ANNUAL REPORT
FOR THE HAMLET OF CORAL HARBOUR

YEAR BEING REPORTED: 2018

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water License No. **3BM-COR1521** issued to the Hamlet of Coral Harbour.

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 COR-1, as well as detailed chemical, physical and biological analysis required at COR-3, COR-4 and COR-6.

Month Reported	Quantity of Water Obtained from all sources (m^3)	Quantity of Sewage Waste Discharged (Estimated, m^3)
January	1,499.573	Same
February	3,272.836	Same
March	3,444.391	Same
April	3,355.733	Same
May	3,382.147	Same
June	3,009.615	Same
July	3,089.985	Same
August	3,231.900	Same
September	2,737.685	Same
October	3,230.262	Same
November	3,151.681	Same
December	1,983.287	Same
ANNUAL TOTAL	**35,389.634**	**35,389.634**

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;

- No modifications and/or major work was carried out at the Solid Waste Site or the Sewage Treatment Facilities in 2018.
- The new Water Treatment Plant was substantially completed December 2016 and warranty work is still being completed (Regional CGS Project Management Office).
- Repairs to the chlorine system were completed during 2018; more work is to come in this regard in 2019.
-The sewage lagoon berm is leaking a significant amount. INAC is sending a letter to the Hamlet of Coral Harbour to repair this. Updates will be added once the work is completed, and pictures added for proof. No updates have been received to date.

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

- Spills:

Spill No.	Date	Site Description	Commodity	Quantity
2018399	2018-09-22	N/A	Petroleum – fuel oil	205 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 31st, 2018. A copy of the inspection report can be found in Appendix G.

Appendix A: COR-5 Effluent Quality Limits – 1 page
Appendix B: Weekly Inspections at Monitoring Stations – 1 page
Appendix C: Certificate of Analysis July 11, 2018 – 21 pages
Appendix D: Certificate of Analysis July 31, 2018 – 14 pages
Appendix E: Hazardous Materials Spill Database, Coral Harbour 2018 – 1 page
Appendix F: Coral Harbour 2018 Sampling Summary - 5 pages
Appendix G: INAC Inspection Report - 2 pages

Appendix A

3BM-COR1521 Coral Harbour Monitoring Program Results 2018
Part D, Item 2: COR-5 Effluent Quality Limits

Parameter	Maximum Average Concentration	COR-5	
		11-Jul-18	03-Jul-18
BOD_5	30 mg/L	12.4	<2.0
Total Suspended Solids	30 mg/L	6.0	<2.0
Fecal Coliforms	$1x10^4$ CFU/100 mL	750	<10
Oil and Grease	No visible sheen	<5.0	<5.0
pH	Between 6 and 9	8.28	8.56

Appendix B

Nunavut Water Board Licence No. 3BM-COR1521
Coral Harbour, NU
Part H: Weekly Inspections at Monitoring Program Stations, June to August

Week	Starting Date	COR-3 Water Present (check)			COR-4 Water Present (check)			COR-5 Water Present (check)			COR-6 Water Present (check)			COR-7 Water Present (check)			Checked By
		Yes	No	Frozen	Yes	No	Frozen	Yes	No	Frozen	Yes	No	Frozen	Yes	No	Frozen	
1	30-Apr-18																
2	07-May-18																
3	14-May-18																
4	21-May-18																
5	28-May-18																
6	04-Jun-18			✓			✓			✓			✓			✓	C.S.
7	11-Jun-18			✓			✓			✓			✓			✓	C.S.
8	18-Jun-18			✓			✓			✓			✓			✓	C.S.
9	25-Jun-18			✓			✓			✓			✓			✓	C.S.
10	02-Jul-18																
11	09-Jul-18																
12	16-Jul-18																
13	23-Jul-18																
14	30-Jul-18																
15	06-Aug-18																
16	13-Aug-18																
17	20-Aug-18																
18	27-Aug-18																

Monitoring Program Station Locations:

COR-3: Effluent from Sewage Containment Cell
COR-4: Station within Wetland
COR-5: Discharge from Wetland
COR-6: Run-off from the Solid Waste Disposal Facility
COR-7: Run-off below Waste metals area

* Fax Sheets Weekly to Connor Faulkner at CGS- Rankin Inlet. Fax: (867) 645-8143

* June 27/18
9:00 AM

still ice in Lagoon and other areas ice still at the bottom. According to Meagan everything's got to be melted before the 1st sampling

Appendix C

Hamlet of Coral Harbour
ATTN: LEONIE PAMOELIK
PO Box 30
Coral Harbour MB X0C 0C0

Date Received: 13-JUL-18
Report Date: 25-JUL-18 11:08 (MT)
Version: FINAL

Client Phone: 867-925-8667

Certificate of Analysis

Lab Work Order #: L2129004

Project P.O. #: NOT SUBMITTED
Job Reference: CORAL HARBOUR MONITORING PROGRAM
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
L2129004-1 COR-5							
Sampled By: CLIENT on 11-JUL-18 @ 12:00							
Matrix: WASTE WATER							
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Acenaphthene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Acenaphthylene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Anthracene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Acridine	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(a)anthracene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Chrysene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Fluoranthene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Fluorene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Naphthalene	<0.000050		0.000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Phenanthrene	<0.000050		0.000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Pyrene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Quinoline	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	18-JUL-18	18-JUL-18	R4134327
Surrogate: Acenaphthene d10	94.4		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Acridine d9	103.1		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Chrysene d12	110.1		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Naphthalene d8	89.3		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Phenanthrene d10	97.7		40-130	%	18-JUL-18	18-JUL-18	R4134327
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	239		1.2	mg/L		17-JUL-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		17-JUL-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		17-JUL-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	196		1.0	mg/L		16-JUL-18	R4128971
Ammonia by colour							
Ammonia, Total (as N)	0.045		0.020	mg/L		17-JUL-18	R4131900
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	12.4	BODQ	2.0	mg/L		13-JUL-18	R4133257
Carbonaceous BOD							
BOD Carbonaceous	8.3	BODQ	2.0	mg/L		13-JUL-18	R4133257
Chloride in Water by IC							
Chloride (Cl)	25.5		0.50	mg/L		14-JUL-18	R4131207
Conductivity							
Conductivity	439		1.0	umhos/cm		16-JUL-18	R4128971
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	750	PEHT	10	MPN/100mL		13-JUL-18	R4124985
Hardness Calculated							
Hardness (as CaCO3)	153	HTC	0.20	mg/L		20-JUL-18	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	16-JUL-18	18-JUL-18	R4132708

* 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
L2129004-1 COR-5							
Sampled By: CLIENT on 11-JUL-18 @ 12:00							
Matrix: WASTE WATER							
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		14-JUL-18	R4131207
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		18-JUL-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		14-JUL-18	R4131207
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		23-JUL-18	R4139070
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		17-JUL-18	R4131590
Phosphorus, Total							
Phosphorus (P)-Total	1.02		0.0020	mg/L		19-JUL-18	R4133029
Sulfate in Water by IC							
Sulfate (SO4)	6.61		0.30	mg/L		14-JUL-18	R4131207
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0233		0.0030	mg/L	18-JUL-18	19-JUL-18	R4133686
Arsenic (As)-Total	0.00079		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Cadmium (Cd)-Total	0.0000192		0.0000050	mg/L	18-JUL-18	19-JUL-18	R4133686
Calcium (Ca)-Total	54.6		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Chromium (Cr)-Total	0.00016		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Cobalt (Co)-Total	0.00055		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Copper (Cu)-Total	0.00324		0.00050	mg/L	18-JUL-18	19-JUL-18	R4133686
Iron (Fe)-Total	0.580		0.010	mg/L	18-JUL-18	19-JUL-18	R4133686
Lead (Pb)-Total	0.000077		0.000050	mg/L	18-JUL-18	19-JUL-18	R4133686
Magnesium (Mg)-Total	4.02		0.0050	mg/L	18-JUL-18	19-JUL-18	R4133686
Manganese (Mn)-Total	0.0179		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Nickel (Ni)-Total	0.00286		0.00050	mg/L	18-JUL-18	19-JUL-18	R4133686
Potassium (K)-Total	4.68		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Sodium (Na)-Total	29.1		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Zinc (Zn)-Total	0.0049		0.0030	mg/L	18-JUL-18	19-JUL-18	R4133686
Total Organic Carbon by Combustion							
Total Organic Carbon	20.1		0.50	mg/L		23-JUL-18	R4139695
Total Suspended Solids							
Total Suspended Solids	6.0	HTD	6.0	mg/L		19-JUL-18	R4138185
pH							
pH	8.28		0.10	pH units		16-JUL-18	R4128971
L2129004-2 COR-7							
Sampled By: CLIENT on 11-JUL-18 @ 10:00							
Matrix: WASTE WATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		17-JUL-18	R4131791
Toluene	<0.0010		0.0010	mg/L		17-JUL-18	R4131791
Ethyl benzene	<0.00050		0.00050	mg/L		17-JUL-18	R4131791
o-Xylene	<0.00050		0.00050	mg/L		17-JUL-18	R4131791
m+p-Xylenes	<0.00040		0.00040	mg/L		17-JUL-18	R4131791
F1 (C6-C10)	<0.10		0.10	mg/L		17-JUL-18	R4131791
Surrogate: 4-Bromofluorobenzene (SS)	90.3		70-130	%		17-JUL-18	R4131791
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	16-JUL-18	17-JUL-18	R4130550
F3 (C16-C34)	<0.25		0.25	mg/L	16-JUL-18	17-JUL-18	R4130550
F4 (C34-C50)	<0.25		0.25	mg/L	16-JUL-18	17-JUL-18	R4130550

