

ANNUAL REPORT FOR THE HAMLET OF NAUJAAT

YEAR BEING REPORTED: 2019

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 Naujaat**.

- 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	3,550.251	Same
February	3,120.667	Same
March	3,258.131	Same
April	3,355.020	Same
May	3,522.495	Same
June	3,275.246	Same
July	3,562.352	Same
August	3,611.753	Same
September	3,578.867	Same
October	3,622.713	Same
November	3,448.573	Same
December	3,466.870	Same
ANNUAL TOTAL	41,372.944	

Note: No meter exists to measure the sewage discharge volume, therefore water

ANNUAL REPORT FOR THE HAMLET OF NAUJAAT

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;

-
- Updates on the relocation of the metals waste site has been discussed with CIRNAC and is currently awaiting the go ahead to move the site. No update has been received to date.
 - The solid waste site has reached capacity. Segregation of hazardous wastes has occurred. The hamlet is working on locating a secondary site for a new Solid Waste Storage facility.

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

Spill	Occurrence Date	Location Description	Product Spilled	Quantity	Measurement
spill-2019412	02-Oct-19	Unit 71	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	46	Litres
spill-2019311	03-Aug-19	Unit 180	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	207	Litres
spill-2019243	17-Jun-19	Nunavut Arctic Collage	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20	Litres
		Unit 71 in			
spill-2019187	06-May-19	Naujaat lot 187	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	225	Litres
spill-2019185	25-Apr-19	ILA Centre	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	150	Litres

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

-
- CIRNAC has stated that compliance point REP-5 no longer needs to be monitored as there is never any wastewater or spillage at/around this site. They will work on getting this point removed from the monitoring stations list under water license 3BM-REP1520.
 - GN has engaged EXP Services Ltd. to complete the design of the upgraded Wastewater

ANNUAL REPORT FOR THE HAMLET OF NAUJAAT

Lagoon site

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

- none

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

- none

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

- None

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

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

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

-
- The 3BM-REP1520 CIRNAC Inspection took place on August 1st, 2019. A copy of the inspection report has not been received to date.

Appendix A: REP-6 Effluent Quality Limits – 1 page

Appendix B: Weekly Inspections at Monitoring Program Stations – 1 page

Appendix C: Certificate of Analysis August 1, 2019 – 13 pages

Appendix D: Hazardous Materials Spill Database, Naujaat 2019 – 1 page

Appendix E: Naujaat 2019 Sampling Results Summary – 3 pages

Appendix F: CIRNAC Inspection Report – 2 pages

**ANNUAL REPORT
FOR THE HAMLET OF NAUJAAT**

Appendix A

2019 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
		01-Aug-19
BOD ₅	80 mg/L	15.2
Total Suspended Solids	70 mg/L	104
Fecal Coliforms	1 x 10 ⁶ CFU/100 mL (1 x 10 ⁶ CFU/dl)	<10
Oil & Grease	No visible sheen	121.0
pH	between 6 and 9	8.74

**ANNUAL REPORT
FOR THE HAMLET OF NAUJAAT**

Appendix B

**ANNUAL REPORT
FOR THE HAMLET OF NAUJAAT**

No Weekly Inspections at Monitoring Program Stations Document was received by CGS.

**ANNUAL REPORT
FOR THE HAMLET OF NAUJAAT**

Appendix C



Hamlet of Naujaat (Repulse Bay)
ATTN: KEVIN TEGUMIAR
PO Box 10
Naujaat NU XOC OHO

Date Received: 07-AUG-19
Report Date: 20-AUG-19 12:21 (MT)
Version: FINAL

Client Phone: 867-462-9952

Certificate of Analysis

Lab Work Order #: L2324061
Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers:
Legal Site Desc:



Hua Wo
Chemistry Laboratory Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2324061-1 REP - 2							
Sampled By: CLIENT on 01-AUG-19 @ 14:21							
Matrix: WW							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		09-AUG-19	R4756835
Toluene	0.0043		0.0010	mg/L		09-AUG-19	R4756835
Ethyl benzene	0.00081		0.00050	mg/L		09-AUG-19	R4756835
o-Xylene	0.00080		0.00050	mg/L		09-AUG-19	R4756835
m+p-Xylenes	0.00119		0.00040	mg/L		09-AUG-19	R4756835
F1 (C6-C10)	0.36		0.10	mg/L		09-AUG-19	R4756835
Surrogate: 4-Bromofluorobenzene (SS)	102.0		70-130	%		09-AUG-19	R4756835
CCME PHC F2-F4 in Water							
F2 (C10-C16)	1.17		0.10	mg/L	14-AUG-19	14-AUG-19	R4757751
F3 (C16-C34)	1.49		0.25	mg/L	14-AUG-19	14-AUG-19	R4757751
F4 (C34-C50)	<0.25		0.25	mg/L	14-AUG-19	14-AUG-19	R4757751
Surrogate: 2-Bromobenzotrifluoride	96.7		60-140	%	14-AUG-19	14-AUG-19	R4757751
CCME Total Hydrocarbons							
F1-BTEX	0.35		0.10	mg/L		20-AUG-19	
F2-Naphth	1.17		0.10	mg/L		20-AUG-19	
F3-PAH	1.49		0.25	mg/L		20-AUG-19	
Total Hydrocarbons (C6-C50)	3.02		0.38	mg/L		20-AUG-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.00198		0.00064	mg/L		15-AUG-19	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.000112		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
2-Methyl Naphthalene	0.000127		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
Acenaphthene	<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
Acenaphthylene	<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
Anthracene	<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
Acridine	<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
Benzo(a)anthracene	<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	08-AUG-19	16-AUG-19	R4757673
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
Chrysene	<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	08-AUG-19	16-AUG-19	R4757673
Fluoranthene	<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
Fluorene	0.000120	EMPC	0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
Naphthalene	0.000269		0.000050	mg/L	08-AUG-19	16-AUG-19	R4757673
Phenanthrene	<0.000050		0.000050	mg/L	08-AUG-19	16-AUG-19	R4757673
Pyrene	<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
Quinoline	<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	08-AUG-19	16-AUG-19	R4757673
Surrogate: Acenaphthene d10	105.6		60-130	%	08-AUG-19	16-AUG-19	R4757673
Surrogate: Acridine d9	76.8		60-130	%	08-AUG-19	16-AUG-19	R4757673
Surrogate: Chrysene d12	118.5		60-130	%	08-AUG-19	16-AUG-19	R4757673
Surrogate: Naphthalene d8	143.9	SOL:MI	50-130	%	08-AUG-19	16-AUG-19	R4757673
Surrogate: Phenanthrene d10	83.6		60-130	%	08-AUG-19	16-AUG-19	R4757673
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	994		1.2	mg/L		09-AUG-19	
Alkalinity, Carbonate							

