 B

Samples are diluted and seeded, have TCMP added to inhibit nitrogenous demands, and then are incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.

BOD-WP	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B

Samples are diluted and seeded and then incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.

C-TOC-HTC-WP	Water	Total Organic Carbon by Combustion	APHA 5310 B-WP

Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-WP	Water	Conductivity	APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

FC10-QT97-WP	Water	Fecal coliforms, 1:10 dilution by QT97	APHA 9223B QT97

Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.

HARDNESS-CALC-WP	Water	Hardness Calculated	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-CVAF-WP	Water	Mercury Total	EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod.)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-WP	Water	Nitrite in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
NO3-IC-N-WP	Water	Nitrate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
OG-GRAV-WP	Water	Oil & Grease - Gravimetric	EPA 1664 (modified)
Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil & Grease is determined from the weight of the residue in the vial.			
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA SW 846/8270-GC/MS
Water is spiked with a surrogate spike mix and extracted using solvent extraction techniques. Analysis is performed by GC/MS in the selected ion monitoring (SIM) mode.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)
Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Aug 16, 2017

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1977151-COFC

COC Number: 14 - 503474

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L1977151

Report To	Hamlet of Chesterfield Inlet	**Report Format / Distribution**	**Select Service Level Below** (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Box 10	Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☐ Regular (Standard TAT if received by 3pm)
Contact:	Chesterfield Inlet NU	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:	X0C-0B0	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 business days if received by 3pm)
Phone:	867-898-9951	Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
		Email 1 or Fax	Specify Date Required for E2,E or P:
		Email 2	**Analysis Request**
Invoice To	Same as Report To ☐ Yes ☐ No	**Invoice Distribution**	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax	fwc_Hamlet@qiniq.com
Contact:		Email 2	
Project Information		**Oil and Gas Required Fields (client use)**	
ALS Quote #:		Approver ID:	Cost Center:
Job #:		GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		**ALS Contact:**	**Sampler:**

ALS Sample # (lab 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
	CHE-2				
	"				
	"				
	"				
	"				
	"				
	"				
	"				
	"				
	"				
	"				

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

Are samples taken from a Regulated DW System? ☐ Yes ☐ No

Are samples for human drinking water use? ☐ Yes ☐ No

Special Instructions / Specify Criteria to add on report (client Use)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
14.7			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
				18/8/17	8:45			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1977151-COFC

COC Number: 14 - 503475

Report To		Report Format / Dis		(Rush Turnaround Time (TAT) is not available for all tests)	
Company:		Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)		R ☐	Regular (Standard TAT if received by 3pm)
Contact:		Quality Control (QC) Report with Report ☐ Yes ☐ No		P ☐	Priority (2-4 business days if received by 3pm)
Address:		☐ Criteria on Report - provide details below if box checked		E ☐	Emergency (1-2 business days if received by 3pm)
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX		E2 ☐	Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:		Email 1 or Fax		Specify Date Required for E2,E or P:	
		Email 2		**Analysis Request**	

Invoice To	Same as Report To ☐ Yes ☐ No	Invoice Distribution	
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:		GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		**ALS Contact:**	**Sampler:**

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

ALS Sample # (lab 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
	CHE 3				
	"				
	"				
	"				
	"				
	"				
	"				
	"				
	"				

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐			SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐	No ☐		Custody seal intact	Yes ☐	No ☐	
Cooling Initiated	☐						

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
	17				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
				18/8/17	8:45			

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ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1977151-COFC

COC Number: 14 - 503479

Page 2 of 4

Report To	Herbert & Chestnut Dental	**Report Format / L**	**Select Service Level Below** (Rush Turnaround Time (TAT) is not available for all tests)
Company:		Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☐ Regular (Standard TAT if received by 3pm)
Contact:		Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:		☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:		Email 1 or Fax	Specify Date Required for E2,E or P:
		Email 2	**Analysis Request**
Invoice To	Same as Report To ☐ Yes ☐ No	**Invoice Distribution**	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
	Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax	
Contact:		Email 2	
Project Information		**Oil and Gas Required Fields (client use)**	
ALS Quote #:		Approver ID:	Cost Center:
Job #:		GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		**ALS Contact:**	**Sampler:**

ALS Sample # (lab 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
	#24				
	11				
	11				
	11				
	11				
	11				
	11				
	11				
	11				
	11				

Drinking Water (DW) Samples[1] (client use)	**Special Instructions / Specify Criteria to add on report (client Use)**
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐		SIF Observations	Yes	☐	No	☐
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes	☐	No	☐
Cooling Initiated	☐						

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
17	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
				18/4/17	8:45			

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NA-FM-0328e v09 Front04 January 2014

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ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1977151-COFC