* 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
L2129004-2 COR-7							
Sampled By: CLIENT on 11-JUL-18 @ 10:00							
Matrix: WASTE WATER							
CCME PHC F2-F4 in Water							
Surrogate: 2-Bromobenzotrifluoride	80.8		60-140	%	16-JUL-18	17-JUL-18	R4130550
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		20-JUL-18	
F2-Naphth	<0.10		0.10	mg/L		20-JUL-18	
F3-PAH	<0.25		0.25	mg/L		20-JUL-18	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		20-JUL-18	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		18-JUL-18	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Acenaphthene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Acenaphthylene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Anthracene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Acridine	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(a)anthracene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Chrysene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Fluoranthene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Fluorene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Naphthalene	<0.000050		0.000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Phenanthrene	<0.000050		0.000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Pyrene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Quinoline	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	18-JUL-18	18-JUL-18	R4134327
Surrogate: Acenaphthene d10	84.7		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Acridine d9	102.9		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Chrysene d12	116.2		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Naphthalene d8	81.3		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Phenanthrene d10	96.3		40-130	%	18-JUL-18	18-JUL-18	R4134327
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	164		1.2	mg/L		17-JUL-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		17-JUL-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		17-JUL-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	135		1.0	mg/L		16-JUL-18	R4128971
Ammonia by colour							
Ammonia, Total (as N)	0.075		0.010	mg/L		17-JUL-18	R4131900
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	2.6	BODQ	2.0	mg/L		13-JUL-18	R4133257
Carbonaceous BOD							
BOD Carbonaceous	<2.0	BODQ	2.0	mg/L		13-JUL-18	R4133257
Chloride in Water by IC							

* 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
L2129004-2 COR-7							
Sampled By: CLIENT on 11-JUL-18 @ 10:00							
Matrix: WASTE WATER							
Chloride in Water by IC							
Chloride (Cl)	4.86		0.50	mg/L		14-JUL-18	R4131207
Conductivity							
Conductivity	493		1.0	umhos/cm		16-JUL-18	R4128971
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10	PEHT	10	MPN/100mL		13-JUL-18	R4124985
Hardness Calculated							
Hardness (as CaCO3)	242	HTC	0.20	mg/L		20-JUL-18	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	16-JUL-18	18-JUL-18	R4132708
Nitrate in Water by IC							
Nitrate (as N)	0.116		0.020	mg/L		14-JUL-18	R4131207
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.116		0.070	mg/L		18-JUL-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		14-JUL-18	R4131207
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		23-JUL-18	R4139070
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		17-JUL-18	R4131590
Phosphorus, Total							
Phosphorus (P)-Total	0.102		0.0010	mg/L		19-JUL-18	R4133029
Sulfate in Water by IC							
Sulfate (SO4)	117		0.30	mg/L		14-JUL-18	R4131207
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0197		0.0030	mg/L	18-JUL-18	19-JUL-18	R4133686
Arsenic (As)-Total	0.00044		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Cadmium (Cd)-Total	0.0000234		0.0000050	mg/L	18-JUL-18	19-JUL-18	R4133686
Calcium (Ca)-Total	89.4		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Chromium (Cr)-Total	0.00040		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Cobalt (Co)-Total	0.00028		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Copper (Cu)-Total	0.00389		0.00050	mg/L	18-JUL-18	19-JUL-18	R4133686
Iron (Fe)-Total	0.919		0.010	mg/L	18-JUL-18	19-JUL-18	R4133686
Lead (Pb)-Total	0.000343		0.000050	mg/L	18-JUL-18	19-JUL-18	R4133686
Magnesium (Mg)-Total	4.46		0.0050	mg/L	18-JUL-18	19-JUL-18	R4133686
Manganese (Mn)-Total	0.0428		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Nickel (Ni)-Total	0.00203		0.00050	mg/L	18-JUL-18	19-JUL-18	R4133686
Potassium (K)-Total	3.97		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Sodium (Na)-Total	6.25		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Zinc (Zn)-Total	0.0379		0.0030	mg/L	18-JUL-18	19-JUL-18	R4133686
Total Organic Carbon by Combustion							
Total Organic Carbon	20.1		0.50	mg/L		23-JUL-18	R4139695
Total Suspended Solids							
Total Suspended Solids	<2.0	HTD	2.0	mg/L		19-JUL-18	R4138185
pH							
pH	7.78		0.10	pH units		16-JUL-18	R4128971

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
BODQ	BOD Qualification: Lab Control Sample outside standard 85-115% objective (see QC report). Sample(s) cannot be rerun due to hold time expiry.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
RRQC	Refer to report remarks for information regarding this QC result.

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

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.

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

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous 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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)
Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
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:

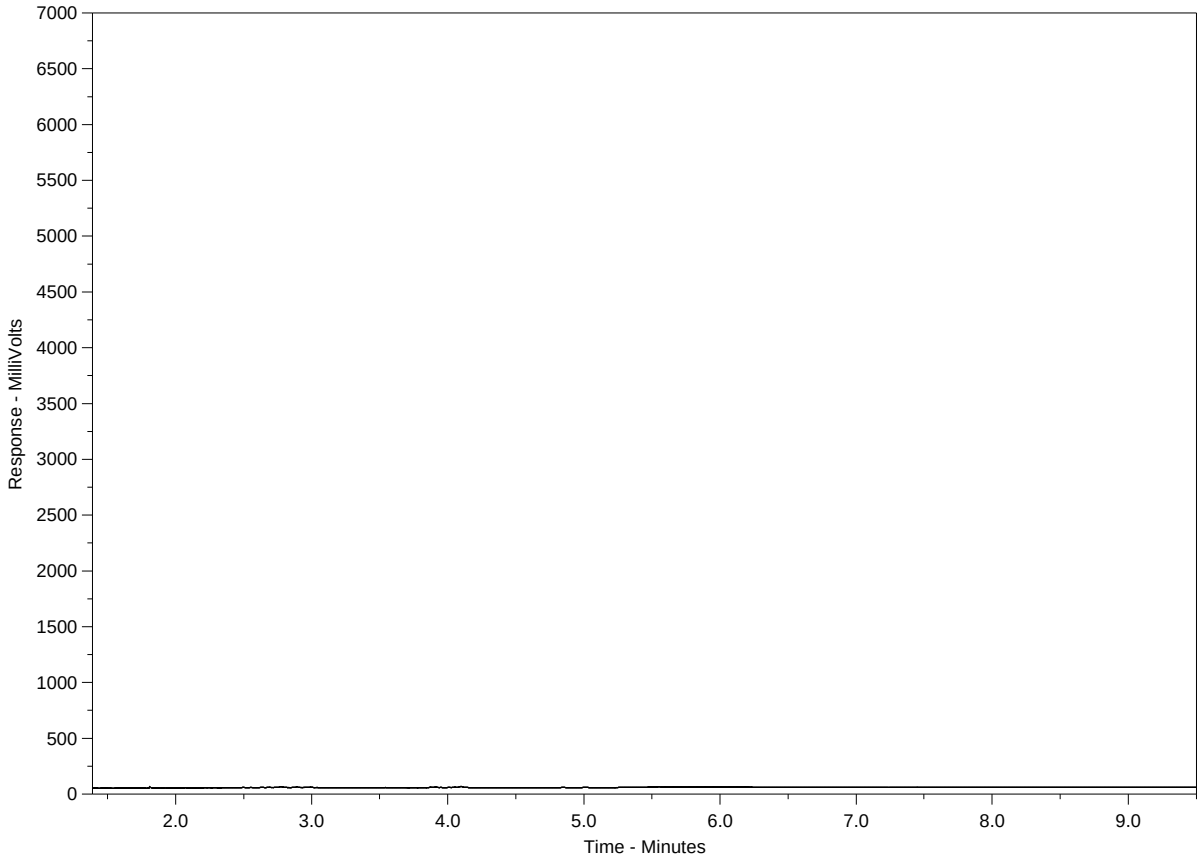
GLOSSARY OF REPORT TERMS

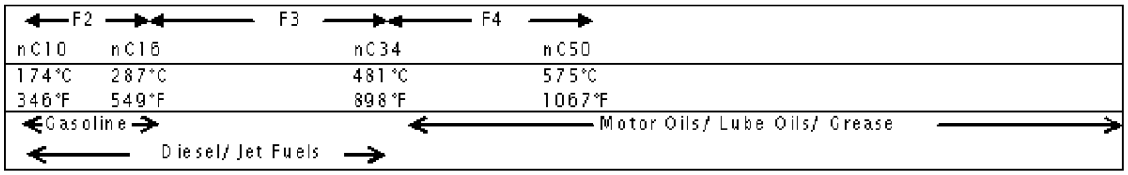
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates 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: L2129004-2
Client Sample ID: COR-7





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.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2129004-COFC