* 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
L2324061-1 REP - 2							
Sampled By: CLIENT on 01-AUG-19 @ 14:21							
Matrix: WW							
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		09-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		09-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	815		1.0	mg/L		08-AUG-19	R4744874
Ammonia by colour							
Ammonia, Total (as N)	57.1		2.0	mg/L		12-AUG-19	R4751433
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	750		300	mg/L		08-AUG-19	R4753016
Carbonaceous BOD							
BOD Carbonaceous	700		300	mg/L		08-AUG-19	R4753016
Chloride in Water by IC							
Chloride (Cl)	69.1		5.0	mg/L		08-AUG-19	R4746733
Conductivity							
Conductivity	1870		1.0	umhos/cm		08-AUG-19	R4744874
Hardness Calculated							
Hardness (as CaCO3)	561	HTC	0.20	mg/L		16-AUG-19	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	08-AUG-19	09-AUG-19	R4746685
Nitrate in Water by IC							
Nitrate (as N)	<0.20	DLM	0.20	mg/L		08-AUG-19	R4746733
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.22		0.22	mg/L		13-AUG-19	
Nitrite in Water by IC							
Nitrite (as N)	<0.10	DLM	0.10	mg/L		08-AUG-19	R4746733
Oil & Grease - Gravimetric							
Oil and Grease	6.8		5.0	mg/L		12-AUG-19	R4747276
Phenol (4AAP)							
Phenols (4AAP)	0.236	DLM	0.010	mg/L		09-AUG-19	R4746535
Phosphorus, Total							
Phosphorus (P)-Total	3.59		0.030	mg/L		09-AUG-19	R4745230
Sulfate in Water by IC							
Sulfate (SO4)	19.2		3.0	mg/L		08-AUG-19	R4746733
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.183		0.0030	mg/L	15-AUG-19	15-AUG-19	R4757095
Arsenic (As)-Total	0.00367		0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Cadmium (Cd)-Total	0.000307		0.0000050	mg/L	15-AUG-19	15-AUG-19	R4757095
Calcium (Ca)-Total	191		0.050	mg/L	15-AUG-19	15-AUG-19	R4757095
Chromium (Cr)-Total	0.0109		0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Cobalt (Co)-Total	0.00149		0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Copper (Cu)-Total	0.0230		0.00050	mg/L	15-AUG-19	15-AUG-19	R4757095
Iron (Fe)-Total	3.93		0.010	mg/L	15-AUG-19	15-AUG-19	R4757095
Lead (Pb)-Total	0.00877		0.000050	mg/L	15-AUG-19	15-AUG-19	R4757095
Magnesium (Mg)-Total	20.7		0.0050	mg/L	15-AUG-19	15-AUG-19	R4757095
Manganese (Mn)-Total	0.793		0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Nickel (Ni)-Total	0.00990		0.00050	mg/L	15-AUG-19	15-AUG-19	R4757095
Potassium (K)-Total	39.8		0.050	mg/L	15-AUG-19	15-AUG-19	R4757095
Sodium (Na)-Total	129		0.050	mg/L	15-AUG-19	15-AUG-19	R4757095
Zinc (Zn)-Total	0.288		0.0030	mg/L	15-AUG-19	15-AUG-19	R4757095
Total Organic Carbon by Combustion							
Total Organic Carbon	490		10	mg/L		16-AUG-19	R4758901
Total Suspended Solids							

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

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2324061-1 REP - 2 Sampled By: CLIENT on 01-AUG-19 @ 14:21 Matrix: WW Total Suspended Solids Total Suspended Solids pH pH								
		96.8		6.0	mg/L		08-AUG-19	R4745148
		7.64		0.10	pH units		08-AUG-19	R4744874
L2324061-2 REP - 2A Sampled By: CLIENT on 01-AUG-19 @ 14:21 Matrix: WW BTEX plus F1-F4 BTX plus F1 by GCMS Benzene Toluene Ethyl benzene o-Xylene m+p-Xylenes F1 (C6-C10) Surrogate: 4-Bromofluorobenzene (SS) CCME PHC F2-F4 in Water F2 (C10-C16) F3 (C16-C34) F4 (C34-C50) Surrogate: 2-Bromobenzotrifluoride CCME Total Hydrocarbons F1-BTEX F2-Naphth F3-PAH Total Hydrocarbons (C6-C50) Sum of Xylene Isomer Concentrations Xylenes (Total) Polyaromatic Hydrocarbons (PAHs) 1-Methyl Naphthalene 2-Methyl Naphthalene Acenaphthene Acenaphthylene Anthracene Acridine Benzo(a)anthracene Benzo(a)pyrene Benzo(b&j)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene Quinoline B(a)P Total Potency Equivalent Surrogate: Acenaphthene d10								
		<0.00050		0.00050	mg/L		09-AUG-19	R4756835
		<0.0010		0.0010	mg/L		09-AUG-19	R4756835
		<0.00050		0.00050	mg/L		09-AUG-19	R4756835
		<0.00050		0.00050	mg/L		09-AUG-19	R4756835
		<0.00040		0.00040	mg/L		09-AUG-19	R4756835
		<0.10		0.10	mg/L		09-AUG-19	R4756835
		93.0		70-130	%		09-AUG-19	R4756835
		<0.10		0.10	mg/L	14-AUG-19	14-AUG-19	R4757751
		<0.25		0.25	mg/L	14-AUG-19	14-AUG-19	R4757751
		<0.25		0.25	mg/L	14-AUG-19	14-AUG-19	R4757751
		97.7		60-140	%	14-AUG-19	14-AUG-19	R4757751
		<0.10		0.10	mg/L		20-AUG-19	
		<0.10		0.10	mg/L		20-AUG-19	
		<0.25		0.25	mg/L		20-AUG-19	
		<0.38		0.38	mg/L		20-AUG-19	
		<0.00064		0.00064	mg/L		15-AUG-19	
		<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.0000050		0.0000050	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.0000050		0.0000050	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000050		0.000050	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000050		0.000050	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000010		0.000010	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000020		0.000020	mg/L	08-AUG-19	16-AUG-19	R4757673
		<0.000030		0.000030	mg/L	08-AUG-19	16-AUG-19	R4757673
		75.4		60-130	%	08-AUG-19	16-AUG-19	R4757673