COC Number: 14 - 503

Report To Hamlet of Chesterfield Inlet	**Report Format / Distribution**	**Select Service Level Below** (Rush Turnaround Time (TAT) is not available for all tests)	
Company:	Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☐ Regular (Standard TAT if received by 3pm)	
Contact:	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)	
Address:	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 business days if received by 3pm)	
	Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.	
Phone:	Email 1 or Fax	Specify Date Required for E2,E or P:	
	Email 2	**Analysis Request**	
Invoice To Same as Report To ☐ Yes ☐ No	**Invoice Distribution**	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Copy of Invoice with Report ☐ Yes ☐ No	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX		
Company:	Email 1 or Fax		
Contact:	Email 2		
Project Information	**Oil and Gas Required Fields (client use)**		
ALS Quote #:	Approver ID: / Cost Center:		
Job #:	GL Account: / Routing Code:		
PO / AFE:	Activity Code:		
LSD:	Location:		
ALS Lab Work Order # (lab use only)	**ALS Contact:** / **Sampler:**		

ALS Sample # (lab 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
	3A				
	"				
	"				
	"				
	"				
	"				
	"				
	"				
	"				
	"				

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

Are samples taken from a Regulated DW System? ☐ Yes ☐ No

Are samples for human drinking water use? ☐ Yes ☐ No

Special Instructions / Specify Criteria to add on report (client Use)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
	12		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
				18/6/17	8:45			

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

Hazardous Materials Spill Database

Environment Division of ENR
Scotia 6, 5102-50th Avenue; Yellowknife, NT X1A 3S8
Phone: (867) 873-7654 Fax: (867) 873-0221

Sorted By: SpillNo for the year(s): 2017

Spill No.	Date	Ter	Region	Location	Site Description	Commodity	Quantity	Source	Agency
2017071	2017-03-06	NU	KEE	Chesterfield Inlet	Chesterfield Inlet unit 93 A & B	Fuel	1 L	ST<	GN
2017344	2017-09-14	NU	KEE	Chesterfield Inlet	Chesterfield Inlet	Heating Fuel P-50	390 L	PL	GN
2017345	2017-09-14	NU	KEE	Chesterfield Inlet	63 56.7N 093 38.4W (Helicopter Island, Chesterfield Inlet)	Hydraulic Fluid	100 L	OTH	CCG
2017430	2017-11-15	NU	KEE	Chesterfield Inlet	Chesterfield Inlet, NU	Heating Fuel	23 L	ST<	GN

Total Spills on this Report: 4

This report contains information regarding spills that were reported to the NWT 24-Hour Spill Line. The absence of information on any particular location in no way guarantees that contamination has not occurred at that location.

LEGEND

Region:
BAF - Baffin
DEH - Deh Cho
INU - Inuvik
KEE - Keewatin
KIT - Kitikmeot
NSL - North Slave
SAH - Sahtu
SSL - South Slave

Source:
AIR - Aircraft
DRUM - Drum or Barrel
MV - Marine Vessel
NS - Natural Seepage
OTH - Other Transportation
PL - Pipe or Line
RT - Rail Train
SL - Sewage Lagoon
ST< - Storage Tank <4000 litres
ST> - Storage Tank >4000 litres
TP - Tailings Pond
TRU - Truck
UK - Unkown
WELL - Wet Wells, Flaring
Boom

Agency:
CCG - Canadian Coast Guard
EP - Environment Canada
GN - Government of Nunavut
GNWT - Government of Northwest Territories
ILA - Inuvialiut Land Administration
INAC - Indian and Northern Affairs Canada
NEB - National Energy Board