COC Number: 17 - 679660

Page of

Report To	Contact and company name below will appear on the final report	Report For	Turnaround Time (TAT) Required - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Hamlet of Coral Harbour	Select Report Format: ☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Leonie Pameolik	Quality Control (QC) Report with Report ☑ YES ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐
Phone:	867 925-8867	☐ Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E-100%] ☐ / Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Street:	P.O. Box 30 Coral Harbour	Email 1 or Fax munch@qiniq.com	For tests that can not be performed according to the service level selected, you will be contacted. Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:	Coral Harbour Nunavut	Email 2	
Postal Code:	X0C0C0	Email 3	
Invoice To	Same as Report To ☑ YES ☐ NO	**Invoice Distribution**	**Analysis Request**
	Copy of Invoice with Report ☑ YES ☐ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:		Email 1 or Fax munch@qiniq.com	
Contact:		Email 2	

Project Information	Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	AFE/Cost Center:	PO#
Job #: Coral Harbour monitoring program	Major/Minor Code:	Routing Code:
PO / AFE:	Requisitioner:	
LSD:	Location:	
ALS Lab Work Order # (lab use only):	ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Routine	Metals	Hydrides	Phenols	Oil/Grease	PAH	BTEX/VOC	F2-F4						SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	Cor-5	11/07/18	12 PM	Wastewater	✓	✓	✓		✓	✓	✓	✓								
	Cor-7	11/07/18	10 AM	Wastewater	✓				✓											

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

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		
16.8					

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:
George Alook	11/07/18	1PM	QG	July 13/18	10:15			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 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 Coral Harbour
ATTN: LEONIE PAMEOLIK
PO Box 30
Coral Harbour MB X0C 0C0

Date Received: 13-JUL-18
Report Date: 26-JUL-18 15:14 (MT)
Version: FINAL

Client Phone: 867-925-8867

Certificate of Analysis

Lab Work Order #: L2128988

Project P.O. #: NOT SUBMITTED
Job Reference: CORAL HARBOUR MONITORING PROGRAM
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
L2128988-1 COR-3							
Sampled By: CLIENT on 11-JUL-18							
Matrix: WASTE WATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	385		1.2	mg/L		17-JUL-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		17-JUL-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		17-JUL-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	316		1.0	mg/L		16-JUL-18	R4128971
Ammonia by colour							
Ammonia, Total (as N)	53.3		2.0	mg/L		14-JUL-18	R4129527
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	94	BODQ	20	mg/L		13-JUL-18	R4133257
Carbonaceous BOD							
BOD Carbonaceous	80	BODQ	20	mg/L		13-JUL-18	R4133257
Chloride in Water by IC							
Chloride (Cl)	38.1		1.0	mg/L		14-JUL-18	R4131207
Conductivity							
Conductivity	789		1.0	umhos/cm		16-JUL-18	R4128971
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	>24200	PEHT	10	MPN/100mL		13-JUL-18	R4124985
Hardness Calculated							
Hardness (as CaCO3)	84.7	HTC	0.20	mg/L		20-JUL-18	
Mercury Total							
Mercury (Hg)-Total	0.0000117		0.0000050	mg/L	16-JUL-18	18-JUL-18	R4132708
Nitrate in Water by IC							
Nitrate (as N)	<0.040	DLM	0.040	mg/L		14-JUL-18	R4131207
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		18-JUL-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		14-JUL-18	R4131207
Oil & Grease - Gravimetric							
Oil and Grease	5.9		5.0	mg/L		23-JUL-18	R4138284
Phenol (4AAP)							
Phenols (4AAP)	0.063	DLM	0.010	mg/L		17-JUL-18	R4131590
Phosphorus, Total							
Phosphorus (P)-Total	8.97		0.020	mg/L		19-JUL-18	R4133029
Sulfate in Water by IC							
Sulfate (SO4)	1.68		0.60	mg/L		14-JUL-18	R4131207
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0660		0.0030	mg/L	18-JUL-18	19-JUL-18	R4133686
Arsenic (As)-Total	0.00096		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Cadmium (Cd)-Total	0.0000457		0.0000050	mg/L	18-JUL-18	19-JUL-18	R4133686
Calcium (Ca)-Total	27.8		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Chromium (Cr)-Total	0.00045		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Cobalt (Co)-Total	0.00064		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Copper (Cu)-Total	0.0330		0.00050	mg/L	18-JUL-18	19-JUL-18	R4133686
Iron (Fe)-Total	0.448		0.010	mg/L	18-JUL-18	19-JUL-18	R4133686
Lead (Pb)-Total	0.000528		0.000050	mg/L	18-JUL-18	19-JUL-18	R4133686
Magnesium (Mg)-Total	3.72		0.0050	mg/L	18-JUL-18	19-JUL-18	R4133686
Manganese (Mn)-Total	0.0422		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Nickel (Ni)-Total	0.00282		0.00050	mg/L	18-JUL-18	19-JUL-18	R4133686

* 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
L2128988-1 COR-3							
Sampled By: CLIENT on 11-JUL-18							
Matrix: WASTE WATER							
Total Metals in Water by CRC ICPMS							
Potassium (K)-Total	17.7		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Sodium (Na)-Total	36.3		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Zinc (Zn)-Total	0.0259		0.0030	mg/L	18-JUL-18	19-JUL-18	R4133686
Total Organic Carbon by Combustion							
Total Organic Carbon	68.6		5.0	mg/L		24-JUL-18	R4141508
Total Suspended Solids							
Total Suspended Solids	49	HTD	10	mg/L		19-JUL-18	R4138185
pH							
pH	7.19		0.10	pH units		16-JUL-18	R4128971
L2128988-2 COR-4							
Sampled By: CLIENT on 11-JUL-18							
Matrix: WASTE WATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	331		1.2	mg/L		17-JUL-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		17-JUL-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		17-JUL-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	271		1.0	mg/L		16-JUL-18	R4128971
Ammonia by colour							
Ammonia, Total (as N)	22.3		2.0	mg/L		14-JUL-18	R4129527
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	34.5	BODQ	6.0	mg/L		13-JUL-18	R4133257
Carbonaceous BOD							
BOD Carbonaceous	20.0	BODQ	6.0	mg/L		13-JUL-18	R4133257
Chloride in Water by IC							
Chloride (Cl)	33.5		0.50	mg/L		14-JUL-18	R4131207
Conductivity							
Conductivity	631		1.0	umhos/cm		16-JUL-18	R4128971
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	660	PEHT	10	MPN/100mL		13-JUL-18	R4124985
Hardness Calculated							
Hardness (as CaCO3)	148	HTC	0.20	mg/L		20-JUL-18	
Mercury Total							
Mercury (Hg)-Total	0.0000093		0.0000050	mg/L	16-JUL-18	18-JUL-18	R4132708
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		14-JUL-18	R4131207
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		18-JUL-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		14-JUL-18	R4131207
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		23-JUL-18	R4138284
Phenol (4AAP)							
Phenols (4AAP)	0.0151		0.0010	mg/L		17-JUL-18	R4131590
Phosphorus, Total							
Phosphorus (P)-Total	4.06		0.010	mg/L		19-JUL-18	R4133029
Sulfate in Water by IC							
Sulfate (SO4)	5.43		0.30	mg/L		14-JUL-18	R4131207

* 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
L2128988-2 COR-4							
Sampled By: CLIENT on 11-JUL-18							
Matrix: WASTE WATER							
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0342		0.0030	mg/L	18-JUL-18	19-JUL-18	R4133686
Arsenic (As)-Total	0.00234		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Cadmium (Cd)-Total	0.0000695		0.0000050	mg/L	18-JUL-18	19-JUL-18	R4133686
Calcium (Ca)-Total	52.7		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Chromium (Cr)-Total	0.00041		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Cobalt (Co)-Total	0.00214		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Copper (Cu)-Total	0.0151		0.00050	mg/L	18-JUL-18	19-JUL-18	R4133686
Iron (Fe)-Total	0.849		0.010	mg/L	18-JUL-18	19-JUL-18	R4133686
Lead (Pb)-Total	0.000366		0.000050	mg/L	18-JUL-18	19-JUL-18	R4133686
Magnesium (Mg)-Total	4.04		0.0050	mg/L	18-JUL-18	19-JUL-18	R4133686
Manganese (Mn)-Total	0.133		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Nickel (Ni)-Total	0.00486		0.00050	mg/L	18-JUL-18	19-JUL-18	R4133686
Potassium (K)-Total	14.0		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Sodium (Na)-Total	31.5		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Zinc (Zn)-Total	0.0106		0.0030	mg/L	18-JUL-18	19-JUL-18	R4133686
Total Organic Carbon by Combustion							
Total Organic Carbon	32.8		0.50	mg/L		23-JUL-18	R4138739
Total Suspended Solids							
Total Suspended Solids	17	HTD	10	mg/L		19-JUL-18	R4138185
pH							
pH	7.40		0.10	pH units		16-JUL-18	R4128971
L2128988-3 COR-6							
Sampled By: CLIENT on 11-JUL-18							
Matrix: WASTE WATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		17-JUL-18	R4131791
Toluene	<0.0010		0.0010	mg/L		17-JUL-18	R4131791
Ethyl benzene	<0.00050		0.00050	mg/L		17-JUL-18	R4131791
o-Xylene	<0.00050		0.00050	mg/L		17-JUL-18	R4131791
m+p-Xylenes	<0.00040		0.00040	mg/L		17-JUL-18	R4131791
F1 (C6-C10)	<0.10		0.10	mg/L		17-JUL-18	R4131791
Surrogate: 4-Bromofluorobenzene (SS)	92.2		70-130	%		17-JUL-18	R4131791
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	16-JUL-18	17-JUL-18	R4130550
F3 (C16-C34)	<0.25		0.25	mg/L	16-JUL-18	17-JUL-18	R4130550
F4 (C34-C50)	<0.25		0.25	mg/L	16-JUL-18	17-JUL-18	R4130550
Surrogate: 2-Bromobenzotrifluoride	88.4		60-140	%	16-JUL-18	17-JUL-18	R4130550
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		19-JUL-18	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		19-JUL-18	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		18-JUL-18	
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	211		1.2	mg/L		17-JUL-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		17-JUL-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		17-JUL-18	
Alkalinity, Total (as CaCO3)							

