ANNUAL REPORT
FOR THE HAMLET OF REPULSE BAY

YEAR BEING REPORTED: 2017

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence No. **3BM-REP1520** issued to the **Hamlet of Repulse Bay**.

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 REP-1 (water supply volume) and REP-3 (sewage discharge volume), as well as detailed chemical, physical and biological analysis required at REP-2, REP-4, REP-6 and REP-7.

Month Reported	Quantity of Water Obtained from all Sources (m^3)	Quantity of Sewage Waste Discharged (m^3)
January	3,022,249.20	Same
February	3,193,618.50	Same
March	3,264,986.50	Same
April	3,212,582.90	Same
May	3,388,821.30	Same
June	3,086,940.00	Same
July	3,141,256.10	Same
August	3,446,735.60	Same
September	3,475,512.20	Same
October	3,376,843.20	Same
November	3,308,251.90	Same
December	3,542,577.80	Same
ANNUAL TOTAL	39,460,375.20	

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

- The new Water Treatment Plant was substantially completed December 2016 and warranty work is still being completed (Regional CGS Project Management Office).
- Improved segregation at the Solid Waste Site is taking place. Batteries have been collected and are being stored in battery boxes located in a seacan.

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

- Spills:

Spill No.	Date	Site Description	Commodity	Quantity
2017154	2017-05-16	Housing Unit 95	Heating Fuel P-50	38 L
2017155	2017-05-11	Housing Unit 99	Heating Fuel P-50	90 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;

- none

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.

- The updated O&M Manual for the new Water Treatment Plant will be submitted following project completion.

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 INAC Inspection took place on July 18, 2017. A copy of the inspection report can be found in Appendix F.

List of Appendixes:

Appendix A: REP-6 Effluent Quality Limits – 1 page
Appendix B: Certificate of Analysis June 29, 2017 – 13 pages
Appendix C: Certificate of Analysis July 19, 2017 – 13 pages
Appendix D: Hazardous Materials Spill Database, Repulse Bay 2017 – 1 page
Appendix E: Naujaat Sampling Results Summary – 4 pages
Appendix F: 2017 INAC Inspection Report – 1 page

2017 Naujaat Monitoring Stations and Sampling Parameters Summary for Water License No. 3BM-REP1520
Part D, Item 2; REP-6 Effluent Quality Limits

Parameter	Maximum Concentration of any Grab sample	REP-6	
		29-Jun-17	19-Jul-17
BOD_5	80 mg/L	17.3	44
Total Suspended Solids	70 mg/L	16.0	280.0
Fecal Coliforms	1 x 10^6 CFU/100 mL (1 x 10^6 CFU/dl)	411	10
Oil & Grease	No visible sheen	5	11.2
pH	between 6 and 9	7.75	10.12

exceeds effluent quality limits

Hamlet of Naujaat (Repulse Bay)
ATTN: ROB HEDLEY
PO Box 10
Repulse Bay / Naujaat NU X0C 0H0

Date Received: 01-JUL-17
Report Date: 14-JUL-17 06:52 (MT)
Version: FINAL

Client Phone: 867-462-9952

Certificate of Analysis

Lab Work Order #: L1952278

Project P.O. #: NOT SUBMITTED
Job Reference: HAMLET OF NAUJAAT WASTE WATER
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
L1952278-1 REP-6							
Sampled By: CLIENT on 29-JUN-17 @ 08:50							
Matrix: WW							
Miscellaneous Parameters							
Fecal Coliforms	411	PEHR	1	MPN/100mL		01-JUL-17	R3763783
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	171		1.2	mg/L		07-JUL-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		07-JUL-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		07-JUL-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	141		1.0	mg/L		05-JUL-17	R3766126
Ammonia by colour							
Ammonia, Total (as N)	15.9		2.0	mg/L		11-JUL-17	R3769974
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	17.3		6.0	mg/L		01-JUL-17	R3767196
Carbonaceous BOD							
BOD Carbonaceous	19.1		6.0	mg/L		05-JUL-17	R3768518
Chloride in Water by IC							
Chloride (Cl)	18.9		0.50	mg/L		02-JUL-17	R3765465
Conductivity							
Conductivity	342		1.0	umhos/cm		05-JUL-17	R3766126
Hardness Calculated							
Hardness (as CaCO3)	72.8	HTC	0.25	mg/L		06-JUL-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	04-JUL-17	07-JUL-17	R3769516
Nitrate in Water by IC							
Nitrate (as N)	0.155		0.020	mg/L		02-JUL-17	R3765465
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.155		0.070	mg/L		06-JUL-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.040		0.040	mg/L		02-JUL-17	R3765465
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		10-JUL-17	R3768790
Phenol (4AAP)							
Phenols (4AAP)	0.0013		0.0010	mg/L		13-JUL-17	R3771332
Phosphorus, Total							
Phosphorus (P)-Total	1.98		0.050	mg/L		07-JUL-17	R3767086
Sulfate in Water by IC							
Sulfate (SO4)	5.27		0.30	mg/L		02-JUL-17	R3765465
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0240		0.0050	mg/L	05-JUL-17	05-JUL-17	R3766035
Arsenic (As)-Total	0.00028		0.00020	mg/L	05-JUL-17	05-JUL-17	R3766035
Cadmium (Cd)-Total	0.000010		0.000010	mg/L	05-JUL-17	05-JUL-17	R3766035
Calcium (Ca)-Total	21.7		0.10	mg/L	05-JUL-17	05-JUL-17	R3766035
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	05-JUL-17	05-JUL-17	R3766035
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	05-JUL-17	05-JUL-17	R3766035
Copper (Cu)-Total	0.0107		0.00020	mg/L	05-JUL-17	05-JUL-17	R3766035
Iron (Fe)-Total	0.443		0.010	mg/L	05-JUL-17	05-JUL-17	R3766035
Lead (Pb)-Total	0.000178		0.000090	mg/L	05-JUL-17	05-JUL-17	R3766035
Magnesium (Mg)-Total	4.52		0.010	mg/L	05-JUL-17	05-JUL-17	R3766035
Manganese (Mn)-Total	0.0299		0.00030	mg/L	05-JUL-17	05-JUL-17	R3766035
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	05-JUL-17	05-JUL-17	R3766035
Potassium (K)-Total	7.75		0.020	mg/L	05-JUL-17	05-JUL-17	R3766035

* 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
L1952278-1 REP-6							
Sampled By: CLIENT on 29-JUN-17 @ 08:50							
Matrix: WW							
Total Metals by ICP-MS							
Sodium (Na)-Total	17.3		0.030	mg/L	05-JUL-17	05-JUL-17	R3766035
Zinc (Zn)-Total	0.0086		0.0020	mg/L	05-JUL-17	05-JUL-17	R3766035
Total Organic Carbon by Combustion							
Total Organic Carbon	14.5		0.50	mg/L		11-JUL-17	R3769947
Total Suspended Solids							
Total Suspended Solids	16		10	mg/L		06-JUL-17	R3767474
pH							
pH	7.75		0.10	pH units		05-JUL-17	R3766126
L1952278-2 REP-2A							
Sampled By: CLIENT on 29-JUN-17 @ 09:25							
Matrix: WW							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		06-JUL-17	R3767225
Toluene	<0.0010		0.0010	mg/L		06-JUL-17	R3767225
Ethyl benzene	<0.00050		0.00050	mg/L		06-JUL-17	R3767225
o-Xylene	<0.00050		0.00050	mg/L		06-JUL-17	R3767225
m+p-Xylenes	<0.00050	DLB	0.00050	mg/L		06-JUL-17	R3767225
F1 (C6-C10)	<0.10		0.10	mg/L		06-JUL-17	R3767225
Surrogate: 4-Bromofluorobenzene (SS)	114.1		70-130	%		06-JUL-17	R3767225
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUL-17	06-JUL-17	R3767089
F3 (C16-C34)	<0.25		0.25	mg/L	05-JUL-17	06-JUL-17	R3767089
F4 (C34-C50)	<0.25		0.25	mg/L	05-JUL-17	06-JUL-17	R3767089
Surrogate: 2-Bromobenzotrifluoride	87.0		60-140	%	05-JUL-17	06-JUL-17	R3767089
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		10-JUL-17	
F2-Naphth	<0.10		0.10	mg/L		10-JUL-17	
F3-PAH	<0.25		0.25	mg/L		10-JUL-17	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		10-JUL-17	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00071		0.00071	mg/L		07-JUL-17	
Miscellaneous Parameters							
Fecal Coliforms	83	PEHR	1	MPN/100mL		01-JUL-17	R3763783
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	05-JUL-17	06-JUL-17	R3768615
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	05-JUL-17	06-JUL-17	R3768615
Acenaphthene	<0.000020		0.000020	mg/L	05-JUL-17	06-JUL-17	R3768615
Acenaphthylene	<0.000020		0.000020	mg/L	05-JUL-17	06-JUL-17	R3768615
Anthracene	<0.000010		0.000010	mg/L	05-JUL-17	06-JUL-17	R3768615
Acridine	<0.000020		0.000020	mg/L	05-JUL-17	06-JUL-17	R3768615
Benzo(a)anthracene	<0.000010		0.000010	mg/L	05-JUL-17	06-JUL-17	R3768615
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	05-JUL-17	06-JUL-17	R3768615
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	05-JUL-17	06-JUL-17	R3768615
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	05-JUL-17	06-JUL-17	R3768615
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	05-JUL-17	06-JUL-17	R3768615
Chrysene	<0.000020		0.000020	mg/L	05-JUL-17	06-JUL-17	R3768615
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	05-JUL-17	06-JUL-17	R3768615
Fluoranthene	<0.000020		0.000020	mg/L	05-JUL-17	06-JUL-17	R3768615
Fluorene	<0.000020		0.000020	mg/L	05-JUL-17	06-JUL-17	R3768615
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	05-JUL-17	06-JUL-17	R3768615