CHE-2

			2015			2016		2017			Statistics		
Parameter	**Unit**	**DL**	**22-Jun-15**	**29-Jul-15**	**18-Aug-15**	**11-Aug-16**	**09-Sep-16**	**13-Jun-17**	**31-Jul-17**	**16-Aug-17**	**Min**	**Max**	**Average**
Alkalinity													
Bicarbonate (HCO3)	mg/L	1.2	413	269	352	104	176	92.6	312	128	92.6	413	230.83
Carbonate (CO3)	mg/L	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.6	0.6	0.60
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	339	221	289	85.4	144	75.9	256	105	75.9	339	189.41
Ammonia by Colour													
Total (as N)	mg/L	0.20	61.7	0.077	0.099	4.53	6.87	7.9	49.3	0.021	0.021	61.7	16.31
Biochemical Oxygen Demand (BOD)													
Biochemical Oxygen Demand	mg/L	6.0	257	2.0	2.0	8.7	360	9.6	229	2.0	2	360	108.79
Carbonaceous BOD													
BOD Carbonaceous	mg/L	6.0	231	2.0	2.0	6.5	340	8.6	224	2.0	2	340	102.01
Chloride in Water by IC													
Chloride (Cl)	mg/L	10	70.1	288	355	31.0	42.2	22.5	68.0	74.5	22.5	355	118.91
Conductivity													
Conductivity	umhos/cm	1.0	946	1770	2260	392	560	267	775	515	267	2260	935.63
Fecal Coliforms													
Fecal Coliforms	MPN/100mL	3	110000	4	4	930	240	190	24200	10	4	110000	16947.25
Hardness Calculated													
Hardness (as CaCO3)	mg/L	0.30	56.5	360	524	111	194	50.0	60.8	169	50	524	190.66
Mercury Total													
Mercury (Hg)	mg/L	0.00020	0.00020	0.000020	0.000020	0.000020	0.00040	0.0000052	0.000050	0.0000050	0.000005	0.0004	0.000090
Nitrate in Water by IC													
Nitrate (as N)	mg/L	0.40	0.020	0.040	0.040	0.316	0.020	0.020	0.020	0.020	0.02	0.316	0.06
Nitrate + Nitrite													
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.070	0.070	0.348	0.070	0.070	0.070	0.070	0.07	0.348	0.10
Nitrite in Water by IC													
Nitrite (as N)	mg/L	0.20	0.010	0.020	0.020	0.032	0.011	0.010	0.010	0.010	0.01	0.032	0.02
Oil & Grease - Gravimetric													
Oil and Grease	mg/L	5.0	52.4	2.0	2.0	5.0	8.6	10.8	51.7	5.0	2	52.4	17.19
Phenol													
Phenols	mg/L	0.0010	0.158	0.0033	0.0010	0.0017	0.0030	0.0135	0.190	0.0010	0.001	0.19	0.05
Phosphorus, Total													
Phosphorus (P)	mg/L	0.010	12.1	0.084	0.076	1.93	50.8	2.66	8.72	0.021	0.021	50.8	9.55
Sulfate in Water by IC													
Sulfate (SO4)	mg/L	6.0	12.9	255	419	55.2	73.8	14.4	9.76	54.9	9.76	419	111.87
Total Metals by ICP-MS													
Aluminium (Al)	mg/L	0.0050	0.249	0.0256	0.0163	0.154	1.71	0.0545	0.5060	0.0121	0.0121	1.71	0.34
Arsenic (As)	mg/L	0.00020	0.00064	0.00078	0.00107	0.00080	0.0037	0.00062	0.00091	0.00033	0.00033	0.0037	0.0011
Cadmium (Cd)	mg/L	0.000010	0.000194	0.000023	0.000010	0.000073	0.00073	0.000035	0.000243	0.0000142	0.00001	0.00073	0.0002
Calcium (Ca)	mg/L	0.10	14.4	107	151	36.6	62.1	15.5	15.7	46.1	14.4	151	56.05
Chromium (Cr)	mg/L	0.0010	0.0013	0.0010	0.0010	0.0010	0.010	0.0010	0.00158	0.00027	0.00027	0.01	0.0021
Cobalt (Co)	mg/L	0.00020	0.00060	0.00070	0.00089	0.00051	0.0039	0.00035	0.00107	0.00017	0.00017	0.0039	0.0010
Copper (Cu)	mg/L	0.00020	0.150	0.00338	0.00142	0.00960	0.0580	0.00687	0.101	0.00076	0.00076	0.15	0.04
Iron (Fe)	mg/L	0.010	0.90	0.34	0.43	6.15	26.9	2.35	4.43	1.00	0.34	26.9	5.31
Lead (Pb)	mg/L	0.000090	0.00339	0.000172	0.000156	0.00192	0.0165	0.000387	0.00430	0.000050	0.00005	0.0165	0.0034
Magnesium (Mg)	mg/L	0.010	5.01	22.4	35.8	4.74	9.54	2.74	5.27	13.1	2.74	35.8	12.33
Manganese (Mn)	mg/L	0.00030	0.0483	0.0369	0.0673	0.0839	0.301	0.118	0.0622	0.0203	0.0203	0.301	0.092
Nickel (Ni)	mg/L	0.0020	0.0038	0.0056	0.0064	0.0028	0.020	0.0020	0.00552	0.00185	0.00185	0.02	0.006
Potassium (K)	mg/L	0.020	24.4	38.9	65.2	3.84	13.7	7.50	18.7	8.19	3.84	65.2	22.55
Sodium (Na)	mg/L	0.030	53.4	164	262	26.7	38.0	14.1	50.4	59.3	14.1	262	83.49
Zinc (Zn)	mg/L	0.0020	0.166	0.0134	0.0061	0.0342	0.251	0.0119	0.202	0.0030	0.003	0.251	0.09
Total Organic Carbon by Combustion													
Total Organic Carbon	mg/L	0.50	160	21.7	25.7	14.1	252	11.9	126	8.24	8.24	252	77.46
Total Suspended Solids													
Total Suspended Solids	mg/L	13	132	<5.0	5.0	255	507	18.0	113	15.0	5	507	149.29
pH													
pH	pH Units	0.10	6.93	7.70	7.18	6.90	7.53	7.08	7.22	7.27	6.9	7.7	7.23
Benzene	mg/L	0.00050	/	0.00050	0.00050	0.00050	0.00050	/	0.00050	/	0.0005	0.0005	0.0005
Toluene	mg/L	0.0010	/	0.0010	0.0010	0.0010	0.00010	/	0.0027	/	0.0001	0.0027	0.0012
Ethyl Benzene	mg/L	0.00050	/	0.00050	0.00050	0.00050	0.00050	/	0.00050	/	0.0005	0.0005	0.0005
o-Xylene	mg/L	0.00050	/	0.00050	0.00050	0.00050	0.00050	/	0.00050	/	0.0005	0.0005	0.0005
F1 (C6-C10)	mg/L	0.10	/	0.10	0.10	0.10	0.10	0.10	0.10	/	0.1	0.1	0.10
F2 (C10-C16)	mg/L	0.25	/	0.25	0.25	0.10	0.12	0.10	1.74	/	0.1	1.74	0.43
F3 (C16-C34)	mg/L	0.25	/	0.32	0.25	0.28	2.23	0.53	27.1	/	0.25	27.1	5.12
F4 (C34-C50)	mg/L	0.25	/	0.25	0.37	0.25	0.88	0.25	8.94	/	0.25	8.94	1.82
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	0.44	0.44	0.38	3.22	0.53	37.8	/	0.38	37.8	7.14