* 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
L2128988-3 COR-6							
Sampled By: CLIENT on 11-JUL-18							
Matrix: WASTE WATER							
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	173		1.0	mg/L		16-JUL-18	R4128971
Ammonia by colour							
Ammonia, Total (as N)	0.022		0.010	mg/L		14-JUL-18	R4129527
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	7.3	BODQ	2.0	mg/L		13-JUL-18	R4133257
Carbonaceous BOD							
BOD Carbonaceous	3.7	BODQ	2.0	mg/L		13-JUL-18	R4133257
Chloride in Water by IC							
Chloride (Cl)	17.3		0.50	mg/L		14-JUL-18	R4131207
Conductivity							
Conductivity	423		1.0	umhos/cm		16-JUL-18	R4128971
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	170	PEHT	10	MPN/100mL		13-JUL-18	R4124985
Hardness Calculated							
Hardness (as CaCO3)	183	HTC	0.20	mg/L		20-JUL-18	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	16-JUL-18	18-JUL-18	R4132708
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		14-JUL-18	R4131207
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		18-JUL-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		14-JUL-18	R4131207
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		23-JUL-18	R4138284
Phenol (4AAP)							
Phenols (4AAP)	0.0010		0.0010	mg/L		17-JUL-18	R4131590
Phosphorus, Total							
Phosphorus (P)-Total	0.209		0.010	mg/L		19-JUL-18	R4133029
Sulfate in Water by IC							
Sulfate (SO4)	33.0		0.30	mg/L		14-JUL-18	R4131207
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.126		0.0030	mg/L	18-JUL-18	19-JUL-18	R4133686
Arsenic (As)-Total	0.00071		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Cadmium (Cd)-Total	0.0000096		0.0000050	mg/L	18-JUL-18	19-JUL-18	R4133686
Calcium (Ca)-Total	61.7		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Chromium (Cr)-Total	0.00040		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Cobalt (Co)-Total	0.00016		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Copper (Cu)-Total	0.00152		0.00050	mg/L	18-JUL-18	19-JUL-18	R4133686
Iron (Fe)-Total	0.591		0.010	mg/L	18-JUL-18	19-JUL-18	R4133686
Lead (Pb)-Total	0.000355		0.000050	mg/L	18-JUL-18	19-JUL-18	R4133686
Magnesium (Mg)-Total	6.94		0.0050	mg/L	18-JUL-18	19-JUL-18	R4133686
Manganese (Mn)-Total	0.0665		0.00010	mg/L	18-JUL-18	19-JUL-18	R4133686
Nickel (Ni)-Total	0.00096		0.00050	mg/L	18-JUL-18	19-JUL-18	R4133686
Potassium (K)-Total	5.38		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Sodium (Na)-Total	16.2		0.050	mg/L	18-JUL-18	19-JUL-18	R4133686
Zinc (Zn)-Total	0.0192		0.0030	mg/L	18-JUL-18	19-JUL-18	R4133686
Total Organic Carbon by Combustion							
Total Organic Carbon	14.9		0.50	mg/L		23-JUL-18	R4138739
Total Suspended Solids							
Total Suspended Solids	13.7	HTD	2.0	mg/L		19-JUL-18	R4138185
pH							

* 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
L2128988-3 COR-6							
Sampled By: CLIENT on 11-JUL-18							
Matrix: WASTE WATER							
pH							
pH	8.13		0.10	pH units		16-JUL-18	R4128971

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
BODQ	BOD Qualification: Lab Control Sample outside standard 85-115% objective (see QC report). Sample(s) cannot be rerun due to hold time expiry.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
RRQC	Refer to report remarks for information regarding this QC result.

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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

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.

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

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

PH-WP	Water	pH	APHA 4500H

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

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

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

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:

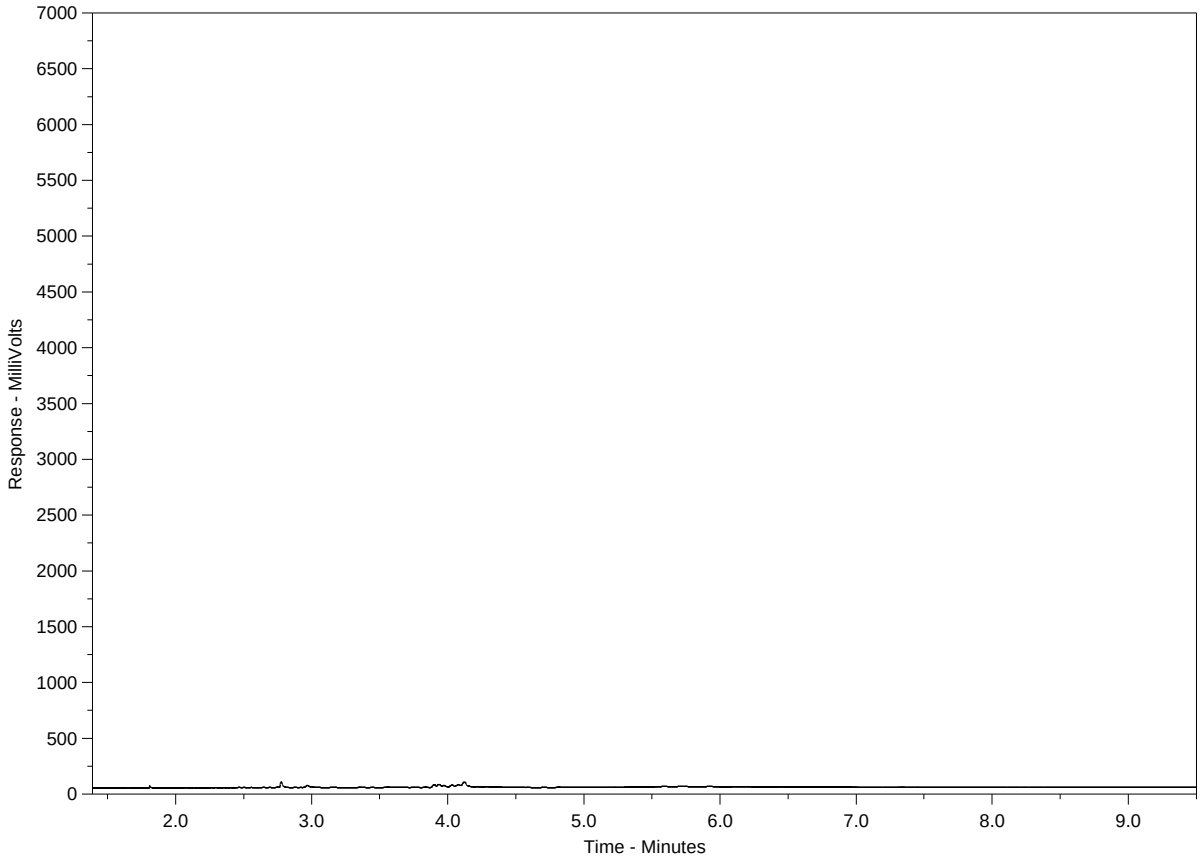
GLOSSARY OF REPORT TERMS

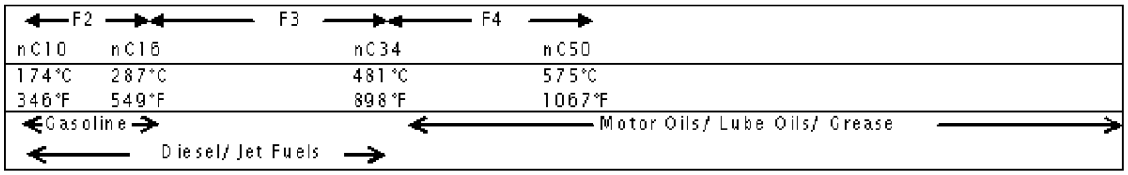
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates 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: L2128988-3
Client Sample ID: COR-6





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

L2128988-COFC

COC Number: 14 - 450510

Page ____ of ____

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Hamlet of Coral Harbour	Select Report Format:	☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3pm)
Contact:	Leonie Pameolik	Quality Control (QC) Report with Report	☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:	P.O. Box 30 Coral Harbour	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 business days if received by 3pm)
Phone:	867 925-8807 Fax 867 925-8233	Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
		Email 1 or Fax	mlusty@gov.nu.ca	Specify Date Required for E2,E or P:
		Email 2		

Invoice To		Invoice Distribution	
	Same as Report To ☑ Yes ☐ No	Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
	Copy of Invoice with Report ☑ Yes ☐ No	Email 1 or Fax	mlusty@gov.nu.ca
Company:		Email 2	
Contact:			

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:		Approver ID:	Cost Center:
Job #:	Coral Harbour monitoring Program	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

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

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD	Routine	Metals	Nutrients	Phenols	Mercury	Oil/Grease	BTEX/VOC	F2-F4					Number of Containers
	Cor-3	11/07/18	waste water			✓	✓	✓		✓	✓							
	Cor-4	11/07/18	" 4			✓	✓	✓		✓	✓							
	Cor-6	11/07/18	" 11			✓	✓	✓		✓	✓	✓	✓					

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

SAMPLE CONDITION AS RECEIVED (lab use only)

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

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
					16.6

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:
Maggie Closurt	11/07/18	1PM		11/08/18	1615			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326a v08 Front03 October 2013

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**.