* 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
L2324061-2 REP - 2A							
Sampled By: CLIENT on 01-AUG-19 @ 14:21							
Matrix: WW							
Polyaromatic Hydrocarbons (PAHs)							
Surrogate: Acridine d9	67.0		60-130	%	08-AUG-19	16-AUG-19	R4757673
Surrogate: Chrysene d12	77.3		60-130	%	08-AUG-19	16-AUG-19	R4757673
Surrogate: Naphthalene d8	73.2		50-130	%	08-AUG-19	16-AUG-19	R4757673
Surrogate: Phenanthrene d10	75.5		60-130	%	08-AUG-19	16-AUG-19	R4757673
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	271		1.2	mg/L		09-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		09-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		09-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	222		1.0	mg/L		08-AUG-19	R4744874
Ammonia by colour							
Ammonia, Total (as N)	0.69		0.10	mg/L		12-AUG-19	R4751433
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	3.6		2.0	mg/L		08-AUG-19	R4753016
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		08-AUG-19	R4753016
Chloride in Water by IC							
Chloride (Cl)	23.1		0.50	mg/L		09-AUG-19	R4750115
Conductivity							
Conductivity	479		1.0	umhos/cm		08-AUG-19	R4744874
Hardness Calculated							
Hardness (as CaCO3)	174	HTC	0.20	mg/L		16-AUG-19	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	08-AUG-19	09-AUG-19	R4746685
Nitrate in Water by IC							
Nitrate (as N)	0.047		0.020	mg/L		09-AUG-19	R4750115
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		13-AUG-19	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		09-AUG-19	R4750115
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		12-AUG-19	R4747276
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		09-AUG-19	R4746535
Phosphorus, Total							
Phosphorus (P)-Total	0.113		0.0030	mg/L		09-AUG-19	R4745230
Sulfate in Water by IC							
Sulfate (SO4)	5.04		0.30	mg/L		09-AUG-19	R4750115
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0216		0.0030	mg/L	15-AUG-19	15-AUG-19	R4757095
Arsenic (As)-Total	0.00098		0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Cadmium (Cd)-Total	0.0000093		0.0000050	mg/L	15-AUG-19	15-AUG-19	R4757095
Calcium (Ca)-Total	49.7		0.050	mg/L	15-AUG-19	15-AUG-19	R4757095
Chromium (Cr)-Total	0.00081		0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Cobalt (Co)-Total	0.00031		0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Copper (Cu)-Total	0.00239		0.00050	mg/L	15-AUG-19	15-AUG-19	R4757095
Iron (Fe)-Total	0.757		0.010	mg/L	15-AUG-19	15-AUG-19	R4757095
Lead (Pb)-Total	0.000874		0.000050	mg/L	15-AUG-19	15-AUG-19	R4757095
Magnesium (Mg)-Total	12.1		0.0050	mg/L	15-AUG-19	15-AUG-19	R4757095

* 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
L2324061-2 REP - 2A Sampled By: CLIENT on 01-AUG-19 @ 14:21 Matrix: WW Total Metals in Water by CRC ICPMS Manganese (Mn)-Total Nickel (Ni)-Total Potassium (K)-Total Sodium (Na)-Total Zinc (Zn)-Total Total Organic Carbon by Combustion Total Organic Carbon Total Suspended Solids Total Suspended Solids pH pH	0.246 0.00237 6.39 33.6 0.0053 20.5 7.1 8.06		0.00010 0.00050 0.050 0.050 0.0030 0.50 2.0 0.10	mg/L mg/L mg/L mg/L mg/L mg/L mg/L pH units	15-AUG-19 15-AUG-19 15-AUG-19 15-AUG-19 15-AUG-19	15-AUG-19 15-AUG-19 15-AUG-19 15-AUG-19 15-AUG-19 15-AUG-19 08-AUG-19 08-AUG-19	R4757095 R4757095 R4757095 R4757095 R4757095 R4757724 R4745148 R4744874
L2324061-3 REP - 6 Sampled By: CLIENT on 01-AUG-19 @ 14:21 Matrix: WW Nunavut WW Group 1 Alkalinity, Bicarbonate Bicarbonate (HCO3) Alkalinity, Carbonate Carbonate (CO3) Alkalinity, Hydroxide Hydroxide (OH) Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3) Ammonia by colour Ammonia, Total (as N) Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand Carbonaceous BOD BOD Carbonaceous Chloride in Water by IC Chloride (Cl) Conductivity Conductivity Hardness Calculated Hardness (as CaCO3) Mercury Total Mercury (Hg)-Total Nitrate in Water by IC Nitrate (as N) Nitrate+Nitrite Nitrate and Nitrite as N Nitrite in Water by IC Nitrite (as N) Oil & Grease - Gravimetric Oil and Grease Phenol (4AAP) Phenols (4AAP) Phosphorus, Total Phosphorus (P)-Total Sulfate in Water by IC Sulfate (SO4)	169 11.6 <0.34 158 2.89 37 15.2 37.2 437 121 <0.0000050 <0.020 <0.070 <0.010 <5.0 <0.0010 3.04 13.8		1.2 0.60 0.34 1.0 0.20 20 6.0 0.50 1.0 0.20 0.0000050 0.020 0.070 0.010 5.0 0.0010 0.030 0.30	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L umhos/cm mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19 08-AUG-19	09-AUG-19 09-AUG-19 09-AUG-19 08-AUG-19 12-AUG-19 08-AUG-19 08-AUG-19 09-AUG-19 08-AUG-19 16-AUG-19 09-AUG-19 09-AUG-19 13-AUG-19 09-AUG-19 12-AUG-19 09-AUG-19 09-AUG-19 09-AUG-19 09-AUG-19	R4744874 R4751433 R4753016 R4753016 R4750115 R4744874 R4746685 R4750115 R4750115 R4750115 R4747276 R4746535 R4745230 R4750115

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

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2324061-3	REP - 6							
Sampled By:	CLIENT on 01-AUG-19 @ 14:21							
Matrix:	WW							
Total Metals in Water by CRC ICPMS								
Aluminum (Al)-Total	0.0357			0.0030	mg/L	15-AUG-19	15-AUG-19	R4757095
Arsenic (As)-Total	0.00065			0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Cadmium (Cd)-Total	0.0000110			0.0000050	mg/L	15-AUG-19	15-AUG-19	R4757095
Calcium (Ca)-Total	34.0			0.050	mg/L	15-AUG-19	15-AUG-19	R4757095
Chromium (Cr)-Total	0.00020			0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Cobalt (Co)-Total	0.00027			0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Copper (Cu)-Total	0.00650			0.00050	mg/L	15-AUG-19	15-AUG-19	R4757095
Iron (Fe)-Total	0.184			0.010	mg/L	15-AUG-19	15-AUG-19	R4757095
Lead (Pb)-Total	0.000137			0.000050	mg/L	15-AUG-19	15-AUG-19	R4757095
Magnesium (Mg)-Total	8.65			0.0050	mg/L	15-AUG-19	15-AUG-19	R4757095
Manganese (Mn)-Total	0.0243			0.00010	mg/L	15-AUG-19	15-AUG-19	R4757095
Nickel (Ni)-Total	0.00164			0.00050	mg/L	15-AUG-19	15-AUG-19	R4757095
Potassium (K)-Total	13.5			0.050	mg/L	15-AUG-19	15-AUG-19	R4757095
Sodium (Na)-Total	34.7			0.050	mg/L	15-AUG-19	15-AUG-19	R4757095
Zinc (Zn)-Total	0.0124			0.0030	mg/L	15-AUG-19	15-AUG-19	R4757095
Total Organic Carbon by Combustion								
Total Organic Carbon	72.4			5.0	mg/L		16-AUG-19	R4758901
Total Suspended Solids								
Total Suspended Solids	104			6.0	mg/L		08-AUG-19	R4745148
pH								
pH	8.74			0.10	pH units		08-AUG-19	R4744874