* 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
L1952278-2 REP-2A							
Sampled By: CLIENT on 29-JUN-17 @ 09:25							
Matrix: WW							
Polyaromatic Hydrocarbons (PAHs)							
Naphthalene	<0.000050		0.000050	mg/L	05-JUL-17	06-JUL-17	R3768615
Phenanthrene	<0.000050		0.000050	mg/L	05-JUL-17	06-JUL-17	R3768615
Pyrene	<0.000010		0.000010	mg/L	05-JUL-17	06-JUL-17	R3768615
Quinoline	<0.000020		0.000020	mg/L	05-JUL-17	06-JUL-17	R3768615
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	05-JUL-17	06-JUL-17	R3768615
Surrogate: Acenaphthene d10	88.9		40-130	%	05-JUL-17	06-JUL-17	R3768615
Surrogate: Acridine d9	102.1		40-130	%	05-JUL-17	06-JUL-17	R3768615
Surrogate: Chrysene d12	98.2		40-130	%	05-JUL-17	06-JUL-17	R3768615
Surrogate: Naphthalene d8	76.9		40-130	%	05-JUL-17	06-JUL-17	R3768615
Surrogate: Phenanthrene d10	90.3		40-130	%	05-JUL-17	06-JUL-17	R3768615
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	42.5		1.2	mg/L		07-JUL-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		07-JUL-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		07-JUL-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	34.8		1.0	mg/L		05-JUL-17	R3766342
Ammonia by colour							
Ammonia, Total (as N)	0.046		0.010	mg/L		07-JUL-17	R3767915
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		01-JUL-17	R3767196
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		05-JUL-17	R3768518
Chloride in Water by IC							
Chloride (Cl)	1.21		0.50	mg/L		02-JUL-17	R3765465
Conductivity							
Conductivity	64.1		1.0	umhos/cm		05-JUL-17	R3766342
Hardness Calculated							
Hardness (as CaCO3)	31.2	HTC	0.25	mg/L		06-JUL-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	04-JUL-17	07-JUL-17	R3769516
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		02-JUL-17	R3765465
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		06-JUL-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		02-JUL-17	R3765465
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		10-JUL-17	R3768790
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		13-JUL-17	R3771332
Phosphorus, Total							
Phosphorus (P)-Total	0.041		0.010	mg/L		07-JUL-17	R3767086
Sulfate in Water by IC							
Sulfate (SO4)	1.29		0.30	mg/L		02-JUL-17	R3765465
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0794		0.0050	mg/L	05-JUL-17	05-JUL-17	R3766035
Arsenic (As)-Total	<0.00020		0.00020	mg/L	05-JUL-17	05-JUL-17	R3766035
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	05-JUL-17	05-JUL-17	R3766035
Calcium (Ca)-Total	9.87		0.10	mg/L	05-JUL-17	05-JUL-17	R3766035

* 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
L1952278-2 REP-2A							
Sampled By: CLIENT on 29-JUN-17 @ 09:25							
Matrix: WW							
Total Metals by ICP-MS							
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	05-JUL-17	05-JUL-17	R3766035
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	05-JUL-17	05-JUL-17	R3766035
Copper (Cu)-Total	0.00057		0.00020	mg/L	05-JUL-17	05-JUL-17	R3766035
Iron (Fe)-Total	0.154		0.010	mg/L	05-JUL-17	05-JUL-17	R3766035
Lead (Pb)-Total	0.000116		0.000090	mg/L	05-JUL-17	05-JUL-17	R3766035
Magnesium (Mg)-Total	1.60		0.010	mg/L	05-JUL-17	05-JUL-17	R3766035
Manganese (Mn)-Total	0.0406		0.00030	mg/L	05-JUL-17	05-JUL-17	R3766035
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	05-JUL-17	05-JUL-17	R3766035
Potassium (K)-Total	0.652		0.020	mg/L	05-JUL-17	05-JUL-17	R3766035
Sodium (Na)-Total	1.21		0.030	mg/L	05-JUL-17	05-JUL-17	R3766035
Zinc (Zn)-Total	0.0024		0.0020	mg/L	05-JUL-17	05-JUL-17	R3766035
Total Organic Carbon by Combustion							
Total Organic Carbon	1.83		0.50	mg/L		11-JUL-17	R3769947
Total Suspended Solids							
Total Suspended Solids	<5.0		5.0	mg/L		06-JUL-17	R3767474
pH							
pH	7.28		0.10	pH units		05-JUL-17	R3766342
L1952278-3 REP-2							
Sampled By: CLIENT on 29-JUN-17 @ 09:45							
Matrix: WW							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		06-JUL-17	R3767225
Toluene	0.0101		0.0010	mg/L		06-JUL-17	R3767225
Ethyl benzene	0.00212		0.00050	mg/L		06-JUL-17	R3767225
o-Xylene	0.00339		0.00050	mg/L		06-JUL-17	R3767225
m+p-Xylenes	0.00582	DLB	0.00050	mg/L		06-JUL-17	R3767225
F1 (C6-C10)	0.27		0.10	mg/L		06-JUL-17	R3767225
Surrogate: 4-Bromofluorobenzene (SS)	95.5		70-130	%		06-JUL-17	R3767225
CCME PHC F2-F4 in Water							
F2 (C10-C16)	0.88	DLM	0.20	mg/L	05-JUL-17	06-JUL-17	R3767089
F3 (C16-C34)	2.99	DLM	0.50	mg/L	05-JUL-17	06-JUL-17	R3767089
F4 (C34-C50)	<0.50	DLM	0.50	mg/L	05-JUL-17	06-JUL-17	R3767089
Surrogate: 2-Bromobenzotrifluoride	83.5		60-140	%	05-JUL-17	06-JUL-17	R3767089
CCME Total Hydrocarbons							
F1-BTEX	0.25		0.10	mg/L		13-JUL-17	
F2-Naphth	0.88		0.20	mg/L		13-JUL-17	
F3-PAH	2.99		0.50	mg/L		13-JUL-17	
Total Hydrocarbons (C6-C50)	4.14		0.74	mg/L		13-JUL-17	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.00920		0.00071	mg/L		07-JUL-17	
Miscellaneous Parameters							
Fecal Coliforms	>2420	PEHR	1	MPN/100mL		01-JUL-17	R3763783
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.00020	DLM	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
2-Methyl Naphthalene	0.00025	DLM	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
Acenaphthene	<0.00020	DLM	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
Acenaphthylene	<0.00020	DLM	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
Anthracene	<0.00010	DLM	0.00010	mg/L	05-JUL-17	12-JUL-17	R3768615
Acridine	<0.00020	DLM	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
Benzo(a)anthracene	<0.00010	DLM	0.00010	mg/L	05-JUL-17	12-JUL-17	R3768615

* 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
L1952278-3 REP-2							
Sampled By: CLIENT on 29-JUN-17 @ 09:45							
Matrix: WW							
Polyaromatic Hydrocarbons (PAHs)							
Benzo(a)pyrene	<0.000050	DLM	0.000050	mg/L	05-JUL-17	12-JUL-17	R3768615
Benzo(b&j)fluoranthene	<0.00010	DLM	0.00010	mg/L	05-JUL-17	12-JUL-17	R3768615
Benzo(g,h,i)perylene	<0.00020	DLM	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
Benzo(k)fluoranthene	<0.00010	DLM	0.00010	mg/L	05-JUL-17	12-JUL-17	R3768615
Chrysene	<0.00020	DLM	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
Dibenzo(a,h)anthracene	<0.000050	DLM	0.000050	mg/L	05-JUL-17	12-JUL-17	R3768615
Fluoranthene	<0.00020	DLM	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
Fluorene	<0.00020	DLM	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
Indeno(1,2,3-cd)pyrene	<0.00010	DLM	0.00010	mg/L	05-JUL-17	12-JUL-17	R3768615
Naphthalene	<0.00050	DLM	0.00050	mg/L	05-JUL-17	12-JUL-17	R3768615
Phenanthrene	<0.00050	DLM	0.00050	mg/L	05-JUL-17	12-JUL-17	R3768615
Pyrene	<0.00020	DLM	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
Quinoline	0.00022	EMPC	0.00020	mg/L	05-JUL-17	12-JUL-17	R3768615
B(a)P Total Potency Equivalent	<0.000072		0.000072	mg/L	05-JUL-17	12-JUL-17	R3768615
Surrogate: Acenaphthene d10	82.6		40-130	%	05-JUL-17	12-JUL-17	R3768615
Surrogate: Acridine d9	107.2		40-130	%	05-JUL-17	12-JUL-17	R3768615
Surrogate: Chrysene d12	80.6		40-130	%	05-JUL-17	12-JUL-17	R3768615
Surrogate: Naphthalene d8	188.0	SOL:MI	40-130	%	05-JUL-17	12-JUL-17	R3768615
Surrogate: Phenanthrene d10	85.9		40-130	%	05-JUL-17	12-JUL-17	R3768615
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	455		1.2	mg/L		07-JUL-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		07-JUL-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		07-JUL-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	373		1.0	mg/L		05-JUL-17	R3766342
Ammonia by colour							
Ammonia, Total (as N)	18.3		2.0	mg/L		07-JUL-17	R3767915
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	450		100	mg/L		01-JUL-17	R3767196
Carbonaceous BOD							
BOD Carbonaceous	330		50	mg/L		05-JUL-17	R3768518
Chloride in Water by IC							
Chloride (Cl)	32.1		1.0	mg/L		02-JUL-17	R3765465
Conductivity							
Conductivity	1120		1.0	umhos/cm		05-JUL-17	R3766342
Hardness Calculated							
Hardness (as CaCO3)	487	HTC	0.25	mg/L		06-JUL-17	
Mercury Total							
Mercury (Hg)-Total	0.0000470		0.0000050	mg/L	04-JUL-17	07-JUL-17	R3769516
Nitrate in Water by IC							
Nitrate (as N)	<0.040	DLM	0.040	mg/L		02-JUL-17	R3765465
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		06-JUL-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		02-JUL-17	R3765465
Oil & Grease - Gravimetric							
Oil and Grease	8.0		5.0	mg/L		10-JUL-17	R3768790
Phenol (4AAP)							
Phenols (4AAP)	0.0598		0.0010	mg/L		13-JUL-17	R3771332

* 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
L1952278-3 REP-2							
Sampled By: CLIENT on 29-JUN-17 @ 09:45							
Matrix: WW							
Phosphorus, Total							
Phosphorus (P)-Total	3.50		0.050	mg/L		07-JUL-17	R3767086
Sulfate in Water by IC							
Sulfate (SO4)	194		0.60	mg/L		02-JUL-17	R3765465
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.773		0.0050	mg/L	05-JUL-17	05-JUL-17	R3766035
Arsenic (As)-Total	0.00287		0.00020	mg/L	05-JUL-17	05-JUL-17	R3766035
Cadmium (Cd)-Total	0.000349		0.000010	mg/L	05-JUL-17	05-JUL-17	R3766035
Calcium (Ca)-Total	175		0.10	mg/L	05-JUL-17	05-JUL-17	R3766035
Chromium (Cr)-Total	0.0068		0.0010	mg/L	05-JUL-17	05-JUL-17	R3766035
Cobalt (Co)-Total	0.00415		0.00020	mg/L	05-JUL-17	05-JUL-17	R3766035
Copper (Cu)-Total	0.0256		0.00020	mg/L	05-JUL-17	05-JUL-17	R3766035
Iron (Fe)-Total	3.93		0.010	mg/L	05-JUL-17	05-JUL-17	R3766035
Lead (Pb)-Total	0.00857		0.000090	mg/L	05-JUL-17	05-JUL-17	R3766035
Magnesium (Mg)-Total	12.3		0.010	mg/L	05-JUL-17	05-JUL-17	R3766035
Manganese (Mn)-Total	0.529		0.00030	mg/L	05-JUL-17	05-JUL-17	R3766035
Nickel (Ni)-Total	0.0108		0.0020	mg/L	05-JUL-17	05-JUL-17	R3766035
Potassium (K)-Total	25.1		0.020	mg/L	05-JUL-17	05-JUL-17	R3766035
Sodium (Na)-Total	68.5		0.030	mg/L	05-JUL-17	05-JUL-17	R3766035
Zinc (Zn)-Total	0.276		0.0020	mg/L	05-JUL-17	05-JUL-17	R3766035
Total Organic Carbon by Combustion							
Total Organic Carbon	253		5.0	mg/L		11-JUL-17	R3769947
Total Suspended Solids							
Total Suspended Solids	54		10	mg/L		06-JUL-17	R3767474
pH							
pH	6.92		0.10	pH units		05-JUL-17	R3766342

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
DLB	Detection Limit Raised. Analyte detected at comparable level in Method Blank.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
EMPC	Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.
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.
SOL:MI	Surrogate recovery outside acceptable limits due to matrix interference

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

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.
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.

FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97

This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed 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 a positive response are counted. The final result is 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.

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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
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:

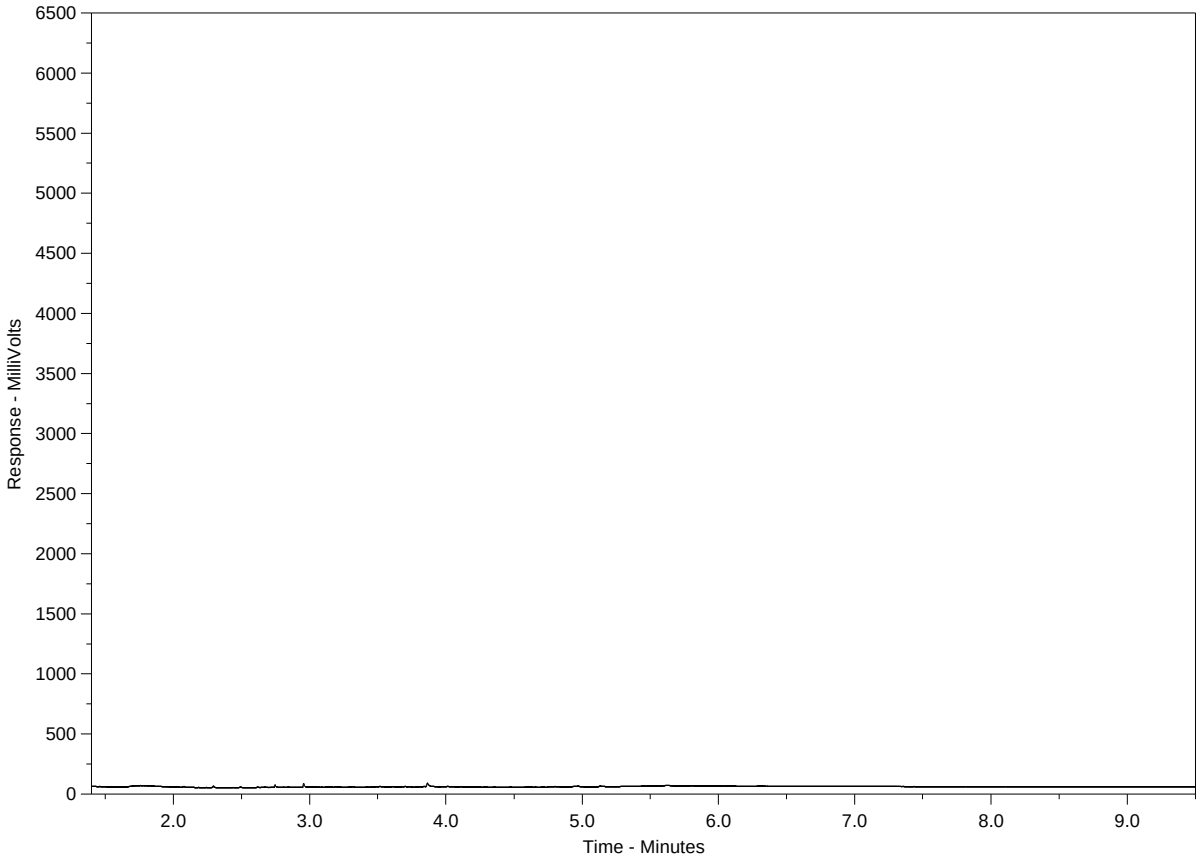
GLOSSARY OF REPORT TERMS

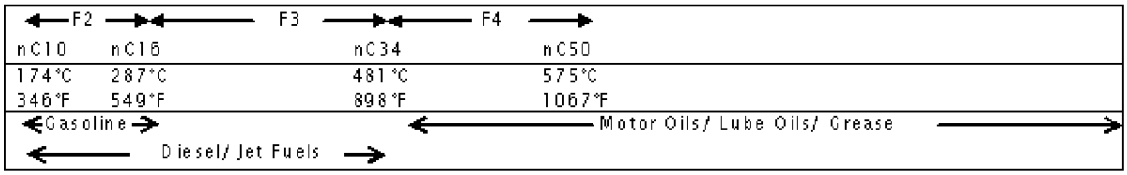
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates 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: L1952278-2
Client Sample ID: REP-2A





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

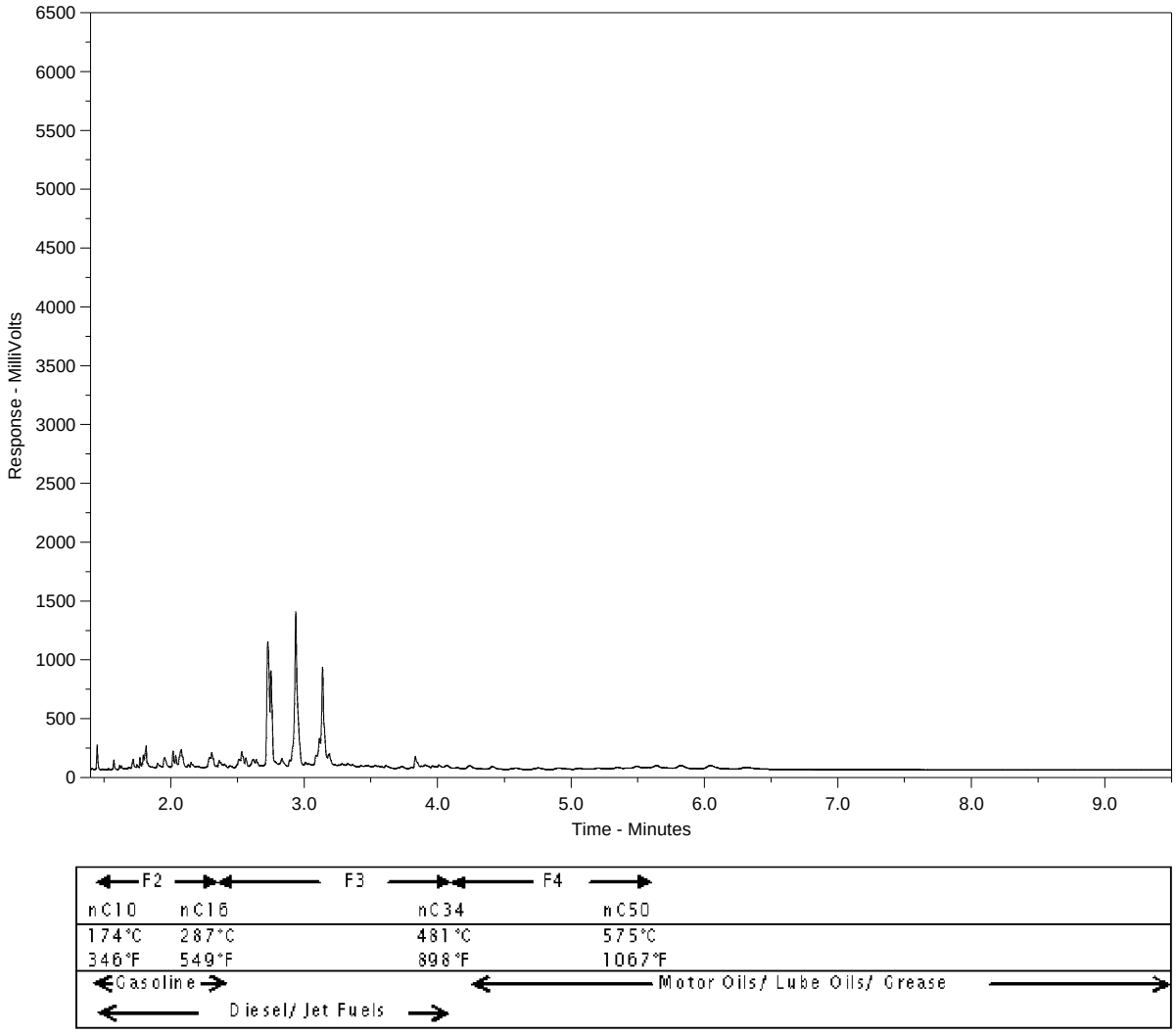
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L1952278-3
Client Sample ID: REP-2



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

L1952278-COFC

COC Number: 15 - 571778

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Format / Distribution		Select Service Level Below — Confirm all E&P TATs with your AM - surcharges will apply
Company:	Hamlet of Naujaat	Select Report Format:	☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Rob Hedley	Quality Control (QC) Report with Report	☐ YES ☐ NO	PRIORITY (Business Days): 4 day [P4] ☐ / 3 day [P3] ☐ / 2 day [P2] ☐ — EMERGENCY: 1 Business day [E1] ☐ / Same Day, Weekend or Statutory holiday [E0] ☐
Phone:	867-462-9952	☐ Compare Results to Criteria on Report - provide details below if box checked		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
	Company address below will appear on the final report	Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	For tests that can not be performed according to the service level selected, you will be contacted.
Street:	PO. Box 10	Email 1 or Fax	saonaujaat@qiniq.com	Analysis Request
City/Province:	Naujaat, NU	Email 2	Cfaulkner@gov.nu.ca	
Postal Code:	X0C 0H0	Email 3	Mlusty@gov.nu.ca	
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 Account # / Quote #:	WL0624	AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler: Rob Hedley

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	Routine	BOD	Bacteria	Total Metals	Total Nutrients	Phenols	Total Mercury	Oil + Grease (2)	BTX/F1 (2)	F2-F4 (2)	PAH			Number of Containers
	REP-6	29-06-17	8:50 AM	WW	✓	✓	P	P	P	P	P	P						9
	REP-2A	29-06-17	9:25 AM	WW	✓	✓	P	P	P	P	P	P	P	P	P			15
	REP-2	29-06-17	9:45 AM	WW	✓	✓	P	P	P	P	P	P	P	P	P			15
	*REP-5 had no water present, dried up location.																	Ø

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	Nunavut - WW - GRP1 - WP
Are samples for human drinking water use? ☐ YES ☑ NO	BTX, F1-F4, PAH

SAMPLE CONDITION AS RECEIVED (lab use only)

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

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C	
				10°C

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date: 06-29-2017	Time: 9:10AM	Received by: LD	Date: 15/JUL/17	Time: 13:20	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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**.