Chesterfield Inlet
CHE-3

			2014		2015			2016			2017			Statistics		
Parameter	**Unit**	**DL**	**24-Jul-14**	**19-Aug-14**	**22-Jun-15**	**29-Jul-15**	**18-Aug-15**	**06-Jul-16**	**11-Aug-16**	**09-Sep-16**	**13-Jun-17**	**31-Jul-17**	**16-Aug-17**	**Min**	**Max**	**Average**
Alkalinity																
Bicarbonate (HCO3)	mg/L	1.2	457	48	139	442	416	399	389	435	28.4	114	250	28.4	457	283.40
Carbonate (CO3)	mg/L	0.60	12	12	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.6	12	2.67
Hydroxide (OH)	mg/L	0.34	6.8	6.8	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	6.8	1.51
Total (as CaCO3)	mg/L	1.0	375	39	114	363	341	327	319	356	23.3	93.7	205	23.3	375	232.36
Ammonia by Colour																
Total (as N)	mg/L	0.20	88.0	0.010	0.051	74.4	69.9	68.9	74.4	68.8	1.71	0.024	19.1	0.01	88	42.30
Biochemical Oxygen Demand (BOD)																
Biochemical Oxygen Demand	mg/L	6.0	287	6.0	2.0	306	260	250	300	57	7.8	3.1	10.8	2	306	135.43
Carbonaceous BOD																
BOD Carbonaceous	mg/L	6.0	269	6.0	2.9	302	253	270	283	40	5.8	2.3	5.0	2.3	302	130.82
Chloride in Water by IC																
Chloride (Cl)	mg/L	10	72.4	30.8	96.4	63.5	71.9	71.1	57.5	60.2	8.44	107	54.6	8.44	107	63.08
Conductivity																
Conductivity	umhos/cm	1.0	1130	219	1450	990	955	1010	973	989	83.2	866	568	83.2	1450	839.38
Fecal Coliforms																
Fecal Coliforms	MPN/100mL	3	110000	3	3	110000	110000	110000	110000	110000	10	1660	610	3	110000	60207.82
Hardness Calculated																
Hardness (as CaCO3)	mg/L	0.30	46.0	37.9	674	44.8	57.7	47.2	57.5	52.1	17.7	246	118	17.7	674	127.17
Mercury Total																
Mercury (Hg)	mg/L	0.00020	0.00020	0.000020	0.000020	0.00040	0.00040	0.00040	0.00040	0.00020	0.0000063	0.0000050	0.0000050	0.000005	0.0004	0.0002
Nitrate in Water by IC																
Nitrate (as N)	mg/L	0.40	0.050	0.050	0.277	0.020	0.020	0.040	0.040	0.040	0.333	0.040	0.020	0.02	0.333	0.08
Nitrate + Nitrite																
Nitrate and Nitrite as N	mg/L	0.45	0.071	0.071	0.277	0.070	0.070	0.070	0.070	0.070	0.366	0.070	0.070	0.07	0.366	0.12
Nitrite in Water by IC																
Nitrite (as N)	mg/L	0.20	0.050	0.050	0.010	0.010	0.025	0.020	0.020	0.020	0.033	0.020	0.010	0.01	0.05	0.02
Oil & Grease - Gravimetric																
Oil and Grease	mg/L	5.0	50.3	2.0	2.0	60.7	473	62.4	61.0	55.9	5.0	5.0	5.0	2	473	71.12
Phenol																
Phenols	mg/L	0.0010	0.124	0.0010	0.0019	0.0048	0.152	0.0015	0.329	0.085	0.0043	0.0010	0.0010	0.001	0.329	0.06
Phosphorus, Total																
Phosphorus (P)	mg/L	0.010	13.2	0.012	0.055	11.6	10.6	11.8	11.9	11.4	0.477	0.186	4.54	0.012	13.2	6.89
Sulfate in Water by IC																
Sulfate (SO4)	mg/L	6.0	21.2	12.8	543	12.8	11.6	10.3	24.6	19.5	3.28	198	5.80	3.28	543	78.44
Total Metals by ICP-MS																