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
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.
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 CO ₃ 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 HCO ₃ -/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 CaCO ₃)	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 HCO ₃ - and H ₂ CO ₃ 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 transferred 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 CO ₂ 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**
<p>Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:</p> <ol style="list-style-type: none"> 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. <p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> 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
<p>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.</p>			
HARDNESS-CALC-WP	Water	Hardness Calculated	APHA 2340B
<p>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.</p>			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
<p>Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.</p>			
MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020B (mod.)
<p>Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.</p>			
<p>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.</p>			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
<p>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.</p>			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-WP	Water	Nitrite in Water by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
NO3-IC-N-WP	Water	Nitrate in Water by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
OG-GRAV-WP	Water	Oil & Grease - Gravimetric	EPA 1664 (modified)
<p>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>			
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L
<p>This analysis is carried out using procedures adapted from APHA METHOD 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.</p>			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
<p>PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.</p>			
PH-WP	Water	pH	APHA 4500H
<p>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.</p>			
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
<p>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.</p>			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)
<p>Total suspended solids in aqueous matrices is determined gravimetrically after drying the residue at 103 105°C.</p>			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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 ww - 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.

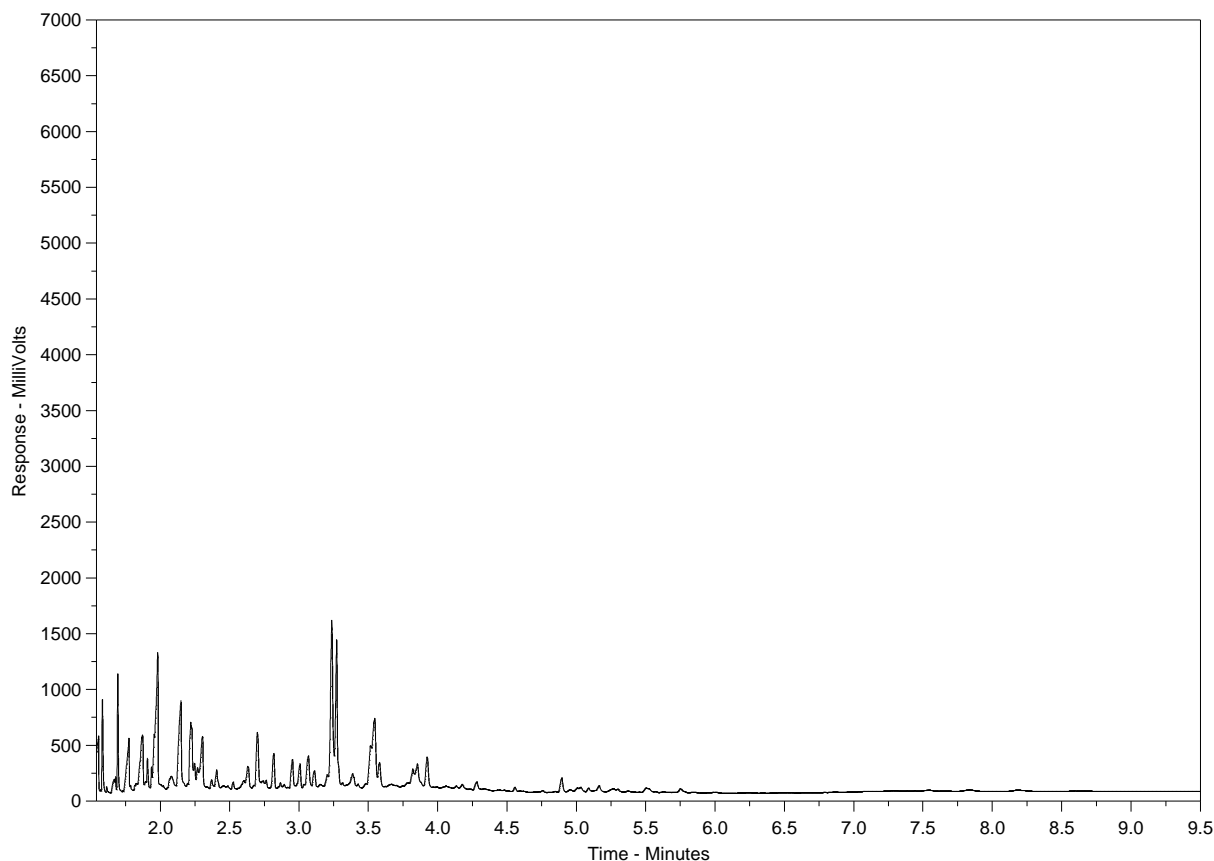
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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: L2324061-1
Client Sample ID: REP - 2



← F2 →		F3		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →					

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.