Hamlet of Naujaat (Repulse Bay)
ATTN: ROB HEDLEY
PO Box 10
Repulse Bay NU X0C 0H0

Date Received: 21-JUL-17
Report Date: 04-AUG-17 10:55 (MT)
Version: FINAL

Client Phone: 867-462-9952

Certificate of Analysis

Lab Work Order #: L1962532

Project P.O. #: NOT SUBMITTED
Job Reference: WATER LICENSE MONITORING
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
L1962532-1 REP-6 [09:00]							
Sampled By: KJ on 19-JUL-17 @ 09:00							
Matrix: WASTEWATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	38.9		1.2	mg/L		26-JUL-17	
Alkalinity, Carbonate							
Carbonate (CO3)	51.5		0.60	mg/L		26-JUL-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		26-JUL-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	118		1.0	mg/L		22-JUL-17	R3781711
Ammonia by colour							
Ammonia, Total (as N)	1.25		0.10	mg/L		26-JUL-17	R3783260
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	44		20	mg/L		21-JUL-17	R3783413
Carbonaceous BOD							
BOD Carbonaceous	25.6		6.0	mg/L		21-JUL-17	R3783413
Chloride in Water by IC							
Chloride (Cl)	26.2		0.50	mg/L		21-JUL-17	R3781713
Conductivity							
Conductivity	274		1.0	umhos/cm		22-JUL-17	R3781711
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10	PEHR	10	MPN/100mL		21-JUL-17	R3780067
Hardness Calculated							
Hardness (as CaCO3)	115	HTC	0.20	mg/L		26-JUL-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	24-JUL-17	27-JUL-17	R3784534
Nitrate in Water by IC							
Nitrate (as N)	0.434		0.020	mg/L		21-JUL-17	R3781713
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.603		0.070	mg/L		25-JUL-17	
Nitrite in Water by IC							
Nitrite (as N)	0.168		0.010	mg/L		21-JUL-17	R3781713
Oil & Grease - Gravimetric							
Oil and Grease	11.2		5.0	mg/L		31-JUL-17	R3785820
Phenol (4AAP)							
Phenols (4AAP)	0.0013		0.0010	mg/L		26-JUL-17	R3782295
Phosphorus, Total							
Phosphorus (P)-Total	2.82		0.10	mg/L		25-JUL-17	R3781672
Sulfate in Water by IC							
Sulfate (SO4)	9.76		0.30	mg/L		21-JUL-17	R3781713
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0783		0.0030	mg/L	25-JUL-17	25-JUL-17	R3782339
Arsenic (As)-Total	0.00049		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Cadmium (Cd)-Total	0.0000130		0.0000050	mg/L	25-JUL-17	25-JUL-17	R3782339
Calcium (Ca)-Total	33.5		0.050	mg/L	25-JUL-17	25-JUL-17	R3782339
Chromium (Cr)-Total	0.00023		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Cobalt (Co)-Total	0.00024		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Copper (Cu)-Total	0.00842		0.00050	mg/L	25-JUL-17	25-JUL-17	R3782339
Iron (Fe)-Total	0.474		0.010	mg/L	25-JUL-17	25-JUL-17	R3782339
Lead (Pb)-Total	0.000228		0.000050	mg/L	25-JUL-17	25-JUL-17	R3782339
Magnesium (Mg)-Total	7.69		0.0050	mg/L	25-JUL-17	25-JUL-17	R3782339
Manganese (Mn)-Total	0.0334		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Nickel (Ni)-Total	0.00139		0.00050	mg/L	25-JUL-17	25-JUL-17	R3782339

* 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
L1962532-1 REP-6 [09:00]							
Sampled By: KJ on 19-JUL-17 @ 09:00							
Matrix: WASTEWATER							
Total Metals in Water by CRC ICPMS							
Potassium (K)-Total	10.3		0.050	mg/L	25-JUL-17	25-JUL-17	R3782339
Sodium (Na)-Total	24.1		0.050	mg/L	25-JUL-17	25-JUL-17	R3782339
Zinc (Zn)-Total	0.0098		0.0030	mg/L	25-JUL-17	25-JUL-17	R3782339
Total Organic Carbon by Combustion							
Total Organic Carbon	3.61		0.50	mg/L		28-JUL-17	R3785176
Total Suspended Solids							
Total Suspended Solids	280		33	mg/L		24-JUL-17	R3781717
pH							
pH	10.12		0.10	pH units		22-JUL-17	R3781711
L1962532-2 REP-2 [09:45]							
Sampled By: KJ on 19-JUL-17 @ 09:45							
Matrix: WASTEWATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		27-JUL-17	R3783613
Toluene	<0.0010		0.0010	mg/L		27-JUL-17	R3783613
Ethyl benzene	<0.00050		0.00050	mg/L		27-JUL-17	R3783613
o-Xylene	<0.00050		0.00050	mg/L		27-JUL-17	R3783613
m+p-Xylenes	<0.00040		0.00040	mg/L		27-JUL-17	R3783613
F1 (C6-C10)	<0.10		0.10	mg/L		27-JUL-17	R3783613
Surrogate: 4-Bromofluorobenzene (SS)	113.8		70-130	%		27-JUL-17	R3783613
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	24-JUL-17	25-JUL-17	R3782553
F3 (C16-C34)	<0.25		0.25	mg/L	24-JUL-17	25-JUL-17	R3782553
F4 (C34-C50)	<0.25		0.25	mg/L	24-JUL-17	25-JUL-17	R3782553
Surrogate: 2-Bromobenzotrifluoride	98.3		60-140	%	24-JUL-17	25-JUL-17	R3782553
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		04-AUG-17	
F2-Naphth	<0.10		0.10	mg/L		04-AUG-17	
F3-PAH	<0.25		0.25	mg/L		04-AUG-17	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		04-AUG-17	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		27-JUL-17	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Acenaphthene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Acenaphthylene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Anthracene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Acridine	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Benzo(a)anthracene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	27-JUL-17	27-JUL-17	R3786696
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Chrysene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	27-JUL-17	27-JUL-17	R3786696
Fluoranthene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Fluorene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696

* 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
L1962532-2 REP-2 [09:45]							
Sampled By: KJ on 19-JUL-17 @ 09:45							
Matrix: WASTEWATER							
Polyaromatic Hydrocarbons (PAHs)							
Naphthalene	<0.000050		0.000050	mg/L	27-JUL-17	27-JUL-17	R3786696
Phenanthrene	<0.000050		0.000050	mg/L	27-JUL-17	27-JUL-17	R3786696
Pyrene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Quinoline	0.000032	EMPC	0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	27-JUL-17	27-JUL-17	R3786696
Surrogate: Acenaphthene d10	101.8		40-130	%	27-JUL-17	27-JUL-17	R3786696
Surrogate: Acridine d9	89.1		40-130	%	27-JUL-17	27-JUL-17	R3786696
Surrogate: Chrysene d12	102.8		40-130	%	27-JUL-17	27-JUL-17	R3786696
Surrogate: Naphthalene d8	84.2		40-130	%	27-JUL-17	27-JUL-17	R3786696
Surrogate: Phenanthrene d10	88.2		40-130	%	27-JUL-17	27-JUL-17	R3786696
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	205		1.2	mg/L		26-JUL-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		26-JUL-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		26-JUL-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	168		1.0	mg/L		22-JUL-17	R3781711
Ammonia by colour							
Ammonia, Total (as N)	0.302		0.010	mg/L		26-JUL-17	R3783260
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	5.3		2.0	mg/L		21-JUL-17	R3783413
Carbonaceous BOD							
BOD Carbonaceous	3.2		2.0	mg/L		21-JUL-17	R3783413
Chloride in Water by IC							
Chloride (Cl)	12.2		0.50	mg/L		21-JUL-17	R3781713
Conductivity							
Conductivity	324		1.0	umhos/cm		22-JUL-17	R3781711
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10	PEHR	10	MPN/100mL		21-JUL-17	R3780067
Hardness Calculated							
Hardness (as CaCO3)	164	HTC	0.20	mg/L		26-JUL-17	
Mercury Total							
Mercury (Hg)-Total	0.0000067		0.0000050	mg/L	24-JUL-17	27-JUL-17	R3784534
Nitrate in Water by IC							
Nitrate (as N)	0.069		0.020	mg/L		21-JUL-17	R3781713
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		25-JUL-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		21-JUL-17	R3781713
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		31-JUL-17	R3785820
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		26-JUL-17	R3782295
Phosphorus, Total							
Phosphorus (P)-Total	0.086		0.010	mg/L		25-JUL-17	R3781672
Sulfate in Water by IC							
Sulfate (SO4)	10.9		0.30	mg/L		21-JUL-17	R3781713
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0270		0.0030	mg/L	25-JUL-17	25-JUL-17	R3782339
Arsenic (As)-Total	0.00054		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339

* 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
L1962532-2 REP-2 [09:45]							
Sampled By: KJ on 19-JUL-17 @ 09:45							
Matrix: WASTEWATER							
Total Metals in Water by CRC ICPMS							
Cadmium (Cd)-Total	0.0000199		0.0000050	mg/L	25-JUL-17	25-JUL-17	R3782339
Calcium (Ca)-Total	52.1		0.050	mg/L	25-JUL-17	25-JUL-17	R3782339
Chromium (Cr)-Total	0.00046		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Cobalt (Co)-Total	0.00039		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Copper (Cu)-Total	0.00352		0.00050	mg/L	25-JUL-17	25-JUL-17	R3782339
Iron (Fe)-Total	0.334		0.010	mg/L	25-JUL-17	25-JUL-17	R3782339
Lead (Pb)-Total	0.000633		0.000050	mg/L	25-JUL-17	25-JUL-17	R3782339
Magnesium (Mg)-Total	8.33		0.0050	mg/L	25-JUL-17	25-JUL-17	R3782339
Manganese (Mn)-Total	0.155		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Nickel (Ni)-Total	0.00200		0.00050	mg/L	25-JUL-17	25-JUL-17	R3782339
Potassium (K)-Total	4.51		0.050	mg/L	25-JUL-17	25-JUL-17	R3782339
Sodium (Na)-Total	19.6		0.050	mg/L	25-JUL-17	25-JUL-17	R3782339
Zinc (Zn)-Total	0.0072		0.0030	mg/L	25-JUL-17	25-JUL-17	R3782339
Total Organic Carbon by Combustion							
Total Organic Carbon	3.57		0.50	mg/L		28-JUL-17	R3785176
Total Suspended Solids							
Total Suspended Solids	<10		10	mg/L		24-JUL-17	R3781717
pH							
pH	7.81		0.10	pH units		22-JUL-17	R3781711
L1962532-3 REP-2A [10:05]							
Sampled By: KJ on 19-JUL-17 @ 09:10							
Matrix: WASTEWATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		27-JUL-17	R3783613
Toluene	<0.0010		0.0010	mg/L		27-JUL-17	R3783613
Ethyl benzene	<0.00050		0.00050	mg/L		27-JUL-17	R3783613
o-Xylene	<0.00050		0.00050	mg/L		27-JUL-17	R3783613
m+p-Xylenes	<0.00040		0.00040	mg/L		27-JUL-17	R3783613
F1 (C6-C10)	<0.10		0.10	mg/L		27-JUL-17	R3783613
Surrogate: 4-Bromofluorobenzene (SS)	106.7		70-130	%		27-JUL-17	R3783613
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	24-JUL-17	25-JUL-17	R3782553
F3 (C16-C34)	<0.25		0.25	mg/L	24-JUL-17	25-JUL-17	R3782553
F4 (C34-C50)	<0.25		0.25	mg/L	24-JUL-17	25-JUL-17	R3782553
Surrogate: 2-Bromobenzotrifluoride	86.9		60-140	%	24-JUL-17	25-JUL-17	R3782553
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		04-AUG-17	
F2-Naphth	<0.10		0.10	mg/L		04-AUG-17	
F3-PAH	<0.25		0.25	mg/L		04-AUG-17	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		04-AUG-17	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		27-JUL-17	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Acenaphthene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Acenaphthylene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Anthracene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Acridine	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696