Aluminium (Al)	mg/L	0.0050	0.547	0.0888	0.0262	0.552	1.00	0.517	0.953	0.470	0.179	0.0150	0.0325	0.015	1	0.40
Arsenic (As)	mg/L	0.00020	0.00100	0.00024	0.00096	0.00059	0.00096	0.00057	0.00109	0.00092	0.00087	0.00083	0.00088	0.00024	0.00109	0.0008
Cadmium (Cd)	mg/L	0.000010	0.000256	0.000010	0.000199	0.000222	0.000370	0.000190	0.000452	0.000185	0.000024	0.0000334	0.0000050	0.000005	0.000452	0.0002
Calcium (Ca)	mg/L	0.10	10.7	9.59	237	11.1	14.7	11.9	14.1	12.8	5.19	74.0	35.3	5.19	237	39.67
Chromium (Cr)	mg/L	0.0010	0.0018	0.0010	0.0010	0.0016	0.0028	0.0016	0.0027	0.0017	0.0010	0.00029	0.00041	0.00029	0.0028	0.0014
Cobalt (Co)	mg/L	0.00020	0.00071	0.00020	0.00073	0.00063	0.00096	0.00063	0.00095	0.00068	0.00031	0.00084	0.00039	0.0002	0.00096	0.00064
Copper (Cu)	mg/L	0.00020	0.138	0.00882	0.0100	0.114	0.221	0.124	0.182	0.157	0.0116	0.00242	0.00134	0.00134	0.221	0.09
Iron (Fe)	mg/L	0.010	0.94	0.10	0.10	0.79	1.61	1.13	1.75	1.11	0.310	0.739	1.44	0.1	1.75	0.91
Lead (Pb)	mg/L	0.000090	0.00387	0.000097	0.000536	0.00234	0.0206	0.00267	0.00383	0.00224	0.000694	0.000142	0.000073	0.000073	0.0206	0.0034
Magnesium (Mg)	mg/L	0.010	4.66	3.39	20.2	4.17	5.07	4.25	5.40	4.92	1.15	14.7	7.19	1.15	20.2	6.83
Manganese (Mn)	mg/L	0.00030	0.0473	0.00210	0.0733	0.0398	0.0609	0.0475	0.0709	0.0541	0.0290	0.116	0.171	0.0021	0.171	0.065
Nickel (Ni)	mg/L	0.0020	0.0046	0.0025	0.0040	0.0034	0.0053	0.0039	0.0053	0.0041	0.0020	0.00385	0.00358	0.002	0.0053	0.0039
Potassium (K)	mg/L	0.020	30.6	3.29	23.0	23.3	25.6	25.7	33.1	26.5	2.68	12.0	14.9	2.68	33.1	20.06
Sodium (Na)	mg/L	0.030	54.6	24.3	72.3	50.7	52.5	56.7	61.4	50.3	4.85	90.9	50.6	4.85	90.9	51.74
Zinc (Zn)	mg/L	0.0020	0.230	0.0020	0.0401	0.206	0.304	0.173	0.254	0.203	0.0670	0.0151	0.0058	0.002	0.304	0.14
Total Organic Carbon by Combustion																
Total Organic Carbon	mg/L	0.50	133	5.6	17.3	143	124	212	209	167	6.53	15.3	23.3	5.6	212	96.00
Total Suspended Solids																
Total Suspended Solids	mg/L	13	90.0	5.0	5.0	100	440	130	288	100	12	17.0	11.0	5	440	108.91
pH																
pH	pH Units	0.10	7.81	7.51	7.81	7.53	6.91	7.85	7.18	7.94	7.05	7.15	7.45	6.91	7.94	7.47
Benzene	mg/L	0.00050	/	/	/	/	/	/	/	/	0.0005	/	/	0.0005	0.0005	0.0005
Toluene	mg/L	0.0010	/	/	/	/	/	/	/	/	0.0141	/	/	0.0141	0.0141	0.01
Ethyl Benzene	mg/L	0.00050	/	/	/	/	/	/	/	/	0.0005	/	/	0.0005	0.0005	0.0005
o-Xylene	mg/L	0.00050	/	/	/	/	/	/	/	/	0.0005	/	/	0.0005	0.0005	0.0005
F1 (C6-C10)	mg/L	0.10	/	/	/	/	/	/	/	/	0.1	/	/	0.1	0.1	0.10
F2 (C10-C16)	mg/L	0.25	/	/	/	/	/	/	/	/	0.1	/	/	0.1	0.1	0.10
F3 (C16-C34)	mg/L	0.25	/	/	/	/	/	/	/	/	0.25	/	/	0.25	0.25	0.25
F4 (C34-C50)	mg/L	0.25	/	/	/	/	/	/	/	/	0.25	/	/	0.25	0.25	0.25
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	/	/	/	/	/	/	/	0.38	/	/	0.38	0.38	0.38