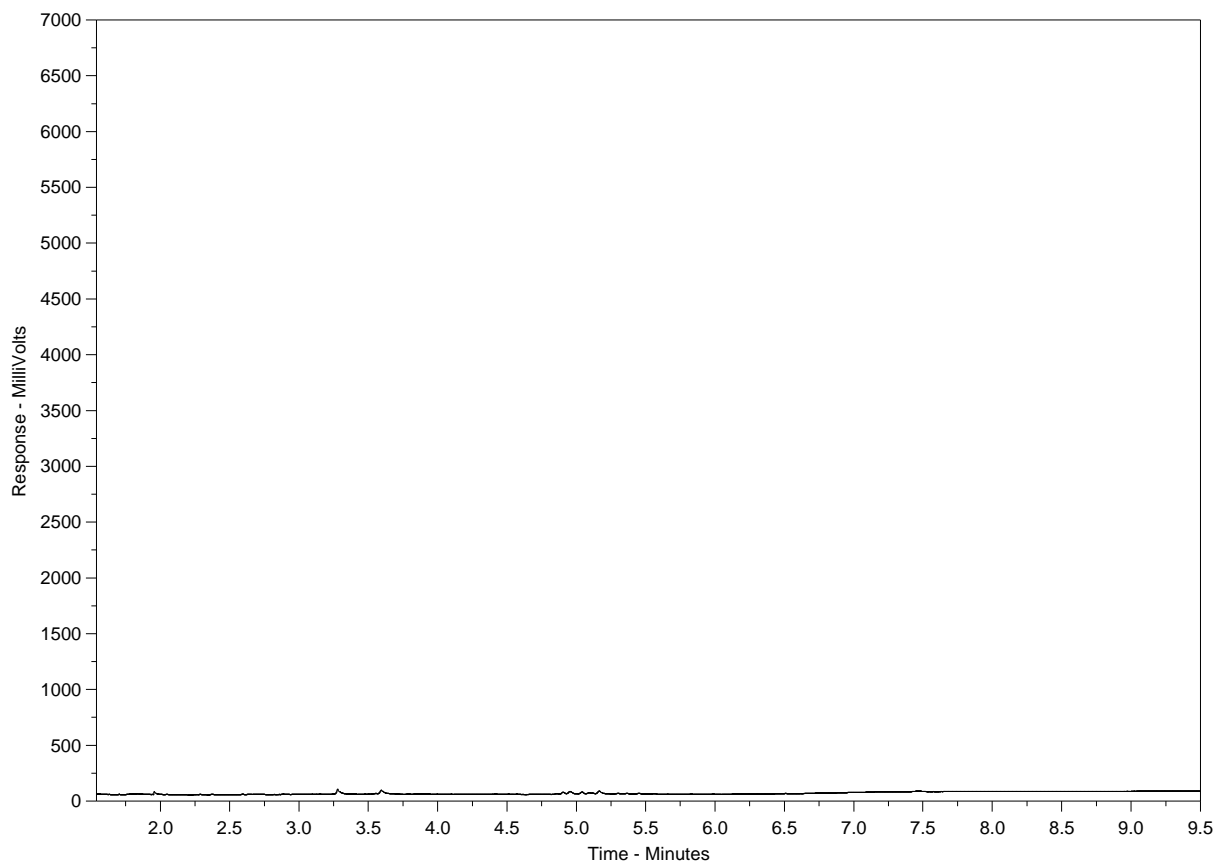
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2324061-2
Client Sample ID: REP - 2A



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →					

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.



**ANNUAL REPORT
FOR THE HAMLET OF NAUJAAT**

Appendix D

Spills

Occurance Date

Start date

Jan

1

2019

End date

Dec

31

2019

Spill Location

--Repulse Bay

Spill Location Description

Report Number

Items per page

100

Go

Reset

Spill Region

--Any--



Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Measurement	Spill Cause	Lead Agency
spill-2019412	October 2, 2019	Keewatin	Repulse Bay, Community, Nunavut	Unit 71	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	46.00	Litres	Breakage	GN - Government of Nunavut
spill-2019311	August 3, 2019	Keewatin	Repulse Bay, Community, Nunavut	Unit 180	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	207.00	Litres	Tank Leak	GN - Government of Nunavut
spill-2019243	June 17, 2019	Keewatin	Repulse Bay, Community, Nunavut	Nunavut Arctic Collage	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20.00	Litres	Tank Leak	GN - Government of Nunavut
spill-2019187	May 6, 2019		Repulse Bay, Community, Nunavut	Unit 71 in Nauyasat lot 187	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	225.00	Litres	Breakage	GN - Government of Nunavut
spill-2019185	April 25, 2019	Keewatin	Repulse Bay, Community, Nunavut	ILA Centre	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	150.00	Litres	Tank Leak	GN - Government of Nunavut