* 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
L1962532-3 REP-2A [10:05]							
Sampled By: KJ on 19-JUL-17 @ 09:10							
Matrix: WASTEWATER							
Polyaromatic Hydrocarbons (PAHs)							
Benzo(a)anthracene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	27-JUL-17	27-JUL-17	R3786696
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Chrysene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	27-JUL-17	27-JUL-17	R3786696
Fluoranthene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Fluorene	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Naphthalene	<0.000050		0.000050	mg/L	27-JUL-17	27-JUL-17	R3786696
Phenanthrene	<0.000050		0.000050	mg/L	27-JUL-17	27-JUL-17	R3786696
Pyrene	<0.000010		0.000010	mg/L	27-JUL-17	27-JUL-17	R3786696
Quinoline	<0.000020		0.000020	mg/L	27-JUL-17	27-JUL-17	R3786696
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	27-JUL-17	27-JUL-17	R3786696
Surrogate: Acenaphthene d10	121.3		40-130	%	27-JUL-17	27-JUL-17	R3786696
Surrogate: Acridine d9	108.3		40-130	%	27-JUL-17	27-JUL-17	R3786696
Surrogate: Chrysene d12	107.3		40-130	%	27-JUL-17	27-JUL-17	R3786696
Surrogate: Naphthalene d8	89.0		40-130	%	27-JUL-17	27-JUL-17	R3786696
Surrogate: Phenanthrene d10	108.5		40-130	%	27-JUL-17	27-JUL-17	R3786696
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	186		1.2	mg/L		26-JUL-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		26-JUL-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		26-JUL-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	153		1.0	mg/L		22-JUL-17	R3781711
Ammonia by colour							
Ammonia, Total (as N)	0.040		0.010	mg/L		26-JUL-17	R3783260
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		21-JUL-17	R3783413
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		21-JUL-17	R3783413
Chloride in Water by IC							
Chloride (Cl)	12.9		0.50	mg/L		21-JUL-17	R3781713
Conductivity							
Conductivity	302		1.0	umhos/cm		22-JUL-17	R3781711
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10	PEHR	10	MPN/100mL		21-JUL-17	R3780067
Hardness Calculated							
Hardness (as CaCO3)	145	HTC	0.20	mg/L		26-JUL-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	24-JUL-17	27-JUL-17	R3784534
Nitrate in Water by IC							
Nitrate (as N)	0.107		0.020	mg/L		21-JUL-17	R3781713
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.107		0.070	mg/L		25-JUL-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		21-JUL-17	R3781713
Oil & Grease - Gravimetric							

* 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
L1962532-3 REP-2A [10:05]							
Sampled By: KJ on 19-JUL-17 @ 09:10							
Matrix: WASTEWATER							
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		31-JUL-17	R3785820
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		26-JUL-17	R3782295
Phosphorus, Total							
Phosphorus (P)-Total	0.032		0.010	mg/L		25-JUL-17	R3781672
Sulfate in Water by IC							
Sulfate (SO4)	10.7		0.30	mg/L		21-JUL-17	R3781713
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0662		0.0030	mg/L	25-JUL-17	25-JUL-17	R3782339
Arsenic (As)-Total	0.00043		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Cadmium (Cd)-Total	0.0000070		0.0000050	mg/L	25-JUL-17	25-JUL-17	R3782339
Calcium (Ca)-Total	45.7		0.050	mg/L	25-JUL-17	25-JUL-17	R3782339
Chromium (Cr)-Total	0.00040		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Cobalt (Co)-Total	0.00025		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Copper (Cu)-Total	0.00169		0.00050	mg/L	25-JUL-17	25-JUL-17	R3782339
Iron (Fe)-Total	0.220		0.010	mg/L	25-JUL-17	25-JUL-17	R3782339
Lead (Pb)-Total	0.000168		0.000050	mg/L	25-JUL-17	25-JUL-17	R3782339
Magnesium (Mg)-Total	7.44		0.0050	mg/L	25-JUL-17	25-JUL-17	R3782339
Manganese (Mn)-Total	0.0539		0.00010	mg/L	25-JUL-17	25-JUL-17	R3782339
Nickel (Ni)-Total	0.00182		0.00050	mg/L	25-JUL-17	25-JUL-17	R3782339
Potassium (K)-Total	3.24		0.050	mg/L	25-JUL-17	25-JUL-17	R3782339
Sodium (Na)-Total	22.2		0.050	mg/L	25-JUL-17	25-JUL-17	R3782339
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	25-JUL-17	25-JUL-17	R3782339
Total Organic Carbon by Combustion							
Total Organic Carbon	9.05		0.50	mg/L		28-JUL-17	R3785176
Total Suspended Solids							
Total Suspended Solids	20.0		5.0	mg/L		24-JUL-17	R3781717
pH							
pH	7.99		0.10	pH units		22-JUL-17	R3781711

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
EMPC	Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.
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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

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.
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-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.

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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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
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:

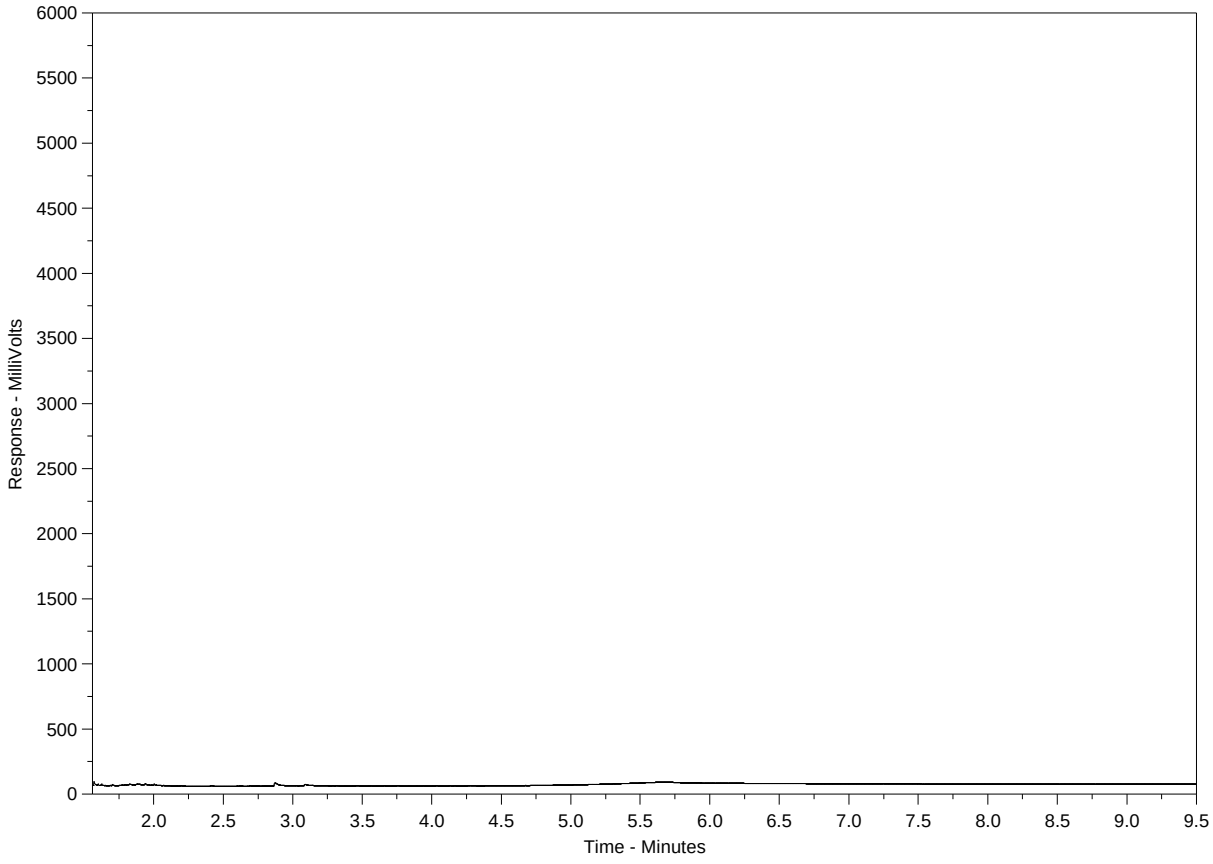
GLOSSARY OF REPORT TERMS

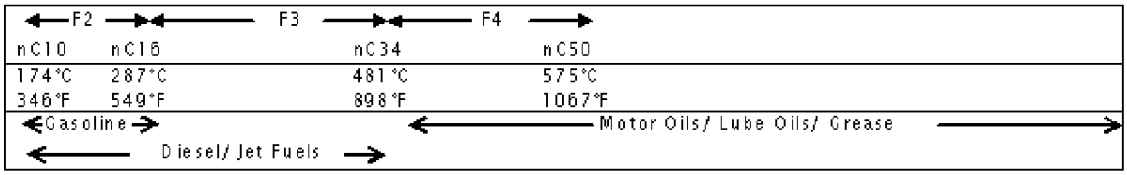
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates 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: L1962532-2
Client Sample ID: REP-2 [09:45]