Appendix D

Hamlet of Coral Harbour
ATTN: LEONIE PAMEOLIK
PO Box 30
Coral Harbour MB X0C 0C0

Date Received: 02-AUG-18
Report Date: 22-AUG-18 14:32 (MT)
Version: FINAL

Client Phone: 867-925-8867

Certificate of Analysis

Lab Work Order #: L2140441

Project P.O. #: NOT SUBMITTED
Job Reference: CORAL HARBOUR - WASTE WATER SAMPLES
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
L2140441-1 COR-7							
Sampled By: CASEY							
Matrix: WW							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		03-AUG-18	R4160778
Toluene	<0.0010		0.0010	mg/L		03-AUG-18	R4160778
Ethyl benzene	<0.00050		0.00050	mg/L		03-AUG-18	R4160778
o-Xylene	<0.00050		0.00050	mg/L		03-AUG-18	R4160778
m+p-Xylenes	<0.00040		0.00040	mg/L		03-AUG-18	R4160778
F1 (C6-C10)	<0.10		0.10	mg/L		03-AUG-18	R4160778
Surrogate: 4-Bromofluorobenzene (SS)	91.5		70-130	%		03-AUG-18	R4160778
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	07-AUG-18	07-AUG-18	R4145716
F3 (C16-C34)	<0.25		0.25	mg/L	07-AUG-18	07-AUG-18	R4145716
F4 (C34-C50)	<0.25		0.25	mg/L	07-AUG-18	07-AUG-18	R4145716
Surrogate: 2-Bromobenzotrifluoride	93.5		60-140	%	07-AUG-18	07-AUG-18	R4145716
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		14-AUG-18	
F2-Naphth	<0.10		0.10	mg/L		14-AUG-18	
F3-PAH	<0.25		0.25	mg/L		14-AUG-18	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		14-AUG-18	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		09-AUG-18	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Acenaphthene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Acenaphthylene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Anthracene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Acridine	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(a)anthracene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Chrysene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Fluoranthene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Fluorene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Naphthalene	<0.000050		0.000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Phenanthrene	<0.000050		0.000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Pyrene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Quinoline	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	03-AUG-18	08-AUG-18	R4166934
Surrogate: Acenaphthene d10	81.3		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Acridine d9	81.7		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Chrysene d12	92.8		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Naphthalene d8	75.0		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Phenanthrene d10	88.5		40-130	%	03-AUG-18	08-AUG-18	R4166934
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	85.5		1.2	mg/L		07-AUG-18	
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
L2140441-1 COR-7							
Sampled By: CASEY							
Matrix: WW							
Alkalinity, Carbonate							
Carbonate (CO3)	4.68		0.60	mg/L		07-AUG-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		07-AUG-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	77.9		1.0	mg/L		03-AUG-18	R4159770
Ammonia by colour							
Ammonia, Total (as N)	0.031		0.010	mg/L		03-AUG-18	R4159352
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		02-AUG-18	R4160693
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		02-AUG-18	R4160693
Chloride in Water by IC							
Chloride (Cl)	5.78		0.50	mg/L		08-AUG-18	R4161971
Conductivity							
Conductivity	743		1.0	umhos/cm		03-AUG-18	R4159770
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	30		10	MPN/100mL		02-AUG-18	R4157447
Hardness Calculated							
Hardness (as CaCO3)	398	HTC	0.20	mg/L		14-AUG-18	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	02-AUG-18	08-AUG-18	R4161347
Nitrate in Water by IC							
Nitrate (as N)	<0.020	HTD	0.020	mg/L		08-AUG-18	R4161971
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		08-AUG-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.010	HTD	0.010	mg/L		08-AUG-18	R4161971
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		13-AUG-18	R4168158
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		07-AUG-18	R4161179
Phosphorus, Total							
Phosphorus (P)-Total	0.0713		0.0010	mg/L		13-AUG-18	R4168097
Sulfate in Water by IC							
Sulfate (SO4)	298		0.30	mg/L		08-AUG-18	R4161971
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0438		0.0030	mg/L	13-AUG-18	13-AUG-18	R4168412
Arsenic (As)-Total	0.00050		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Cadmium (Cd)-Total	0.0000236		0.0000050	mg/L	13-AUG-18	13-AUG-18	R4168412
Calcium (Ca)-Total	145		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Chromium (Cr)-Total	0.00046		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Cobalt (Co)-Total	0.00027		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Copper (Cu)-Total	0.00500		0.00050	mg/L	13-AUG-18	13-AUG-18	R4168412
Iron (Fe)-Total	0.753		0.010	mg/L	13-AUG-18	13-AUG-18	R4168412
Lead (Pb)-Total	0.000463		0.000050	mg/L	13-AUG-18	13-AUG-18	R4168412
Magnesium (Mg)-Total	8.64		0.0050	mg/L	13-AUG-18	13-AUG-18	R4168412
Manganese (Mn)-Total	0.0229		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Nickel (Ni)-Total	0.00257		0.00050	mg/L	13-AUG-18	13-AUG-18	R4168412
Potassium (K)-Total	5.41		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Sodium (Na)-Total	11.0		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Zinc (Zn)-Total	0.0526		0.0030	mg/L	13-AUG-18	13-AUG-18	R4168412
Total Organic Carbon by Combustion							

* 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
L2140441-1 COR-7							
Sampled By: CASEY							
Matrix: WW							
Total Organic Carbon by Combustion							
Total Organic Carbon	25.5		0.50	mg/L		17-AUG-18	R4178039
Total Suspended Solids							
Total Suspended Solids	2.1		2.0	mg/L		08-AUG-18	R4161989
pH							
pH	8.49		0.10	pH units		03-AUG-18	R4159770
L2140441-2 COR-6							
Sampled By: CASEY							
Matrix: WW							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		03-AUG-18	R4160778
Toluene	<0.0010		0.0010	mg/L		03-AUG-18	R4160778
Ethyl benzene	<0.00050		0.00050	mg/L		03-AUG-18	R4160778
o-Xylene	<0.00050		0.00050	mg/L		03-AUG-18	R4160778
m+p-Xylenes	<0.00040		0.00040	mg/L		03-AUG-18	R4160778
F1 (C6-C10)	<0.10		0.10	mg/L		03-AUG-18	R4160778
Surrogate: 4-Bromofluorobenzene (SS)	89.5		70-130	%		03-AUG-18	R4160778
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	07-AUG-18	07-AUG-18	R4145716
F3 (C16-C34)	<0.25		0.25	mg/L	07-AUG-18	07-AUG-18	R4145716
F4 (C34-C50)	<0.25		0.25	mg/L	07-AUG-18	07-AUG-18	R4145716
Surrogate: 2-Bromobenzotrifluoride	91.2		60-140	%	07-AUG-18	07-AUG-18	R4145716
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		14-AUG-18	
F2-Naphth	<0.10		0.10	mg/L		14-AUG-18	
F3-PAH	<0.25		0.25	mg/L		14-AUG-18	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		14-AUG-18	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		09-AUG-18	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Acenaphthene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Acenaphthylene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Anthracene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Acridine	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(a)anthracene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Chrysene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Fluoranthene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Fluorene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Naphthalene	<0.000050		0.000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Phenanthrene	<0.000050		0.000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Pyrene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Quinoline	0.000022		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934

* 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
L2140441-2 COR-6							
Sampled By: CASEY							
Matrix: WW							
Polyaromatic Hydrocarbons (PAHs)							
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	03-AUG-18	08-AUG-18	R4166934
Surrogate: Acenaphthene d10	75.8		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Acridine d9	71.7		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Chrysene d12	80.5		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Naphthalene d8	71.4		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Phenanthrene d10	79.1		40-130	%	03-AUG-18	08-AUG-18	R4166934
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	215		1.2	mg/L		07-AUG-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		07-AUG-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		07-AUG-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	177		1.0	mg/L		03-AUG-18	R4159770
Ammonia by colour							
Ammonia, Total (as N)	0.058		0.010	mg/L		03-AUG-18	R4159352
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	3.8		2.0	mg/L		02-AUG-18	R4160693
Carbonaceous BOD							
BOD Carbonaceous	2.3		2.0	mg/L		02-AUG-18	R4160693
Chloride in Water by IC							
Chloride (Cl)	39.4		0.50	mg/L		03-AUG-18	R4160847
Conductivity							
Conductivity	734		1.0	umhos/cm		03-AUG-18	R4159770
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	140		10	MPN/100mL		02-AUG-18	R4157447
Hardness Calculated							
Hardness (as CaCO3)	292	HTC	0.20	mg/L		14-AUG-18	
Mercury Total							
Mercury (Hg)-Total	0.0000060		0.0000050	mg/L	02-AUG-18	08-AUG-18	R4161347
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		03-AUG-18	R4160847
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		08-AUG-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		03-AUG-18	R4160847
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		13-AUG-18	R4168158
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		07-AUG-18	R4161179
Phosphorus, Total							
Phosphorus (P)-Total	0.159		0.0010	mg/L		13-AUG-18	R4168097
Sulfate in Water by IC							
Sulfate (SO4)	161		0.30	mg/L		03-AUG-18	R4160847
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.119		0.0030	mg/L	13-AUG-18	13-AUG-18	R4168412
Arsenic (As)-Total	0.00126		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Cadmium (Cd)-Total	0.0000124		0.0000050	mg/L	13-AUG-18	13-AUG-18	R4168412
Calcium (Ca)-Total	87.4		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Chromium (Cr)-Total	0.00045		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Cobalt (Co)-Total	0.00022		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412