Displaying 1 - 5 of 5

CSV

**ANNUAL REPORT
FOR THE HAMLET OF NAUJAAT**

Appendix E

Naujaat REP-2														
			2014	2015			2016	2017		2018	2019	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	02-Aug-18	01-Aug-19	Min	Max	Average
Alkalinity														
Bicarbonate (HCO3)	mg/L	1.2	/	102	190	248	238	455	205	234	994	102	994	333.25
Carbonate (CO3)	mg/L	0.60	/	0.60	1.92	0.60	0.60	0.60	0.60	0.60	0.60	0.6	1.92	0.77
Hydroxide (OH)	mg/L	0.34	/	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	185	83.4	159	204	195	373	168	191	815	83.4	815	263.71
Ammonia by Colour														
Total (as N)	mg/L	0.20	0.010	0.010	0.014	0.010	0.011	18.3	0.302	0.72	57.1	0.01	57.1	8.50
Biochemical Oxygen Demand (BOD)														
Biochemical Oxygen Demand	mg/L	6.0	6.0	2.0	2.0	2.0	2.0	450	5.3	6.1	750	2	750	136.16
Carbonaceous BOD														
BOD Carbonaceous	mg/L	6.0	/	/	2.0	2.0	2.0	330	3.2	3.5	700	2	700	148.96
Chloride in Water by IC														
Chloride (Cl)	mg/L	10	/	10.0	13.9	25.6	31.3	32.1	12.2	15.1	69.1	10	69.1	26.16
Conductivity														
Conductivity	umhos/cm	1.0	565	213	352	447	487	1120	324	395	1870	213	1870	641.44
Fecal Coliforms														
Fecal Coliforms	MPN/100mL	3	75	3	3	3	3	/	10	10		3	75	15.29
Hardness Calculated														
Hardness (as CaCO3)	mg/L	0.30	223	95.2	151	200	222	487	164	169	561	95.2	561	252.47
Mercury Total														
Mercury (Hg)	mg/L	0.00020	0.000020	0.000020	0.000020	0.000020	0.000020	0.0000470	0.0000067	0.0000050	0.0000050	0.000005	0.000047	0.00
Nitrate in Water by IC														
Nitrate (as N)	mg/L	0.40	/	0.277	0.050	0.297	0.020	0.040	0.069	0.076	0.2	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	0.076	0.22	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	0.10	0.01	0.1	0.02
Oil & Grease - Gravimetric														
Oil and Grease	mg/L	5.0	2.0	2.0	2.0	2.0	5.0	8.0	5.0	5.0	6.8	2	8	4.20
Phenol														
Phenols	mg/L	0.0010	0.0010	0.0016	0.0010	0.0013	0.0018	0.0598	0.0010	0.026	0.236	0.001	0.236	0.04
Phosphorus, Total														
Phosphorus (P)	mg/L	0.010	/	0.013	0.011	0.010	0.012	3.50	0.086	0.0702	3.59	0.01	3.59	0.91
Sulfate in Water by IC														
Sulfate (SO4)	mg/L	6.0	/	14.1	10.6	10.2	21.0	194	11	4.86	19.2	4.86	194	35.61
Total Metals by ICP-MS														
Aluminium (Al)	mg/L	0.0050	/	0.380	0.0182	0.0514	0.0176	0.773	0.0270	0.0301	0.183	0.0176	0.773	0.19
Arsenic (As)	mg/L	0.00020	0.00023	0.00020	0.00020	0.00022	0.00022	0.00287	0.00054	0.00068	0.00367	0.0002	0.00367	0.00
Cadmium (Cd)	mg/L	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000349	0.0000199	0.0000097	0.000307	0.0000097	0.000349	0.00
Calcium (Ca)	mg/L	0.10	66.6	29.4	47.0	60.3	68.2	175	52.1	54.7	191	29.4	191	82.70
Chromium (Cr)	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0068	0.00046	0.00085	0.0109	0.00046	0.0109	0.00
Cobalt (Co)	mg/L	0.00020	/	0.00020	0.00020	0.00020	0.00020	0.00415	0.00039	0.00029	0.00149	0.0002	0.00415	0.00
Copper (Cu)	mg/L	0.00020	0.00151	0.00235	0.00076	0.00115	0.00126	0.0256	0.00352	0.00184	0.0230	0.00076	0.0256	0.01
Iron (Fe)	mg/L	0.010	0.10	0.38	0.10	0.11	0.051	3.93	0.334	0.525	3.93	0.051	3.93	1.05
Lead (Pb)	mg/L	0.000090	0.000090	0.000216	0.000090	0.000090	0.000090	0.00857	0.000633	0.000252	0.00877	0.00009	0.00877	0.00
Magnesium (Mg)	mg/L	0.010	13.7	5.31	8.10	11.9	12.6	12.3	8.33	7.81	20.7	5.31	20.7	11.19
Manganese (Mn)	mg/L	0.00030	/	0.00875	0.0148	0.00640	0.00518	0.529	0.155	0.200	0.793	0.00518	0.793	0.21
Nickel (Ni)	mg/L	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0108	0.00200	0.00250	0.00990	0.002	0.0108	0.00
Potassium (K)	mg/L	0.020	4.03	2.15	2.14	2.95	3.45	25.1	4.51	4.53	39.8	2.14	39.8	9.85
Sodium (Na)	mg/L	0.030	30.3	9.69	15.7	21.4	27.4	68.5	19.6	27.8	129	9.69	129	38.82
Zinc (Zn)	mg/L	0.0020	/	0.0020	0.0020	0.0020	0.0020	0.276	0.0072	0.0145	0.288	0.002	0.288	0.07
Total Organic Carbon by Combustion														
Total Organic Carbon	mg/L	0.50	/	3.5	5.8	8.2	9.75	253	3.57	15.6	490	3.5	490	98.68
Total Suspended Solids														
Total Suspended Solids	mg/L	13	6.0	5.0	9.0	8.0	5.0	54	10	58.1	96.8	5	96.8	27.99
pH														
pH	pH Units	0.10	8.24	8.04	8.30	8.28	8.19	6.92	7.81	7.95	7.64	6.92	8.3	7.93
Benzene	mg/L	0.00050	/	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	/	0.00050	0.0005	0.0005	0.00
Toluene	mg/L	0.0010	/	0.0010	0.0010	0.0010	0.0010	0.0101	0.0010	/	0.0043	0.001	0.0101	0.00
Ethyl Benzene	mg/L	0.00050	/	0.00050	0.00050	0.00050	0.00050	0.00212	0.00050	/	0.00081	0.0005	0.00212	0.00
o-Xylene	mg/L	0.00050	/	0.00050	0.00050	0.00050	0.00050	0.00339	0.00050	/	0.00080	0.0005	0.00339	0.00
F1 (C6-C10)	mg/L	0.10	/	0.10	0.10	0.10	0.10	0.27	0.10	/	0.36	0.1	0.36	0.16
F2 (C10-C16)	mg/L	0.25	/	0.25	0.25	0.25	0.10	0.88	0.10	/	1.17	0.1	1.17	0.43
F3 (C16-C34)	mg/L	0.25	/	0.25	0.25	0.25	0.25	2.99	0.25	/	1.49	0.25	2.99	0.82
F4 (C34-C50)	mg/L	0.25	/	0.25	0.25	0.25	0.25	0.50	0.25	/	0.25	0.25	0.5	0.29
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	0.44	0.44	0.44	0.38	4.14	0.38	/	3.02	0.38	4.14	1.32