Chesterfield Inlet
CHE-3A

			2016	2017			Statistics		
Parameter	**Unit**	**DL**	**09-Sep-16**	**13-Jun-17**	**31-Jul-17**	**16-Aug-17**	**Min**	**Max**	**Average**
Alkalinity									
Bicarbonate (HCO3)	mg/L	1.2	439	32.9	143	315	32.9	439	232.475
Carbonate (CO3)	mg/L	0.60	0.60	0.60	0.60	0.60	0.6	0.6	0.6
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	360	27.0	117	259	27	360	190.75
Ammonia by Colour									
Total (as N)	mg/L	0.20	75.4	3.69	0.034	43.3	0.034	75.4	30.606
Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	mg/L	6.0	83	4.4	29.1	133	4.4	133	62.375
Carbonaceous BOD									
BOD Carbonaceous	mg/L	6.0	40	3.4	12.4	124	3.4	124	44.95
Chloride in Water by IC									
Chloride (Cl)	mg/L	10	60.4	10.8	45.4	77.6	10.8	77.6	48.55
Conductivity									
Conductivity	umhos/cm	1.0	1000	98.7	421	786	98.7	1000	576.425
Fecal Coliforms									
Fecal Coliforms	MPN/100mL	3	110000	24200	3450	24200	3450	110000	40462.5
Hardness Calculated									
Hardness (as CaCO3)	mg/L	0.30	53.6	16.1	86.5	98.6	16.1	98.6	63.7
Mercury Total									
Mercury (Hg)	mg/L	0.00020	0.00020	0.0000088	0.0000250	0.000050	8.8E-06	0.0002	7.1E-05
Nitrate in Water by IC									
Nitrate (as N)	mg/L	0.40	0.040	0.021	0.606	0.020	0.02	0.606	0.17175
Nitrate + Nitrite									
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.070	0.709	0.070	0.07	0.709	0.22975
Nitrite in Water by IC									
Nitrite (as N)	mg/L	0.20	0.020	0.010	0.103	0.010	0.01	0.103	0.03575
Oil & Grease - Gravimetric									
Oil and Grease	mg/L	5.0	56.4	5.0	5.0	44.9	5	56.4	27.825
Phenol									
Phenols	mg/L	0.0010	0.226	0.0066	0.0010	0.213	0.001	0.226	0.11165
Phosphorus, Total									
Phosphorus (P)	mg/L	0.010	12.8	0.491	1.84	8.56	0.491	12.8	5.92275
Sulfate in Water by IC									
Sulfate (SO4)	mg/L	6.0	19.0	1.86	27.4	12.2	1.86	27.4	15.115
Total Metals by ICP-MS									
Aluminium (Al)	mg/L	0.0050	0.497	0.500	0.0348	0.558	0.0348	0.558	0.39745
Arsenic (As)	mg/L	0.00020	0.00085	0.00028	0.00087	0.00120	0.00028	0.0012	0.0008
Cadmium (Cd)	mg/L	0.000010	0.000196	0.000031	0.0000233	0.000198	2.33E-05	0.000198	0.000112
Calcium (Ca)	mg/L	0.10	13.0	4.11	26.5	26.5	4.11	26.5	17.5275
Chromium (Cr)	mg/L	0.0010	0.0015	0.0010	0.00034	0.00198	0.00034	0.00198	0.001205
Cobalt (Co)	mg/L	0.00020	0.00070	0.00070	0.00046	0.00122	0.00046	0.00122	0.00077
Copper (Cu)	mg/L	0.00020	0.158	0.00821	0.00741	0.0933	0.00741	0.158	0.06673
Iron (Fe)	mg/L	0.010	1.07	0.500	1.46	16.1	0.5	16.1	4.7825
Lead (Pb)	mg/L	0.000090	0.00230	0.000889	0.000416	0.00305	0.000416	0.00305	0.001664
Magnesium (Mg)	mg/L	0.010	5.13	1.41	4.96	7.85	1.41	7.85	4.8375
Manganese (Mn)	mg/L	0.00030	0.0534	0.0289	0.112	0.124	0.0289	0.124	0.079575
Nickel (Ni)	mg/L	0.0020	0.0040	0.0020	0.00358	0.00681	0.002	0.00681	0.004098
Potassium (K)	mg/L	0.020	26.3	2.62	9.54	21.2	2.62	26.3	14.915
Sodium (Na)	mg/L	0.030	50.5	6.60	36.8	64.3	6.6	64.3	39.55
Zinc (Zn)	mg/L	0.0020	0.207	0.0106	0.0152	0.163	0.0106	0.207	0.09895
Total Organic Carbon by Combustion									
Total Organic Carbon	mg/L	0.50	178	3.86	25.8	133	3.86	178	85.165
Total Suspended Solids									
Total Suspended Solids	mg/L	13	115	23.0	56	120	23	120	78.5
pH									
pH	pH Units	0.10	7.92	7.03	7.49	7.11	7.03	7.92	7.3875
Benzene	mg/L	0.00050	/	/	/	/	0	0	0
Toluene	mg/L	0.0010	/	/	/	/	0	0	0
Ethyl Benzene	mg/L	0.00050	/	/	/	/	0	0	0
o-Xylene	mg/L	0.00050	/	/	/	/	0	0	0
F1 (C6-C10)	mg/L	0.10	/	/	/	/	0	0	0
F2 (C10-C16)	mg/L	0.25	/	/	/	/	0	0	0
F3 (C16-C34)	mg/L	0.25	/	/	/	/	0	0	0
F4 (C34-C50)	mg/L	0.25	/	/	/	/	0	0	0
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	/	/	/	0	0	0