* 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
L2140441-2 COR-6							
Sampled By: CASEY							
Matrix: WW							
Total Metals in Water by CRC ICPMS							
Copper (Cu)-Total	0.00199		0.00050	mg/L	13-AUG-18	13-AUG-18	R4168412
Iron (Fe)-Total	0.359		0.010	mg/L	13-AUG-18	13-AUG-18	R4168412
Lead (Pb)-Total	0.000283		0.000050	mg/L	13-AUG-18	13-AUG-18	R4168412
Magnesium (Mg)-Total	17.9		0.0050	mg/L	13-AUG-18	13-AUG-18	R4168412
Manganese (Mn)-Total	0.0465		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Nickel (Ni)-Total	0.00169		0.00050	mg/L	13-AUG-18	13-AUG-18	R4168412
Potassium (K)-Total	14.2		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Sodium (Na)-Total	41.6		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Zinc (Zn)-Total	0.0037		0.0030	mg/L	13-AUG-18	13-AUG-18	R4168412
Total Organic Carbon by Combustion							
Total Organic Carbon	24.6		0.50	mg/L		17-AUG-18	R4178039
Total Suspended Solids							
Total Suspended Solids	5.7		2.0	mg/L		08-AUG-18	R4161989
pH							
pH	8.09		0.10	pH units		03-AUG-18	R4159770
L2140441-3 COR-3							
Sampled By: CASEY							
Matrix: WW							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	360		1.2	mg/L		07-AUG-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		07-AUG-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		07-AUG-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	295		1.0	mg/L		03-AUG-18	R4159770
Ammonia by colour							
Ammonia, Total (as N)	41.3		1.0	mg/L		08-AUG-18	R4161955
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	46		20	mg/L		02-AUG-18	R4160693
Carbonaceous BOD							
BOD Carbonaceous	20		20	mg/L		02-AUG-18	R4160693
Chloride in Water by IC							
Chloride (Cl)	58.3		1.0	mg/L		03-AUG-18	R4160847
Conductivity							
Conductivity	817		1.0	umhos/cm		03-AUG-18	R4159770
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	1650		10	MPN/100mL		02-AUG-18	R4157447
Hardness Calculated							
Hardness (as CaCO3)	137	HTC	0.20	mg/L		14-AUG-18	
Mercury Total							
Mercury (Hg)-Total	0.0000090		0.0000050	mg/L	02-AUG-18	08-AUG-18	R4161347
Nitrate in Water by IC							
Nitrate (as N)	<0.040	DLM	0.040	mg/L		03-AUG-18	R4160847
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		08-AUG-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		03-AUG-18	R4160847
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		13-AUG-18	R4168158

* 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
L2140441-3 COR-3							
Sampled By: CASEY							
Matrix: WW							
Phenol (4AAP)							
Phenols (4AAP)	0.0155		0.0010	mg/L		07-AUG-18	R4161179
Phosphorus, Total							
Phosphorus (P)-Total	8.40		0.010	mg/L		13-AUG-18	R4168097
Sulfate in Water by IC							
Sulfate (SO4)	24.1		0.60	mg/L		03-AUG-18	R4160847
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0968		0.0030	mg/L	13-AUG-18	13-AUG-18	R4168412
Arsenic (As)-Total	0.00105		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Cadmium (Cd)-Total	0.0000242		0.0000050	mg/L	13-AUG-18	13-AUG-18	R4168412
Calcium (Ca)-Total	46.3		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Chromium (Cr)-Total	0.00063		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Cobalt (Co)-Total	0.00061		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Copper (Cu)-Total	0.0117		0.00050	mg/L	13-AUG-18	13-AUG-18	R4168412
Iron (Fe)-Total	0.415		0.010	mg/L	13-AUG-18	13-AUG-18	R4168412
Lead (Pb)-Total	0.000263		0.000050	mg/L	13-AUG-18	13-AUG-18	R4168412
Magnesium (Mg)-Total	5.20		0.0050	mg/L	13-AUG-18	13-AUG-18	R4168412
Manganese (Mn)-Total	0.0586		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Nickel (Ni)-Total	0.00362		0.00050	mg/L	13-AUG-18	13-AUG-18	R4168412
Potassium (K)-Total	19.8		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Sodium (Na)-Total	52.5		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Zinc (Zn)-Total	0.0162		0.0030	mg/L	13-AUG-18	13-AUG-18	R4168412
Total Organic Carbon by Combustion							
Total Organic Carbon	50.7		0.50	mg/L		17-AUG-18	R4178039
Total Suspended Solids							
Total Suspended Solids	46.3		2.0	mg/L		08-AUG-18	R4161989
pH							
pH	7.35		0.10	pH units		03-AUG-18	R4159770
L2140441-4 COR-4							
Sampled By: CASEY							
Matrix: WW							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	371		1.2	mg/L		07-AUG-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		07-AUG-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		07-AUG-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	304		1.0	mg/L		03-AUG-18	R4159770
Ammonia by colour							
Ammonia, Total (as N)	5.12		0.20	mg/L		04-AUG-18	R4159352
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	139	BODP	20	mg/L		02-AUG-18	R4160693
Carbonaceous BOD							
BOD Carbonaceous	71		20	mg/L		02-AUG-18	R4160693
Chloride in Water by IC							
Chloride (Cl)	38.6		0.50	mg/L		03-AUG-18	R4160847
Conductivity							
Conductivity	646		1.0	umhos/cm		03-AUG-18	R4159770
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	20		10	MPN/100mL		02-AUG-18	R4157447

* 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
L2140441-4 COR-4							
Sampled By: CASEY							
Matrix: WW							
Hardness Calculated							
Hardness (as CaCO3)	230	HTC	0.20	mg/L		14-AUG-18	
Mercury Total							
Mercury (Hg)-Total	0.0000070		0.0000050	mg/L	02-AUG-18	08-AUG-18	R4161347
Nitrate in Water by IC							
Nitrate (as N)	0.159		0.020	mg/L		03-AUG-18	R4160847
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.190		0.070	mg/L		08-AUG-18	
Nitrite in Water by IC							
Nitrite (as N)	0.032		0.010	mg/L		03-AUG-18	R4160847
Oil & Grease - Gravimetric							
Oil and Grease	12.7		5.0	mg/L		13-AUG-18	R4168158
Phenol (4AAP)							
Phenols (4AAP)	0.0126		0.0010	mg/L		07-AUG-18	R4161179
Phosphorus, Total							
Phosphorus (P)-Total	5.54		0.010	mg/L		13-AUG-18	R4168097
Sulfate in Water by IC							
Sulfate (SO4)	4.20		0.30	mg/L		03-AUG-18	R4160847
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0665		0.0030	mg/L	13-AUG-18	13-AUG-18	R4168412
Arsenic (As)-Total	0.00309		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Cadmium (Cd)-Total	0.0000921		0.0000050	mg/L	13-AUG-18	13-AUG-18	R4168412
Calcium (Ca)-Total	80.8		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Chromium (Cr)-Total	0.00050		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Cobalt (Co)-Total	0.00343		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Copper (Cu)-Total	0.00704		0.00050	mg/L	13-AUG-18	13-AUG-18	R4168412
Iron (Fe)-Total	1.28		0.010	mg/L	13-AUG-18	13-AUG-18	R4168412
Lead (Pb)-Total	0.000338		0.000050	mg/L	13-AUG-18	13-AUG-18	R4168412
Magnesium (Mg)-Total	6.75		0.0050	mg/L	13-AUG-18	13-AUG-18	R4168412
Manganese (Mn)-Total	0.136		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Nickel (Ni)-Total	0.00841		0.00050	mg/L	13-AUG-18	13-AUG-18	R4168412
Potassium (K)-Total	11.7		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Sodium (Na)-Total	40.3		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Zinc (Zn)-Total	0.0065		0.0030	mg/L	13-AUG-18	13-AUG-18	R4168412
Total Organic Carbon by Combustion							
Total Organic Carbon	73.0		5.0	mg/L		21-AUG-18	R4180330
Total Suspended Solids							
Total Suspended Solids	845		6.0	mg/L		08-AUG-18	R4161989
pH							
pH	7.40		0.10	pH units		03-AUG-18	R4159770
L2140441-5 COR-5							
Sampled By: CASEY							
Matrix: WW							
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Acenaphthene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Acenaphthylene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Anthracene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Acridine	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(a)anthracene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	03-AUG-18	08-AUG-18	R4166934