<div>Naujaat</div> <div>NAU-2A</div>			2015		2016	2017		2018	2019	Statistics		
Parameter	Unit	DL	25-Aug-15	27-Aug-15	09-Aug-16	29-Jun-17	19-Jul-17	02-Aug-18	01-Aug-19	Min	Max	Average
Alkalinity												
Bicarbonate (HCO3)	mg/L	1.2	767	208	200	42.5	186	254	271	42.5	767	275.50
Carbonate (CO3)	mg/L	0.60	0.60	3.00	0.60	0.60	0.60	0.60	0.60	0.60	3.00	0.94
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	629	175	164	34.8	153	209	222	34.8	629	226.69
Ammonia by Colour												
Total (as N)	mg/L	0.20	25.6	0.234	0.77	0.046	0.040	1.08	0.69	0.04	25.6	4.07
Biochemical Oxygen Demand (BOD)												
Biochemical Oxygen Demand	mg/L	6.0	263	2.0	2.0	2.0	2.0	7.6	3.6	2.0	263	40.31
Carbonaceous BOD												
BOD Carbonaceous	mg/L	6.0	258	2.0	2.0	2.0	2.0	5.0	2	2.0	258	39.00
Chloride in Water by IC												
Chloride (Cl)	mg/L	10	47.0	17.0	9.39	1.21	12.9	12.7	23.1	1.21	47	17.61
Conductivity												
Conductivity	umhos/cm	1.0	1250	388	345	64.1	302	411	479	64.1	1250	462.73
Fecal Coliforms												
Fecal Coliforms	MPN/100mL	3	240	9	43	/	10	<10		9	240	75.50
Hardness Calculated												
Hardness (as CaCO3)	mg/L	0.30	411	160	167	31.2	145	178	174	31.2	411	180.89
Mercury Total												
Mercury (Hg)	mg/L	0.00020	0.00020	0.00020	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.000005	0.0002	0.00006
Nitrate in Water by IC												
Nitrate (as N)	mg/L	0.40	0.040	0.066	0.193	0.020	0.107	0.108	0.047	0.02	0.193	0.08
Nitrate + Nitrite												
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.070	0.193	0.070	0.107	0.108	0.070	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	0.001	0.010	0.001	0.02	0.01
Oil & Grease - Gravimetric												
Oil and Grease	mg/L	5.0	2.0	2.0	5.0	5.0	5.0	5.000	5.0	2.0	5.0	4.14
Phenol												
Phenols	mg/L	0.0010	0.132	0.0019	0.0019	0.0010	0.0010	0.00	0.0010	0.001	0.132	0.02
Phosphorus, Total												
Phosphorus (P)	mg/L	0.010	2.21	0.020	0.066	0.041	0.032	0.111	0.113	0.02	2.21	0.37
Sulfate in Water by IC												
Sulfate (SO4)	mg/L	6.0	26.3	6.75	10.5	1.29	10.7	3.69	5.04	1.29	26.3	9.18
Total Metals by ICP-MS												
Aluminium (Al)	mg/L	0.0050	0.121	0.0080	0.0422	0.0794	0.0662	0.0279	0.0216	0.008	0.121	0.052
Arsenic (As)	mg/L	0.00020	0.00347	0.00034	0.00034	0.00020	0.00043	0.00080	0.00098	0.0002	0.00347	0.0009
Cadmium (Cd)	mg/L	0.000010	0.000327	0.000010	0.000010	0.000010	0.0000070	0.0000098	0.0000093	0.000007	0.000327	0.00005
Calcium (Ca)	mg/L	0.10	142	47.5	52.8	9.87	45.7	54.9	49.7	9.87	142	57.50
Chromium (Cr)	mg/L	0.0010	0.0073	0.0010	0.0010	0.0010	0.00040	0.00080	0.00081	0.0004	0.0073	0.00
Cobalt (Co)	mg/L	0.00020	0.00562	0.00020	0.00020	0.00020	0.00025	0.00035	0.00031	0.0002	0.00562	0.0010
Copper (Cu)	mg/L	0.00020	0.0686	0.00114	0.00284	0.00057	0.00169	0.00220	0.00239	0.00057	0.0686	0.011
Iron (Fe)	mg/L	0.010	2.85	0.19	0.282	0.154	0.220	0.630	0.757	0.154	2.85	0.73
Lead (Pb)	mg/L	0.000090	0.0104	0.000118	0.000229	0.000116	0.000168	0.000431	0.000874	0.000116	0.0104	0.0018
Magnesium (Mg)	mg/L	0.010	13.6	10.1	8.48	1.60	7.44	9.88	12.1	1.6	13.6	9.03
Manganese (Mn)	mg/L	0.00030	0.923	0.0580	0.0872	0.0406	0.0539	0.217	0.246	0.0406	0.923	0.23
Nickel (Ni)	mg/L	0.0020	0.0116	0.0020	0.0020	0.0020	0.00182	0.00262	0.00237	0.00182	0.0116	0.0035
Potassium (K)	mg/L	0.020	31.5	4.32	4.06	0.652	3.24	5.14	6.39	0.652	31.5	7.90
Sodium (Na)	mg/L	0.030	98.2	18.9	13.0	1.21	22.2	21.3	33.6	1.21	98.2	29.77
Zinc (Zn)	mg/L	0.0020	0.312	0.0025	0.0044	0.0024	0.0030	0.0036	0.0053	0.0024	0.312	0.048
Total Organic Carbon by Combustion												
Total Organic Carbon	mg/L	0.50	266	11.3	10.4	1.83	9.05	14.9	20.5	1.83	266	47.71
Total Suspended Solids												
Total Suspended Solids	mg/L	13	54.0	5.0	9.0	5.0	20.0	8.1	7.1	5.0	54	15.46
pH												
pH	pH Units	0.10	7.79	8.45	8.14	7.28	7.99	8.00	8.06	7.28	8.45	7.96
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	0.0022	0.0010	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	0.00050
o-Xylene	mg/L	0.00050	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	0.10
F2 (C10-C16)	mg/L	0.25	0.42	0.25	0.10	0.10	0.10	/	0.10	0.10	0.42	0.18
F3 (C16-C34)	mg/L	0.25	1.51	0.25	0.25	0.25	0.25	/	0.25	0.25	1.51	0.46
F4 (C34-C50)	mg/L	0.25	0.55	0.25	0.25	0.25	0.25	/	0.25	0.25	0.55	0.30
Total Hydrocarbons (C6-C50)	mg/L	0.44	2.48	0.44	0.38	0.38	0.38	/	0.38	0.38	2.48	0.74