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

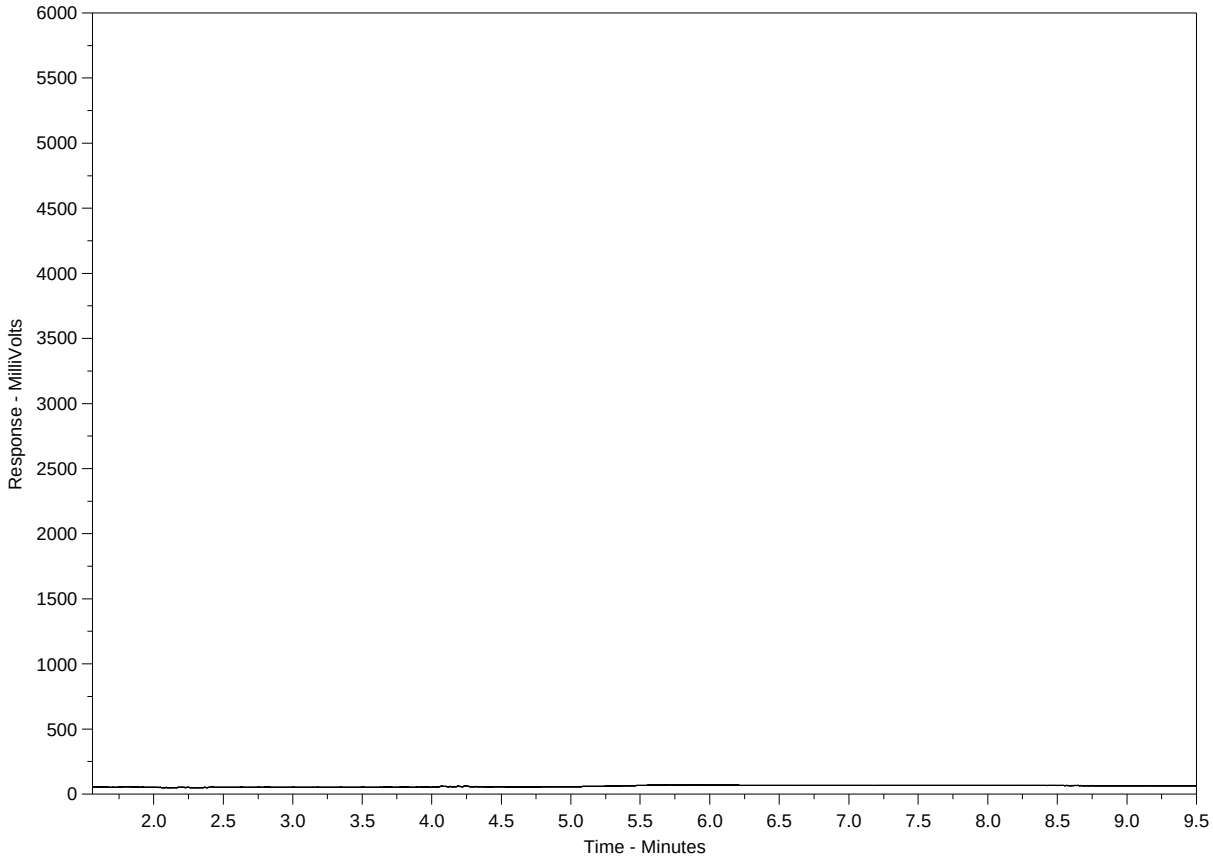
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

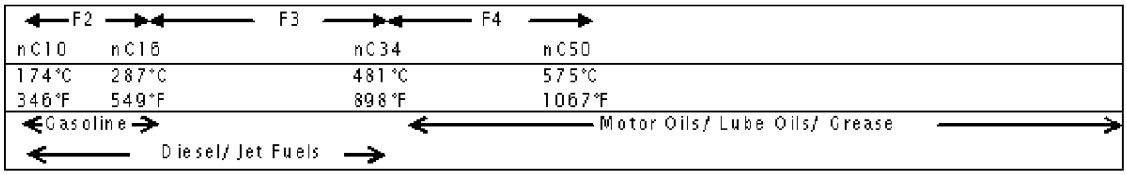
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L1962532-3
Client Sample ID: REP-2A [10:05]





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

L1962532-COFC

COC Number: 15 - 571781

Page 1 of 1

L1962532

Report To	Contact and company name below will appear on the final report
Company:	Hamlet of Naujaat
Contact:	Rob Hedley
Phone:	867-462-9952
	Company address below will appear on the final report
Street:	PO Box 10
City/Province:	Naujaat, NU
Postal Code:	X0C 0H0

Report Format / Distribution	
Select Report Format:	PDF EXCEL EDD (DIGITAL)
Quality Control (QC) Report with Report	YES NO
Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	EMAIL MAIL FAX
Email 1 or Fax	Saamaujaat@qiniq.com
Email 2	mlusty@gov.nu.ca
Email 3	cfaulkner@gov.nu.ca

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply	
Regular [R]	Standard TAT if received by 3 pm - business days - no surcharges apply
PRIORITY (Business Days) 4 day [P4]	EMERGENCY 1 Business day [E1]
3 day [P3]	Same Day, Weekend or Statutory holiday [E0]
2 day [P2]	
Date and Time Required for all E&P TATs:	dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.	

Invoice To	
	Same as Report To YES NO
	Copy of Invoice with Report YES NO
Company:	
Contact:	

Invoice Distribution	
Select Invoice Distribution:	EMAIL MAIL FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	WP0624
Job #:	Water Licence Monitoring
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 # (lab use only):

ALS Contact: Craig Riddell

Sampler: KJ

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	Routine	BOD	Bacteria	Metals	Nutrients	Phenols	Mercury	Oil + Grease x2	BTX, F1 x3	F2-F4 x2	PAH			Number of Containers
	REP-6	19-07-17	09:00 AM	Wastewater	✓	✓	P	P	P	P	P	P						9
	~~REP-5~~			Wastewater	~~✓~~	~~✓~~	~~P~~	~~P~~	~~P~~	~~P~~	~~P~~	~~P~~	~~P~~	~~P~~	~~P~~			~~15~~
	REP-2	19-07-17	9:45 AM	Wastewater	✓	✓	P	P	P	P	P	P	P	P	P			15
	REP-2a	19-07-17	10:05 AM	Wastewater	✓	✓	P	P	P	P	P	P	P	P	P			15
	No water at REP-5 July 19/17 @ 9:30 AM																	
	1 Cooler Shipped																	

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? YES NO	Nunavut-WW-GRP1-WP
Are samples for human drinking water use? YES NO	BTX, F1-F4, PAH

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen		SIF Observations	Yes	No	
Ice Packs	Ice Cubes	Custody seal intact	Yes	No	
Cooling Initiated					

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	12.7

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:
	19-07-17	10:15 AM	CM	21-7-17	10:00			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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.

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
2017154	2017-05-16	NU	KEE	Repulse Bay	Housing Unit 95	Heating Fuel P-50	38 L	ST<	GN
2017155	2017-05-11	NU	BAF	Repulse Bay	Housing Unit 99	Heating Fuel P-50	90 L	ST<	GN

Total Spills on this Report: 2

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

Naujaat
REP-2

			2014	2015			2016	2017		Statistics		
Parameter	**Unit**	**DL**	**20-Aug-14**	**25-Jun-15**	**29-Jul-15**	**25-Aug-15**	**09-Aug-16**	**29-Jun-17**	**19-Jul-17**	**Min**	**Max**	**Average**
Alkalinity												
Bicarbonate (HCO3)	mg/L	1.2	/	102	190	248	238	455	205	102	455	239.67
Carbonate (CO3)	mg/L	0.60	/	0.60	1.92	0.60	0.60	0.60	0.60	0.60	1.92	0.82
Hydroxide (OH)	mg/L	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	185	83.4	159	204	195	373	168	83.4	373	195.34
Ammonia by Colour												
Total (as N)	mg/L	0.20	0.010	0.010	0.014	0.010	0.011	18.3	0.302	0.01	18.3	2.67
Biochemical Oxygen Demand (BOD)												
Biochemical Oxygen Demand	mg/L	6.0	6.0	2.0	2.0	2.0	2.0	450	5.3	2.0	450	67.04
Carbonaceous BOD												
BOD Carbonaceous	mg/L	6.0	/	/	2.0	2.0	2.0	330	3.2	2.0	330	67.84
Chloride in Water by IC												
Chloride (Cl)	mg/L	10	/	10.0	13.9	25.6	31.3	32.1	12.2	10	32.1	20.85
Conductivity												
Conductivity	umhos/cm	1.0	565	213	352	447	487	1120	324	213	1120	501.14
Fecal Coliforms												
Fecal Coliforms	MPN/100mL	3	75	3	3	3	3	/	10	3	75	16.17
Hardness Calculated												
Hardness (as CaCO3)	mg/L	0.30	223	95.2	151	200	222	487	164	95.2	487	220.31
Mercury Total												
Mercury (Hg)	mg/L	0.00020	0.000020	0.000020	0.000020	0.000020	0.000020	0.0000470	0.0000067	0.0000067	0.000047	0.000022
Nitrate in Water by IC												
Nitrate (as N)	mg/L	0.40	/	0.277	0.050	0.297	0.020	0.040	0.069	0.02	0.297	0.13
Nitrate + Nitrite												
Nitrate and Nitrite as N	mg/L	0.45	0.161	0.277	0.070	0.297	0.070	0.070	0.070	0.07	0.297	0.15
Nitrite in Water by IC												
Nitrite (as N)	mg/L	0.20	/	0.010	0.010	0.010	0.010	0.020	0.010	0.010	0.020	0.012
Oil & Grease - Gravimetric												
Oil and Grease	mg/L	5.0	2.0	2.0	2.0	2.0	5.0	8.0	5.0	2.0	8.0	3.71
Phenol												
Phenols	mg/L	0.0010	0.0010	0.0016	0.0010	0.0013	0.0018	0.0598	0.0010	0.001	0.0598	0.010
Phosphorus, Total												
Phosphorus (P)	mg/L	0.010	/	0.013	0.011	0.010	0.012	3.50	0.086	0.01	3.5	0.61
Sulfate in Water by IC												
Sulfate (SO4)	mg/L	6.0	/	14.1	10.6	10.2	21.0	194	11	10.2	194	43.47
Total Metals by ICP-MS												
Aluminium (Al)	mg/L	0.0050	/	0.380	0.0182	0.0514	0.0176	0.773	0.0270	0.0176	0.773	0.21
Arsenic (As)	mg/L	0.00020	0.00023	0.00020	0.00020	0.00022	0.00022	0.00287	0.00054	0.0002	0.00287	0.00064
Cadmium (Cd)	mg/L	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000349	0.0000199	0.00001	0.000349	0.000060
Calcium (Ca)	mg/L	0.10	66.6	29.4	47.0	60.3	68.2	175	52.1	29.4	175	71.23
Chromium (Cr)	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0068	0.00046	0.00046	0.0068	0.0018
Cobalt (Co)	mg/L	0.00020	/	0.00020	0.00020	0.00020	0.00020	0.00415	0.00039	0.0002	0.00415	0.0009
Copper (Cu)	mg/L	0.00020	0.00151	0.00235	0.00076	0.00115	0.00126	0.0256	0.00352	0.00076	0.0256	0.005
Iron (Fe)	mg/L	0.010	0.10	0.38	0.10	0.11	0.051	3.93	0.334	0.051	3.93	0.72
Lead (Pb)	mg/L	0.000090	0.000090	0.000216	0.000090	0.000090	0.000090	0.00857	0.000633	0.00009	0.00857	0.0014
Magnesium (Mg)	mg/L	0.010	13.7	5.31	8.10	11.9	12.6	12.3	8.33	5.31	13.7	10.32
Manganese (Mn)	mg/L	0.00030	/	0.00875	0.0148	0.00640	0.00518	0.529	0.155	0.00518	0.529	0.12
Nickel (Ni)	mg/L	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0108	0.00200	0.002	0.0108	0.0033
Potassium (K)	mg/L	0.020	4.03	2.15	2.14	2.95	3.45	25.1	4.51	2.14	25.1	6.33
Sodium (Na)	mg/L	0.030	30.3	9.69	15.7	21.4	27.4	68.5	19.6	9.69	68.5	27.51
Zinc (Zn)	mg/L	0.0020	/	0.0020	0.0020	0.0020	0.0020	0.276	0.0072	0.002	0.276	0.049
Total Organic Carbon by Combustion												
Total Organic Carbon	mg/L	0.50	/	3.5	5.8	8.2	9.75	253	3.57	3.5	253	47.30
Total Suspended Solids												
Total Suspended Solids	mg/L	13	6.0	5.0	9.0	8.0	5.0	54	10	5.0	54	13.86
pH												
pH	pH Units	0.10	8.24	8.04	8.30	8.28	8.19	6.92	7.81	6.92	8.3	7.97
Benzene	mg/L	0.00050	/	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Toluene	mg/L	0.0010	/	0.0010	0.0010	0.0010	0.0010	0.0101	0.0010	0.001	0.0101	0.0025
Ethyl Benzene	mg/L	0.00050	/	0.00050	0.00050	0.00050	0.00050	0.00212	0.00050	0.0005	0.00212	0.00077
o-Xylene	mg/L	0.00050	/	0.00050	0.00050	0.00050	0.00050	0.00339	0.00050	0.0005	0.00339	0.00098
F1 (C6-C10)	mg/L	0.10	/	0.10	0.10	0.10	0.10	0.27	0.10	0.10	0.27	0.13
F2 (C10-C16)	mg/L	0.25	/	0.25	0.25	0.25	0.10	0.88	0.10	0.10	0.88	0.31
F3 (C16-C34)	mg/L	0.25	/	0.25	0.25	0.25	0.25	2.99	0.25	0.25	2.99	0.71
F4 (C34-C50)	mg/L	0.25	/	0.25	0.25	0.25	0.25	0.50	0.25	0.25	0.50	0.29
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	0.44	0.44	0.44	0.38	4.14	0.38	0.38	4.14	1.04