Chesterfield Inlet
CHE-4

			2014		2015			2016			2017		Statistics		
Parameter	**Unit**	**DL**	**24-Jul-14**	**19-Aug-14**	**22-Jun-15**	**29-Jul-15**	**18-Aug-15**	**06-Jul-16**	**11-Aug-16**	**09-Sep-16**	**31-Jul-17**	**16-Aug-17**	**Min**	**Max**	**Average**
Alkalinity															
Bicarbonate (HCO3)	mg/L	1.2	61	375	33.4	69.4	74.7	73.0	96.1	109	111	333	33.4	375	133.56
Carbonate (CO3)	mg/L	0.60	12	12	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.6	12	2.88
Hydroxide (OH)	mg/L	0.34	6.8	6.8	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	6.8	1.632
Total (as CaCO3)	mg/L	1.0	50	307	27.4	56.9	61.2	59.8	78.8	89.3	90.8	273	27.4	307	109.42
Ammonia by Colour															
Total (as N)	mg/L	0.20	0.026	66.7	0.053	0.117	0.010	0.036	0.022	0.010	0.011	48.2	0.01	66.7	11.5185
Biochemical Oxygen Demand (BOD)															
Biochemical Oxygen Demand	mg/L	6.0	6.0	336	2.0	2.0	2.0	2.0	2.0	2.0	2.0	530	2	530	88.6
Carbonaceous BOD															
BOD Carbonaceous	mg/L	6.0	6.0	310	2.0	2.0	2.0	2.0	2.0	2.5	2.0	450	2	450	78.05
Chloride in Water by IC															
Chloride (Cl)	mg/L	10	45.2	70.0	17.3	29.3	35.6	41.9	57.9	55.8	72.8	74.0	17.3	74	49.98
Conductivity															
Conductivity	umhos/cm	1.0	278	988	130	225	259	277	469	458	533	791	130	988	440.8
Fecal Coliforms															
Fecal Coliforms	MPN/100mL	3	7	110000	4	3	3	3	4	3	10	24200	3	110000	13423.7
Hardness Calculated															
Hardness (as CaCO3)	mg/L	0.30	46.8	44.2	24.1	47.9	61.8	56.7	119	114	149	95.4	24.1	149	75.89
Mercury Total															
Mercury (Hg)	mg/L	0.00020	0.000020	0.00020	0.000020	0.000020	0.00020	0.000020	0.000020	0.000020	0.0000050	0.0000250	0.000005	0.0002	0.000055
Nitrate in Water by IC															
Nitrate (as N)	mg/L	0.40	0.050	0.050	0.566	0.020	0.020	0.089	0.020	0.020	0.020	0.040	0.02	0.566	0.0895
Nitrate + Nitrite															
Nitrate and Nitrite as N	mg/L	0.45	0.071	0.071	0.579	0.070	0.070	0.089	0.070	0.070	0.070	0.070	0.07	0.579	0.123
Nitrite in Water by IC															
Nitrite (as N)	mg/L	0.20	0.050	0.050	0.012	0.010	0.010	0.010	0.010	0.010	0.010	0.020	0.01	0.05	0.0192
Oil & Grease - Gravimetric															
Oil and Grease	mg/L	5.0	2.0	65.6	2.0	2.0	2.0	5.0	5.0	5.0	5.0	106	2	106	19.96
Phenol															
Phenols	mg/L	0.0010	0.0010	0.125	0.0010	0.0017	0.0010	0.0010	0.0017	0.0018	0.0010	0.107	0.001	0.125	0.02422
Phosphorus, Total															
Phosphorus (P)	mg/L	0.010	0.026	10.8	0.040	0.012	0.017	0.044	0.022	0.012	0.019	6.28	0.012	10.8	1.7272
Sulfate in Water by IC															
Sulfate (SO4)	mg/L	6.0	13.3	15.9	6.08	9.63	18.0	9.51	57.2	50.2	69.6	5.68	5.68	69.6	25.51
Total Metals by ICP-MS															