			2015			2016	2017		2018	2019	Statistics		
Parameter	Unit	DL	25-Jun-15	29-Jul-15	25-Aug-15	09-Aug-16	29-Jun-17	19-Jul-17	02-Aug-18	01-Aug-19	Min	Max	Average
Alkalinity													
Bicarbonate (HCO3)	mg/L	1.2	141	160	144	179	171	38.9	52.8	169	38.9	179	131.96
Carbonate (CO3)	mg/L	0.60	0.60	0.60	22.3	6.00	0.60	51.5	44.5	11.60	0.60	51.5	17.21
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	116	131	155	157	141	118	118	158	116	158	136.75
Ammonia by Colour													
Total (as N)	mg/L	0.20	10.7	2.95	0.038	4.81	15.9	1.25	0.69	2.89	0.038	15.9	4.90
Biochemical Oxygen Demand (BOD)													
Biochemical Oxygen Demand	mg/L	6.0	12.7	20	26.2	16.1	17.3	44	36.5	37	12.7	44	26.23
Carbonaceous BOD													
BOD Carbonaceous	mg/L	6.0	/	10.5	18.2	13.0	19.1	25.6	13.3	15.2	10.5	25.6	16.41
Chloride in Water by IC													
Chloride (Cl)	mg/L	10	16.6	21.3	31.1	18.9	18.9	26.2	17.9	37.2	16.6	37.2	23.51
Conductivity													
Conductivity	umhos/cm	1.0	298	350	392	375	342	274	264	437	264	437	341.50
Fecal Coliforms													
Fecal Coliforms	MPN/100mL	3	9300	3	3	240	411	10	10	121	3	9300	1262.25
Hardness Calculated													
Hardness (as CaCO3)	mg/L	0.30	71.7	108	145	151	72.8	115	116		71.7	151	111.36
Mercury Total													
Mercury (Hg)	mg/L	0.00020	0.00020	0.00020	0.00020	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.000005	0.0002	0.00008
Nitrate in Water by IC													
Nitrate (as N)	mg/L	0.40	0.038	0.680	0.031	0.535	0.155	0.434	0.435	0.020	0.02	0.68	0.29
Nitrate + Nitrite													
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.860	0.097	0.678	0.155	0.603	0.648	0.070	0.07	0.86	0.40
Nitrite in Water by IC													
Nitrite (as N)	mg/L	0.20	0.010	0.179	0.066	0.143	<0.040	0.168	0.213	0.010	0.010	0.213	0.11
Oil & Grease - Gravimetric													
Oil and Grease	mg/L	5.0	2.0	2.0	2.0	5.0	5.0	11.2	5.0	5.0	2.0	11.2	4.65
Phenol													
Phenols	mg/L	0.0010	0.0067	0.0010	0.0034	0.0019	0.0013	0.0013	0.001	0.0010	0.001	0.0067	0.0022
Phosphorus, Total													
Phosphorus (P)	mg/L	0.010	1.96	1.86	1.32	1.28	1.98	2.82	2.03	3.04	1.28	3.04	2.04
Sulfate in Water by IC													
Sulfate (SO4)	mg/L	6.0	7.07	11.0	14.4	17.8	5.27	9.76	8.64	13.8	5.27	17.8	10.97
Total Metals by ICP-MS													
Aluminium (Al)	mg/L	0.0050	0.0282	0.0344	0.0392	0.0370	0.0240	0.0783	0.0432	0.0357	0.024	0.0783	0.04
Arsenic (As)	mg/L	0.00020	0.00026	0.00030	0.00044	0.00027	0.00028	0.00049	0.00037	0.00065	0.00026	0.00065	0.0004
Cadmium (Cd)	mg/L	0.000010	0.000012	0.00010	0.000010	0.000010	0.000010	0.0000130	0.0000070	0.0000110	0.000007	0.0001	0.00002
Calcium (Ca)	mg/L	0.10	21.0	32.9	42.7	46.8	21.7	33.5	35.2	34	21	46.8	33.48
Chromium (Cr)	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.00023	0.00040	0.00020	0.0002	0.001	0.0007
Cobalt (Co)	mg/L	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00024	0.00017	0.00027	0.00017	0.00027	0.0002
Copper (Cu)	mg/L	0.00020	0.0111	0.00436	0.00332	0.00513	0.0107	0.00842	0.00424	0.00650	0.00332	0.0111	0.007
Iron (Fe)	mg/L	0.010	0.39	0.42	0.21	0.282	0.443	0.474	0.336	0.184	0.184	0.474	0.34
Lead (Pb)	mg/L	0.000090	0.000215	0.000103	0.000090	0.000130	0.000178	0.000228	0.000114	0.000137	0.00009	0.000228	0.0001
Magnesium (Mg)	mg/L	0.010	4.68	6.27	9.24	8.22	4.52	7.69	6.83	8.65	4.52	9.24	7.01
Manganese (Mn)	mg/L	0.00030	0.0296	0.0309	0.0274	0.0296	0.0299	0.0334	0.0294	0.0243	0.0243	0.0334	0.029
Nickel (Ni)	mg/L	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.00139	0.00164	0.00164	0.00139	0.0020	0.0018
Potassium (K)	mg/L	0.020	5.75	5.68	9.13	4.22	7.75	10.3	5.60	13.5	4.22	13.5	7.74
Sodium (Na)	mg/L	0.030	15.2	18.8	29.8	19.4	17.3	24.1	18.6	34.7	15.2	34.7	22.24
Zinc (Zn)	mg/L	0.0020	0.0130	0.0095	0.0039	0.0096	0.0086	0.0098	0.0060	0.0124	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	38.8	72.4	3.61	72.4	28.27
Total Suspended Solids													
Total Suspended Solids	mg/L	13	5.0	35.0	42.0	19.0	16	280	62.5	104	5.0	280	70.44
pH													
pH	pH Units	0.10	8.12	7.96	9.14	8.56	7.75	10.12	9.88	8.74	7.75	10.12	8.78
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

**ANNUAL REPORT
FOR THE HAMLET OF NAUJAAT**

Appendix F



WATER LICENCE INSPECTION FORM

☒ Original

☐ Follow-Up Report

Licensee	Licensee Representative
Hamlet of Naujaat	Kevin Tegumiar
Licence No. / Expiry	Representative's Title
3BM-REP1520/April 8,2020	Senior Administrative Officer
Land / Other Authorizations	Land / Other Authorizations
--	--
Date of Inspection	Inspector
August 1 st ,2019	Atuat Shouldice
Activities Inspected	
<div><input type="checkbox"/> Camp<input type="checkbox"/> Drilling<input type="checkbox"/> Mining<input type="checkbox"/> Construction<input type="checkbox"/> Reclamation<input type="checkbox"/> Fuel Storage</div> <div><input type="checkbox"/> Roads/Hauling<input checked="" type="checkbox"/> Other: Waste Disposal Facility<input checked="" type="checkbox"/> Other: Water Treatment Facility</div>	

SECTION 1	<input checked="" type="checkbox"/> Comments (s. 1_)	<input type="checkbox"/> Non-Compliance with Act or Licence (s. __)	<input type="checkbox"/> Action Required (s. __)
BACKGROUND <p>The Hamlet of Baker Lake is in the Kivalliq Region of Nunavut’s mainland, The hamlet is located exactly on the Arctic Circle, at the north end of the Kivalliq region.</p> Inspector’s Statement <p>On August 1st, 2019, a water licence inspection was conducted of water licence no. 3BM-REP1520 issued to the Hamlet of Naujaat. Kevin Tegumiar, Hamlet of Naujaat and Connor Faulkner, Community and Government Services assisted with the inspection.</p> Observation <ol style="list-style-type: none">1. The Annual report is available for review on the Nunavut Water Board’s FTP website.2. The WTP and Solid Waste Facility (SWF) are equipped with signage.3. The Hamlet Solid waste facility current location has reached capacity and the hamlet is looking for a new location.4. Water use totals for 2018 were 44,013.562 meters cubed.			
SECTION 2	<input type="checkbox"/> Comments	<input checked="" type="checkbox"/> Non-Compliance with Act or Licence	<input type="checkbox"/> Action Required
Concerns related to Water Licence no. 3BM-REP1520; <p><u>Part D Item 5: landfill berm breach on south side of berm.</u> The Landfill has been at capacity for a couple years now, the south berm holding the domestic last has been breached and needs repair.</p> <p><u>Part D Item 10: Hazardous waste segregated but not stored properly.</u> Hazardous waste is stored separately at the landfill. The Hamlet of Naujaat has been doing at great Job of the segregation of hazardous waste, but with regards to automotive and marine batteries, community members often go through the stored batteries in hopes of finding one that works.</p>			
SECTION 3	<input type="checkbox"/> Comments	<input type="checkbox"/> Non-Compliance with Act or Licence	<input checked="" type="checkbox"/> Action Required
<p>The Hamlet is in line to fulfill the goals outlined in the Water Licence Compliance Working Group.</p> <p>During the summer of 2020, The inspector requests that the Hamlet make repairs to the berm walls of the landfill before August 15th of 2020. The Inspector also requests that the battery storage be upgraded to stop possible leaching in to the environment.</p>			

Licensee or Representative	Inspector's Name
Kevin Tegumiar	Atuat Shouldice
Signature	Signature
	Sent Electronically
Date	Date
	January 9 th 2020

CC: Licensing Department, NWB
 Justin Hack, Manager of Field Operations, CIRNAC
 Megan Lusty, Municipal Works, CGS