* 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
L2140441-5 COR-5							
Sampled By: CASEY							
Matrix: WW							
Polyaromatic Hydrocarbons (PAHs)							
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Chrysene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Fluoranthene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Fluorene	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Naphthalene	<0.000050		0.000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Phenanthrene	<0.000050		0.000050	mg/L	03-AUG-18	08-AUG-18	R4166934
Pyrene	<0.000010		0.000010	mg/L	03-AUG-18	08-AUG-18	R4166934
Quinoline	<0.000020		0.000020	mg/L	03-AUG-18	08-AUG-18	R4166934
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	03-AUG-18	08-AUG-18	R4166934
Surrogate: Acenaphthene d10	76.3		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Acridine d9	73.9		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Chrysene d12	85.1		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Naphthalene d8	70.8		40-130	%	03-AUG-18	08-AUG-18	R4166934
Surrogate: Phenanthrene d10	77.2		40-130	%	03-AUG-18	08-AUG-18	R4166934
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	128		1.2	mg/L		07-AUG-18	
Alkalinity, Carbonate							
Carbonate (CO3)	4.92		0.60	mg/L		07-AUG-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		07-AUG-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	113		1.0	mg/L		03-AUG-18	R4159770
Ammonia by colour							
Ammonia, Total (as N)	0.045		0.010	mg/L		03-AUG-18	R4159352
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		02-AUG-18	R4160693
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		02-AUG-18	R4160693
Chloride in Water by IC							
Chloride (Cl)	39.9		0.50	mg/L		03-AUG-18	R4160847
Conductivity							
Conductivity	472		1.0	umhos/cm		03-AUG-18	R4159770
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10		10	MPN/100mL		02-AUG-18	R4157447
Hardness Calculated							
Hardness (as CaCO3)	150	HTC	0.20	mg/L		14-AUG-18	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	02-AUG-18	08-AUG-18	R4161347
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		03-AUG-18	R4160847
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		08-AUG-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		03-AUG-18	R4160847
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		13-AUG-18	R4168158
Phenol (4AAP)							

* 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
L2140441-5 COR-5							
Sampled By: CASEY							
Matrix: WW							
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		07-AUG-18	R4161179
Phosphorus, Total							
Phosphorus (P)-Total	0.100		0.0010	mg/L		13-AUG-18	R4168097
Sulfate in Water by IC							
Sulfate (SO4)	71.4		0.30	mg/L		03-AUG-18	R4160847
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0087		0.0030	mg/L	13-AUG-18	13-AUG-18	R4168412
Arsenic (As)-Total	0.00084		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Cadmium (Cd)-Total	0.0000089		0.0000050	mg/L	13-AUG-18	13-AUG-18	R4168412
Calcium (Ca)-Total	44.1		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Chromium (Cr)-Total	0.00050		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Cobalt (Co)-Total	0.00028		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Copper (Cu)-Total	0.00135		0.00050	mg/L	13-AUG-18	13-AUG-18	R4168412
Iron (Fe)-Total	0.103		0.010	mg/L	13-AUG-18	13-AUG-18	R4168412
Lead (Pb)-Total	<0.000050		0.000050	mg/L	13-AUG-18	13-AUG-18	R4168412
Magnesium (Mg)-Total	9.60		0.0050	mg/L	13-AUG-18	13-AUG-18	R4168412
Manganese (Mn)-Total	0.00590		0.00010	mg/L	13-AUG-18	13-AUG-18	R4168412
Nickel (Ni)-Total	0.00207		0.00050	mg/L	13-AUG-18	13-AUG-18	R4168412
Potassium (K)-Total	9.09		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Sodium (Na)-Total	39.8		0.050	mg/L	13-AUG-18	13-AUG-18	R4168412
Zinc (Zn)-Total	0.0044		0.0030	mg/L	13-AUG-18	13-AUG-18	R4168412
Total Organic Carbon by Combustion							
Total Organic Carbon	20.1		0.50	mg/L		17-AUG-18	R4178039
Total Suspended Solids							
Total Suspended Solids	<2.0		2.0	mg/L		08-AUG-18	R4161989
pH							
pH	8.56		0.10	pH units		03-AUG-18	R4159770

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
BODP	BOD dilution results differed by more than 30% RPD. Precision of reported BOD result may be less than usual.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DUPM	MPN duplicate results were outside default ALS Data Quality Objective, but within 95% confidence interval for MPN reference method. Sample results are reliable.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

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.

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-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

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

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous 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.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2140441-COFC

COC Number: 14 - 503397

Page ____ of ____

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Hamlet of Coral Harbour	Select Report Format:	☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3pm)
Contact:	Leonie Pameolik	Quality Control (QC) Report with Report	☑ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:	PO Box 30 Coral Harbour Nu X0C 0C0	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution:	☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:	(867) 9258867	Email 1 or Fax		Specify Date Required for E2,E or P:
		Email 2		

Invoice To		Invoice Distribution	
	Same as Report To ☑ Yes ☐ No	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
	Copy of Invoice with Report ☐ Yes ☐ No	Email 1 or Fax	munch@giniq.com
Company:	Coral Harbour Monitoring Program	Email 2	
Contact:			

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

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	Bod-wp	Routine	TSS	NH3-Colimp	FC-QF97-wp	OG-Calm-wp	PHE,NO,LS-Hap	Hg-T-CVAF-wp	C-Toc-HTC-wp	BTX,F1-F4-HSHC	PAH,PANH-wp			Number of Containers
	Cor-7			WW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			14
	Cor-6			↓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			14
	Cor-3				✓	✓	✓	✓	✓	✓	✓	✓						
	Cor-4				✓	✓	✓	✓	✓	✓	✓	✓						
	Cor-5			✓	✓	✓	✓	✓	✓	✓	✓	✓						
				leachet														

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

SAMPLE CONDITION AS RECEIVED (lab use only)

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

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
					10.2

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Casey	Date: July 31/18	Time: 300	Received by:	Date:	Time:	Received by:	AUG 02 2018	1245

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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**.

Appendix E

Spills

Occurance Date

Start date

Jan | 1 | 2018

End date

Dec | 31 | 2018

Spill Region

- Any -

Spill Location

--Coral Harbour

Spill Location Description

Report Number

Items per page

100

Go | Reset

Spill	Occurance Date	Spill Region	Location	Location Description	Product Spilled	Quantity	Spill Cause	Lead Agency
spill-2018399	September 22, 2018	Keewatin	Coral Harbour, Community, Nunavut		Petroleum - fuel oil (jet A, diesel, turbo A, heat)	205.00	Breakage	GN - Government of Nunavut

Displaying 1 - 1 of 1

Appendix F

Coral Harbour
COR-3

			2018		Statistics		
Parameter	**Unit**	**DL**	**11-Jul-18**	**31-Jul-18**	**Min**	**Max**	**Average**
Alkalinity							
Bicarbonate (HCO3)	mg/L	1.2	385	360	92.8	438	300.38
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	316	295	76.1	359	255.65
Ammonia by Colour							
Total (as N)	mg/L	0.20	53.3	41.3	0.01	57.6	24.36
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	mg/L	6.0	94	46	3.9	180	68.81
Carbonaceous BOD							
BOD Carbonaceous	mg/L	6.0	80	20	2.8	190	60.42
Chloride in Water by IC							
Chloride (Cl)	mg/L	10	38.1	58.3	4.66	71.3	42.82
Conductivity							
Conductivity	umhos/cm	1.0	789	817	251	976	705.09
Fecal Coliforms							
Fecal Coliforms	MPN/100mL	3	>24200	1650	3	110000	14255.00
Hardness Calculated							
Hardness (as CaCO3)	mg/L	0.30	84.7	137	71.7	330	159.06
Mercury Total							
Mercury (Hg)	mg/L	0.00020	0.0000117	0.000009	0.000005	0.0002	0.00010
Nitrate in Water by IC							
Nitrate (as N)	mg/L	0.40	<0.040	<0.040	0.02	0.04	0.025
Nitrate + Nitrite							
Nitrate and Nitrite as N	mg/L	0.45	<0.070	<0.070	0.07	0.071	0.070
Nitrite in Water by IC							
Nitrite (as N)	mg/L	0.20	<0.020	<0.020	0.010	0.06	0.018
Oil & Grease - Gravimetric							
Oil and Grease	mg/L	5.0	5.9	<5.0	2	12	4.65
Phenol							
Phenols	mg/L	0.0010	0.063	0.0155	0.001	0.275	0.035
Phosphorus, Total							
Phosphorus (P)	mg/L	0.010	8.97	8.4	0.172	8.55	5.01
Sulfate in Water by IC							
Sulfate (SO4)	mg/L	6.0	1.68	24.1	3.6	193	36.38
Total Metals by ICP-MS							
Aluminium (Al)	mg/L	0.0050	0.0660	0.0968	0.005	0.155	0.076
Arsenic (As)	mg/L	0.00020	0.00096	0.00105	0.00047	0.00104	0.00074
Cadmium (Cd)	mg/L	0.000010	0.0000457	0.0000242	0.0000074	0.000078	0.000025
Calcium (Ca)	mg/L	0.10	27.8	46.3	23.7	120	55.13
Chromium (Cr)	mg/L	0.0010	0.00045	0.00063	0.00037	0.001	0.0009
Cobalt (Co)	mg/L	0.00020	0.00064	0.00061	0.0002	0.00073	0.0005
Copper (Cu)	mg/L	0.00020	0.0330	0.0117	0.00083	0.0314	0.0112
Iron (Fe)	mg/L	0.010	0.448	0.415	0.1	1.22	0.53
Lead (Pb)	mg/L	0.000090	0.000528	0.000263	0.00009	0.000728	0.00038
Magnesium (Mg)	mg/L	0.010	3.72	5.2	3.06	7.24	5.20
Manganese (Mn)	mg/L	0.00030	0.0422	0.0586	0.00714	0.0867	0.058
Nickel (Ni)	mg/L	0.0020	0.00282	0.00362	0.002	0.00376	0.0030
Potassium (K)	mg/L	0.020	17.7	19.8	3.81	29.4	16.90
Sodium (Na)	mg/L	0.030	36.3	52.5	5.65	72.8	39.86
Zinc (Zn)	mg/L	0.0020	0.0259	0.0162	0.0022	0.0639	0.019
Total Organic Carbon by Combustion							
Total Organic Carbon	mg/L	0.50	68.6	50.7	6.1	94.3	50.57
Total Suspended Solids							
Total Suspended Solids	mg/L	13	49	46.3	5.0	695	121.85
pH							
pH	pH Units	0.10	7.19	7.35	7.08	8.05	7.51
Benzene	mg/L	0.00050	N/A	N/A	0	0	0.00
Toluene	mg/L	0.0010	N/A	N/A	0	0	0.00
Ethyl Benzene	mg/L	0.00050	N/A	N/A	0	0	0.00
o-Xylene	mg/L	0.00050	N/A	N/A	0	0	0.00
F1 (C6-C10)	mg/L	0.10	N/A	N/A	0	0	0.00
F2 (C10-C16)	mg/L	0.25	N/A	N/A	0	0	0.00
F3 (C16-C34)	mg/L	0.25	N/A	N/A	0	0	0.00
F4 (C34-C50)	mg/L	0.25	N/A	N/A	0	0	0.00
Total Hydrocarbons (C6-C50)	mg/L	0.44	N/A	N/A	0	0	0.00