Naujaat
NAU-2A

			2015		2016	2017		Statistics		
Parameter	**Unit**	**DL**	**25-Aug-15**	**27-Aug-15**	**09-Aug-16**	**29-Jun-17**	**19-Jul-17**	**Min**	**Max**	**Average**
Alkalinity										
Bicarbonate (HCO3)	mg/L	1.2	767	208	200	42.5	186	42.5	767	280.70
Carbonate (CO3)	mg/L	0.60	0.60	3.00	0.60	0.60	0.60	0.60	3.00	1.08
Hydroxide (OH)	mg/L	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	629	175	164	34.8	153	34.8	629	231.16
Ammonia by Colour										
Total (as N)	mg/L	0.20	25.6	0.234	0.77	0.046	0.040	0.04	25.6	5.34
Biochemical Oxygen Demand (BOD)										
Biochemical Oxygen Demand	mg/L	6.0	263	2.0	2.0	2.0	2.0	2.0	263	54.20
Carbonaceous BOD										
BOD Carbonaceous	mg/L	6.0	258	2.0	2.0	2.0	2.0	2.0	258	53.20
Chloride in Water by IC										
Chloride (Cl)	mg/L	10	47.0	17.0	9.39	1.21	12.9	1.21	47	17.50
Conductivity										
Conductivity	umhos/cm	1.0	1250	388	345	64.1	302	64.1	1250	469.82
Fecal Coliforms										
Fecal Coliforms	MPN/100mL	3	240	9	43	/	10	9	240	75.50
Hardness Calculated										
Hardness (as CaCO3)	mg/L	0.30	411	160	167	31.2	145	31.2	411	182.84
Mercury Total										
Mercury (Hg)	mg/L	0.00020	0.00020	0.00020	0.000020	0.0000050	0.0000050	0.000005	0.0002	0.00009
Nitrate in Water by IC										
Nitrate (as N)	mg/L	0.40	0.040	0.066	0.193	0.020	0.107	0.02	0.193	0.09
Nitrate + Nitrite										
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.070	0.193	0.070	0.107	0.07	0.193	0.10
Nitrite in Water by IC										
Nitrite (as N)	mg/L	0.20	0.020	0.010	0.010	0.010	0.010	0.01	0.02	0.01
Oil & Grease - Gravimetric										
Oil and Grease	mg/L	5.0	2.0	2.0	5.0	5.0	5.0	2.0	5.0	3.80
Phenol										
Phenols	mg/L	0.0010	0.132	0.0019	0.0019	0.0010	0.0010	0.001	0.132	0.03
Phosphorus, Total										
Phosphorus (P)	mg/L	0.010	2.21	0.020	0.066	0.041	0.032	0.02	2.21	0.47
Sulfate in Water by IC										
Sulfate (SO4)	mg/L	6.0	26.3	6.75	10.5	1.29	10.7	1.29	26.3	11.11
Total Metals by ICP-MS										
Aluminium (Al)	mg/L	0.0050	0.121	0.0080	0.0422	0.0794	0.0662	0.008	0.121	0.063
Arsenic (As)	mg/L	0.00020	0.00347	0.00034	0.00034	0.00020	0.00043	0.0002	0.00347	0.0010
Cadmium (Cd)	mg/L	0.000010	0.000327	0.000010	0.000010	0.000010	0.0000070	0.000007	0.000327	0.00007
Calcium (Ca)	mg/L	0.10	142	47.5	52.8	9.87	45.7	9.87	142	59.57
Chromium (Cr)	mg/L	0.0010	0.0073	0.0010	0.0010	0.0010	0.00040	0.0004	0.0073	0.00
Cobalt (Co)	mg/L	0.00020	0.00562	0.00020	0.00020	0.00020	0.00025	0.0002	0.00562	0.0013
Copper (Cu)	mg/L	0.00020	0.0686	0.00114	0.00284	0.00057	0.00169	0.00057	0.0686	0.015
Iron (Fe)	mg/L	0.010	2.85	0.19	0.282	0.154	0.220	0.154	2.85	0.74
Lead (Pb)	mg/L	0.000090	0.0104	0.000118	0.000229	0.000116	0.000168	0.000116	0.0104	0.0022
Magnesium (Mg)	mg/L	0.010	13.6	10.1	8.48	1.60	7.44	1.6	13.6	8.24
Manganese (Mn)	mg/L	0.00030	0.923	0.0580	0.0872	0.0406	0.0539	0.0406	0.923	0.23
Nickel (Ni)	mg/L	0.0020	0.0116	0.0020	0.0020	0.0020	0.00182	0.00182	0.0116	0.0039
Potassium (K)	mg/L	0.020	31.5	4.32	4.06	0.652	3.24	0.652	31.5	8.75
Sodium (Na)	mg/L	0.030	98.2	18.9	13.0	1.21	22.2	1.21	98.2	30.70
Zinc (Zn)	mg/L	0.0020	0.312	0.0025	0.0044	0.0024	0.0030	0.0024	0.312	0.065
Total Organic Carbon by Combustion										
Total Organic Carbon	mg/L	0.50	266	11.3	10.4	1.83	9.05	1.83	266	59.72
Total Suspended Solids										
Total Suspended Solids	mg/L	13	54.0	5.0	9.0	5.0	20.0	5.0	54	18.60
pH										
pH	pH Units	0.10	7.79	8.45	8.14	7.28	7.99	7.28	8.45	7.93
Benzene	mg/L	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Toluene	mg/L	0.0010	0.0022	0.0010	0.0010	0.0010	0.0010	0.0010	0.0022	0.0012
Ethyl Benzene	mg/L	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
o-Xylene	mg/L	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
F1 (C6-C10)	mg/L	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
F2 (C10-C16)	mg/L	0.25	0.42	0.25	0.10	0.10	0.10	0.10	0.42	0.19
F3 (C16-C34)	mg/L	0.25	1.51	0.25	0.25	0.25	0.25	0.25	1.51	0.50
F4 (C34-C50)	mg/L	0.25	0.55	0.25	0.25	0.25	0.25	0.25	0.55	0.31
Total Hydrocarbons (C6-C50)	mg/L	0.44	2.48	0.44	0.38	0.38	0.38	0.38	2.48	0.81

Naujaat
REP-5

			2015	2016	2017		Statistics		
Parameter	**Unit**	**DL**	**25-Jun-15**	**09-Aug-16**	**29-Jun-17**	**19-Jul-17**	**Min**	**Max**	**Average**
Alkalinity									
Bicarbonate (HCO3)	mg/L	1.2	167	373	/	/	167	373	270
Carbonate (CO3)	mg/L	0.60	0.60	0.60	/	/	0.60	0.60	0.60
Hydroxide (OH)	mg/L	0.34	0.34	0.34	/	/	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	137	306	/	/	137	306	221.5
Ammonia by Colour									
Total (as N)	mg/L	0.20	0.026	0.075	/	/	0.026	0.075	0.0505
Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	mg/L	6.0	2.0	2.0	/	/	2.0	2.0	2.0
Carbonaceous BOD									
BOD Carbonaceous	mg/L	6.0	/	2.0	/	/	2.0	2.0	2.0
Chloride in Water by IC									
Chloride (Cl)	mg/L	10	8.97	33.5	/	/	8.97	33.5	21.235
Conductivity									
Conductivity	umhos/cm	1.0	305	866	/	/	305	866	585.5
Fecal Coliforms									
Fecal Coliforms	MPN/100mL	3	3	3	/	/	3	3	3
Hardness Calculated									
Hardness (as CaCO3)	mg/L	0.30	160	361	/	/	160	361	260.5
Mercury Total									
Mercury (Hg)	mg/L	0.00020	0.000020	0.000020	/	/	0.000020	0.000020	0.000020
Nitrate in Water by IC									
Nitrate (as N)	mg/L	0.40	0.020	0.057	/	/	0.020	0.057	0.0385
Nitrate + Nitrite									
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.070	/	/	0.070	0.070	0.070
Nitrite in Water by IC									
Nitrite (as N)	mg/L	0.20	0.010	0.020	/	/	0.010	0.020	0.015
Oil & Grease - Gravimetric									
Oil and Grease	mg/L	5.0	2.0	5.0	/	/	2.0	5.0	3.5
Phenol									
Phenols	mg/L	0.0010	0.0033	0.0034	/	/	0.0033	0.0034	0.00335
Phosphorus, Total									
Phosphorus (P)	mg/L	0.010	0.045	0.029	/	/	0.029	0.045	0.037
Sulfate in Water by IC									
Sulfate (SO4)	mg/L	6.0	19.8	130	/	/	19.8	130	74.9
Total Metals by ICP-MS									
Aluminium (Al)	mg/L	0.0050	0.348	0.0390	/	/	0.039	0.348	0.1935
Arsenic (As)	mg/L	0.00020	0.00036	0.00065	/	/	0.00036	0.00065	0.000505
Cadmium (Cd)	mg/L	0.000010	0.000010	0.000029	/	/	0.00001	0.000029	1.95E-05
Calcium (Ca)	mg/L	0.10	49.1	89.9	/	/	49.1	89.9	69.5
Chromium (Cr)	mg/L	0.0010	0.0010	0.0010	/	/	0.0010	0.0010	0.0010
Cobalt (Co)	mg/L	0.00020	0.00020	0.00021	/	/	0.0002	0.00021	0.000205
Copper (Cu)	mg/L	0.00020	0.00405	0.00203	/	/	0.00203	0.00405	0.00304
Iron (Fe)	mg/L	0.010	0.29	1.03	/	/	0.29	1.03	0.66
Lead (Pb)	mg/L	0.000090	0.000309	0.000163	/	/	0.000163	0.000309	0.000236
Magnesium (Mg)	mg/L	0.010	9.10	33.1	/	/	9.1	33.1	21.1
Manganese (Mn)	mg/L	0.00030	0.00525	0.0447	/	/	0.00525	0.0447	0.024975
Nickel (Ni)	mg/L	0.0020	0.0020	0.0020	/	/	0.002	0.002	0.002
Potassium (K)	mg/L	0.020	3.07	15.0	/	/	3.07	15	9.035
Sodium (Na)	mg/L	0.030	5.68	56.5	/	/	5.68	56.5	31.09
Zinc (Zn)	mg/L	0.0020	0.0020	0.0585	/	/	0.002	0.0585	0.03025
Total Organic Carbon by Combustion									
Total Organic Carbon	mg/L	0.50	12.6	17.6	/	/	12.6	17.6	15.1
Total Suspended Solids									
Total Suspended Solids	mg/L	13	5.0	5.0	/	/	5.0	5.0	5.0
pH									
pH	pH Units	0.10	8.12	8.23	/	/	8.12	8.23	8.175
Benzene	mg/L	0.00050	0.00050	0.00050	/	/	0.00050	0.00050	0.00050
Toluene	mg/L	0.0010	0.0010	0.0010	/	/	0.0010	0.0010	0.0010
Ethyl Benzene	mg/L	0.00050	0.00050	0.00050	/	/	0.00050	0.00050	0.00050
o-Xylene	mg/L	0.00050	0.00050	0.00050	/	/	0.00050	0.00050	0.00050
F1 (C6-C10)	mg/L	0.10	0.10	0.10	/	/	0.10	0.10	0.10
F2 (C10-C16)	mg/L	0.25	0.25	0.24	/	/	0.24	0.25	0.245
F3 (C16-C34)	mg/L	0.25	0.25	0.45	/	/	0.25	0.45	0.35
F4 (C34-C50)	mg/L	0.25	0.25	0.25	/	/	0.25	0.25	0.25
Total Hydrocarbons (C6-C50)	mg/L	0.44	0.44	0.68	/	/	0.44	0.68	0.56