Aluminium (Al)	mg/L	0.0050	0.0329	0.821	0.0250	0.0338	0.0607	0.0229	0.0092	0.0101	0.0067	0.389	0.0067	0.821	0.14113
Arsenic (As)	mg/L	0.00020	0.00042	0.00080	0.00028	0.00043	0.00038	0.00040	0.00025	0.00023	0.00024	0.00127	0.00023	0.00127	0.00047
Cadmium (Cd)	mg/L	0.000010	0.000010	0.000317	0.000016	0.000011	0.000013	0.000021	0.000020	0.000014	0.0000271	0.000150	0.00001	0.000317	5.99E-05
Calcium (Ca)	mg/L	0.10	12.2	10.4	6.33	12.9	16.7	15.3	34.4	30.9	42.8	25.5	6.33	42.8	20.743
Chromium (Cr)	mg/L	0.0010	0.0010	0.0029	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.00024	0.00169	0.00024	0.0029	0.001183
Cobalt (Co)	mg/L	0.00020	0.00020	0.00137	0.00020	0.00032	0.00032	0.00044	0.00034	0.00027	0.00024	0.00118	0.0002	0.00137	0.000488
Copper (Cu)	mg/L	0.00020	0.00722	0.142	0.00741	0.00659	0.00583	0.00679	0.00142	0.00131	0.00135	0.0656	0.00131	0.142	0.024552
Iron (Fe)	mg/L	0.010	0.12	1.45	0.10	0.11	0.28	0.076	0.277	0.059	0.106	9.38	0.059	9.38	1.1958
Lead (Pb)	mg/L	0.000090	0.000090	0.00807	0.000090	0.000090	0.000152	0.000090	0.000090	0.000090	0.000102	0.00231	0.00009	0.00807	0.001117
Magnesium (Mg)	mg/L	0.010	3.95	4.46	2.03	3.82	4.90	4.48	8.09	8.89	10.2	7.73	2.03	10.2	5.855
Manganese (Mn)	mg/L	0.00030	0.00284	0.0554	0.00030	0.00259	0.00305	0.00126	0.00200	0.00867	0.00138	0.198	0.0003	0.198	0.027549
Nickel (Ni)	mg/L	0.0020	0.0030	0.0055	0.0021	0.0034	0.0032	0.0042	0.0027	0.0021	0.00236	0.00648	0.0021	0.00648	0.003504
Potassium (K)	mg/L	0.020	3.04	21.9	4.95	1.84	3.23	5.31	4.54	6.98	5.90	20.7	1.84	21.9	7.839
Sodium (Na)	mg/L	0.030	32.3	51.0	15.1	26.8	31.2	32.9	47.7	41.6	48.1	62.7	15.1	62.7	38.94
Zinc (Zn)	mg/L	0.0020	0.0023	0.241	0.0020	0.0020	0.0026	0.0068	0.0028	0.0032	0.0030	0.102	0.002	0.241	0.03677
Total Organic Carbon by Combustion															
Total Organic Carbon	mg/L	0.50	13.5	165	8.7	12.2	9.9	12.9	9.96	10.7	8.38	145	8.38	165	39.624
Total Suspended Solids															
Total Suspended Solids	mg/L	13	5.0	146	5.0	5.0	5.0	5.0	5.0	5.0	6.0	167	5	167	35.4
pH															
pH	pH Units	0.10	7.73	7.34	7.21	7.41	7.36	7.73	7.42	8.03	7.56	7.18	7.18	8.03	7.497
Benzene	mg/L	0.00050	/	/	/	/	/	0.0005	/	/	/	/	0.0005	0.0005	0.0005
Toluene	mg/L	0.0010	/	/	/	/	/	0.001	/	/	/	/	0.001	0.001	0.001
Ethyl Benzene	mg/L	0.00050	/	/	/	/	/	0.0005	/	/	/	/	0.0005	0.0005	0.0005
o-Xylene	mg/L	0.00050	/	/	/	/	/	0.0005	/	/	/	/	0.0005	0.0005	0.0005
F1 (C6-C10)	mg/L	0.10	/	/	/	/	/	0.1	/	/	/	/	0.1	0.1	0.1
F2 (C10-C16)	mg/L	0.25	/	/	/	/	/	0.1	/	/	/	/	0.1	0.1	0.1
F3 (C16-C34)	mg/L	0.25	/	/	/	/	/	0.25	/	/	/	/	0.25	0.25	0.25
F4 (C34-C50)	mg/L	0.25	/	/	/	/	/	0.25	/	/	/	/	0.25	0.25	0.25
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	/	/	/	/	0.38	/	/	/	/	0.38	0.38	0.38