Naujaat
REP-6

			2015			2016	2017		Statistics		
Parameter	**Unit**	**DL**	**25-Jun-15**	**29-Jul-15**	**25-Aug-15**	**09-Aug-16**	**29-Jun-17**	**19-Jul-17**	**Min**	**Max**	**Average**
Alkalinity											
Bicarbonate (HCO3)	mg/L	1.2	141	160	144	179	171	38.9	38.9	179	138.98
Carbonate (CO3)	mg/L	0.60	0.60	0.60	22.3	6.00	0.60	51.5	0.60	51.5	13.60
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	116	131	155	157	141	118	116	157	136.33
Ammonia by Colour											
Total (as N)	mg/L	0.20	10.7	2.95	0.038	4.81	15.9	1.25	0.038	15.9	5.94
Biochemical Oxygen Demand (BOD)											
Biochemical Oxygen Demand	mg/L	6.0	12.7	20	26.2	16.1	17.3	44	12.7	44	22.72
Carbonaceous BOD											
BOD Carbonaceous	mg/L	6.0	/	10.5	18.2	13.0	19.1	25.6	10.5	25.6	17.28
Chloride in Water by IC											
Chloride (Cl)	mg/L	10	16.6	21.3	31.1	18.9	18.9	26.2	16.6	31.1	22.17
Conductivity											
Conductivity	umhos/cm	1.0	298	350	392	375	342	274	274	392	338.50
Fecal Coliforms											
Fecal Coliforms	MPN/100mL	3	9300	3	3	240	411	10	3	9300	1661.17
Hardness Calculated											
Hardness (as CaCO3)	mg/L	0.30	71.7	108	145	151	72.8	115	71.7	151	110.58
Mercury Total											
Mercury (Hg)	mg/L	0.00020	0.00020	0.00020	0.00020	0.000020	0.0000050	0.0000050	0.000005	0.0002	0.00011
Nitrate in Water by IC											
Nitrate (as N)	mg/L	0.40	0.038	0.680	0.031	0.535	0.155	0.434	0.031	0.68	0.31
Nitrate + Nitrite											
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.860	0.097	0.678	0.155	0.603	0.07	0.86	0.41
Nitrite in Water by IC											
Nitrite (as N)	mg/L	0.20	0.010	0.179	0.066	0.143	<0.040	0.168	0.010	0.179	0.11
Oil & Grease - Gravimetric											
Oil and Grease	mg/L	5.0	2.0	2.0	2.0	5.0	5.0	11.2	2.0	11.2	4.53
Phenol											
Phenols	mg/L	0.0010	0.0067	0.0010	0.0034	0.0019	0.0013	0.0013	0.001	0.0067	0.0026
Phosphorus, Total											
Phosphorus (P)	mg/L	0.010	1.96	1.86	1.32	1.28	1.98	2.82	1.28	2.82	1.87
Sulfate in Water by IC											
Sulfate (SO4)	mg/L	6.0	7.07	11.0	14.4	17.8	5.27	9.76	5.27	17.8	10.88
Total Metals by ICP-MS											
Aluminium (Al)	mg/L	0.0050	0.0282	0.0344	0.0392	0.0370	0.0240	0.0783	0.024	0.0783	0.04
Arsenic (As)	mg/L	0.00020	0.00026	0.00030	0.00044	0.00027	0.00028	0.00049	0.00026	0.00049	0.0003
Cadmium (Cd)	mg/L	0.000010	0.000012	0.00010	0.000010	0.000010	0.000010	0.0000130	0.00001	0.0001	0.00003
Calcium (Ca)	mg/L	0.10	21.0	32.9	42.7	46.8	21.7	33.5	21	46.8	33.10
Chromium (Cr)	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.00023	0.00023	0.001	0.0009
Cobalt (Co)	mg/L	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00024	0.0002	0.00024	0.0002
Copper (Cu)	mg/L	0.00020	0.0111	0.00436	0.00332	0.00513	0.0107	0.00842	0.00332	0.0111	0.007
Iron (Fe)	mg/L	0.010	0.39	0.42	0.21	0.282	0.443	0.474	0.21	0.474	0.37
Lead (Pb)	mg/L	0.000090	0.000215	0.000103	0.000090	0.000130	0.000178	0.000228	0.00009	0.000228	0.0002
Magnesium (Mg)	mg/L	0.010	4.68	6.27	9.24	8.22	4.52	7.69	4.52	9.24	6.77
Manganese (Mn)	mg/L	0.00030	0.0296	0.0309	0.0274	0.0296	0.0299	0.0334	0.0274	0.0334	0.030
Nickel (Ni)	mg/L	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.00139	0.00139	0.0020	0.0019
Potassium (K)	mg/L	0.020	5.75	5.68	9.13	4.22	7.75	10.3	4.22	10.3	7.14
Sodium (Na)	mg/L	0.030	15.2	18.8	29.8	19.4	17.3	24.1	15.2	29.8	20.77
Zinc (Zn)	mg/L	0.0020	0.0130	0.0095	0.0039	0.0096	0.0086	0.0098	0.0039	0.013	0.009
Total Organic Carbon by Combustion											
Total Organic Carbon	mg/L	0.50	12.6	35.5	27,9	20.5	14.5	3.61	3.61	35.5	17.34
Total Suspended Solids											
Total Suspended Solids	mg/L	13	5.0	35.0	42.0	19.0	16	280	5.0	280	66.17
pH											
pH	pH Units	0.10	8.12	7.96	9.14	8.56	7.75	10.12	7.75	10.12	8.61
Benzene	mg/L	0.00050	0.00050	0.00050	0.00050	/	/	/	0.00050	0.00050	0.00050
Toluene	mg/L	0.0010	0.0010	0.0010	0.0010	/	/	/	0.0010	0.0010	0.0010
Ethyl Benzene	mg/L	0.00050	0.00050	0.00050	0.00050	/	/	/	0.00050	0.00050	0.00050
o-Xylene	mg/L	0.00050	0.00050	0.00050	0.00050	/	/	/	0.00050	0.00050	0.00050
F1 (C6-C10)	mg/L	0.10	0.10	0.10	0.10	/	/	/	0.10	0.10	0.100
F2 (C10-C16)	mg/L	0.25	0.25	0.25	0.25	/	/	/	0.25	0.25	0.25
F3 (C16-C34)	mg/L	0.25	0.75	0.35	0.44	/	/	/	0.35	0.75	0.51
F4 (C34-C50)	mg/L	0.25	0.26	0.25	0.25	/	/	/	0.25	0.26	0.25
Total Hydrocarbons (C6-C50)	mg/L	0.44	1.01	0.44	0.44	/	/	/	0.44	1.01	0.63

Indigenous and Northern Affairs Canada | Affaires autochtones et du Nord Canada

WATER LICENCE INSPECTION FORM

☒ **Original**
☐ **Follow-Up Report**

Licensee	**Licensee Representative**
Hamlet of Naujaat	Rob Headley
Licence No. / Expiry	**Representative's Title**
3BM-REP1520	Senior Administrative Officer
Land / Other Authorizations	**Land / Other Authorizations**
	--
Date of Inspection	**Inspector**
July 18th 2017	Atuat Shouldice

Activities Inspected

☐ Camp ☐ Drilling ☐ Mining ☐ Construction ☐ Reclamation ☐ Fuel Storage
☐ Roads/Hauling ☒ Other: Municipal ☒ Other: Hazardous waste storage

SECTION 1 ☒ **Comments (s.1)** ☐ Non-Compliance with Act or Licence (s.__) ☐ Action Required (s.__)

Summary

On July 18th, 2017 Indigenous and Northern Affairs Canada's Water Resource Officer, Atuat Shouldice completed an annual Community inspection of the hamlet of Rankin Inlet permit 3BM-REP1520.

Observations

SECTION 2 ☒ Comments (s.__) ☐ **Non-Compliance with Act or Licence (s.2)** ☐ Action Required (s.__)

The Hamlet of Naujaat has done a lot of work segregating hazardous waste and different material from the landfill.

Discarded Batteries are put in lined boxes and stored in a seacan so not to leach in to the environment.

With limited space in the fenced area of the landfill, the hamlet was looking at storing waste metal at the old landfill site.

SECTION 3 ☐ Comments (s.__) ☐ Non-Compliance with Act or Licence, (s.__) ☒ **Action Required (s.3)**

The Hamlet of Naujaat has been following the yearly goals of the water licence working compliance group.

The hamlet suggested and inspector believes it would be a good idea to place bulk items, at the old landfill as a bulk/metal waste storage sit to extend the life of the new landfill.

Licensee or Representative	**Inspector's Name**
	WRO Atuat Shouldice
Signature	**Signature**
	Original signed on file
Date	**Date**
	5/28/2018

Office Use Only: Follow-up report to be issued by Inspector ☒ Yes ☐ No

cc. Erik Allain, Manager Field Operations, INAC

Canada