Coral Harbour
COR-4

			2018		Statistics		
Parameter	**Unit**	**DL**	**11-Jul-18**	**31-Jul-18**	**Min**	**Max**	**Average**
Alkalinity							
Bicarbonate (HCO3)	mg/L	1.2	331	371	79.1	382	262.76
Carbonate (CO3)	mg/L	0.60	<0.60	<0.60	0.60	6.48	1.34
Hydroxide (OH)	mg/L	0.34	<0.34	<0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	271	304	64.8	313	218.31
Ammonia by Colour							
Total (as N)	mg/L	0.20	22.3	5.12	0.01	27.7	4.68
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	mg/L	6.0	34.5	139	2.9	25.6	9.23
Carbonaceous BOD							
BOD Carbonaceous	mg/L	6.0	20.0	71	2.0	21.3	6.85
Chloride in Water by IC							
Chloride (Cl)	mg/L	10	33.5	38.6	2.55	58.1	36.51
Conductivity							
Conductivity	umhos/cm	1.0	631	646	164	712	544.78
Fecal Coliforms							
Fecal Coliforms	MPN/100mL	3	660	20	3	2400	475.11
Hardness Calculated							
Hardness (as CaCO3)	mg/L	0.30	148	230	82.1	277	183.68
Mercury Total							
Mercury (Hg)	mg/L	0.00020	0.0000093	0.000007	0.0000052	0.0002	0.00010
Nitrate in Water by IC							
Nitrate (as N)	mg/L	0.40	<0.020	0.159	0.02	5.3	1.10
Nitrate + Nitrite							
Nitrate and Nitrite as N	mg/L	0.45	<0.070	0.19	0.07	5.38	1.08
Nitrite in Water by IC							
Nitrite (as N)	mg/L	0.20	<0.010	0.032	0.01	0.107	0.03
Oil & Grease - Gravimetric							
Oil and Grease	mg/L	5.0	<5.0	12.7	2.0	5.1	3.34
Phenol							
Phenols	mg/L	0.0010	0.0151	0.0126	0.001	0.0102	0.0028
Phosphorus, Total							
Phosphorus (P)	mg/L	0.010	4.06	5.54	0.104	4.56	0.94
Sulfate in Water by IC							
Sulfate (SO4)	mg/L	6.0	5.43	4.2	3.14	49	18.07
Total Metals by ICP-MS							
Aluminium (Al)	mg/L	0.0050	0.0342	0.0665	0.0079	0.123	0.06
Arsenic (As)	mg/L	0.00020	0.00234	0.00309	0.00034	0.00171	0.00104
Cadmium (Cd)	mg/L	0.000010	0.0000695	0.0000921	0.00001	0.000125	0.000046
Calcium (Ca)	mg/L	0.10	52.7	80.8	30.5	101	63.93
Chromium (Cr)	mg/L	0.0010	0.00041	0.0005	0.001	0.001	0.0010
Cobalt (Co)	mg/L	0.00020	0.00214	0.00343	0.0002	0.00165	0.0009
Copper (Cu)	mg/L	0.00020	0.0151	0.00704	0.00172	0.0169	0.006
Iron (Fe)	mg/L	0.010	0.849	1.28	0.14	1.53	0.59
Lead (Pb)	mg/L	0.000090	0.000366	0.000338	0.00009	0.000583	0.00034
Magnesium (Mg)	mg/L	0.010	4.04	6.75	1.46	11.2	5.89
Manganese (Mn)	mg/L	0.00030	0.133	0.136	0.0407	0.173	0.08
Nickel (Ni)	mg/L	0.0020	0.00486	0.00841	0.002	0.0054	0.0036
Potassium (K)	mg/L	0.020	14.0	11.7	2.18	27	13.23
Sodium (Na)	mg/L	0.030	31.5	40.3	2.27	69.1	38.16
Zinc (Zn)	mg/L	0.0020	0.0106	0.0065	0.0024	0.0524	0.0134
Total Organic Carbon by Combustion							
Total Organic Carbon	mg/L	0.50	32.8	73	4.4	28.5	18.53
Total Suspended Solids							
Total Suspended Solids	mg/L	13	17	845	5.0	67	16.89
pH							
pH	pH Units	0.10	7.40	7.4	7.3	8.4	7.94
Benzene	mg/L	0.00050	N/A	N/A	0	0	0.00
Toluene	mg/L	0.0010	N/A	N/A	0	0	0.00
Ethyl Benzene	mg/L	0.00050	N/A	N/A	0	0	0.00
o-Xylene	mg/L	0.00050	N/A	N/A	0	0	0.00
F1 (C6-C10)	mg/L	0.10	N/A	N/A	0	0	0.00
F2 (C10-C16)	mg/L	0.25	N/A	N/A	0	0	0.00
F3 (C16-C34)	mg/L	0.25	N/A	N/A	0	0	0.00
F4 (C34-C50)	mg/L	0.25	N/A	N/A	0	0	0.00
Total Hydrocarbons (C6-C50)	mg/L	0.44	N/A	N/A	0	0	0.00

Coral Harbour
COR-5

			2018		Statistics		
Parameter	**Unit**	**DL**	**11-Jul-18**	**31-Jul-18**	**Min**	**Max**	**Average**
Alkalinity							
Bicarbonate (HCO3)	mg/L	1.2	239	128	235	341	291.5
Carbonate (CO3)	mg/L	0.60	<0.60	4.92	0.60	12.8	3.853333
Hydroxide (OH)	mg/L	0.34	<0.34	<0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	196	113	214	280	244.6667
Ammonia by Colour							
Total (as N)	mg/L	0.20	0.045	0.045	0.018	16.9	3.25
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	mg/L	6.0	12.4	<2.0	2.0	107	25.38333
Carbonaceous BOD							
BOD Carbonaceous	mg/L	6.0	8.3	<2.0	2.0	74	17.13333
Chloride in Water by IC							
Chloride (Cl)	mg/L	10	25.5	39.9	35.6	53.2	42.93333
Conductivity							
Conductivity	umhos/cm	1.0	439	472	492	679	598.1667
Fecal Coliforms							
Fecal Coliforms	MPN/100mL	3	750	<10	3	150	45
Hardness Calculated							
Hardness (as CaCO3)	mg/L	0.30	153	150	144	260	203.8333
Mercury Total							
Mercury (Hg)	mg/L	0.00020	<0.0000050	<0.0000050	0.000005	0.0002	4.52E-05
Nitrate in Water by IC							
Nitrate (as N)	mg/L	0.40	<0.020	<0.020	0.02	2.7	1.103
Nitrate + Nitrite							
Nitrate and Nitrite as N	mg/L	0.45	<0.070	<0.070	0.07	2.82	1.189333
Nitrite in Water by IC							
Nitrite (as N)	mg/L	0.20	<0.010	<0.010	0.01	0.319	0.089333
Oil & Grease - Gravimetric							
Oil and Grease	mg/L	5.0	<5.0	<5.0	2.0	7.5	4.916667
Phenol							
Phenols	mg/L	0.0010	<0.0010	<0.0010	0.001	0.035	0.007167
Phosphorus, Total							
Phosphorus (P)	mg/L	0.010	1.02	0.1	0.102	2.78	0.8965
Sulfate in Water by IC							
Sulfate (SO4)	mg/L	6.0	6.61	71.4	3.62	20.2	11.74333
Total Metals by ICP-MS							
Aluminium (Al)	mg/L	0.0050	0.0233	0.0087	0.0079	0.0491	0.021933
Arsenic (As)	mg/L	0.00020	0.00079	0.00084	0.00037	0.0014	0.000803
Cadmium (Cd)	mg/L	0.000010	0.0000192	0.0000089	0.000034	0.000123	7.71E-05
Calcium (Ca)	mg/L	0.10	54.6	44.1	51.2	90.6	71.5
Chromium (Cr)	mg/L	0.0010	0.00016	0.0005	0.0003	0.001	0.000883
Cobalt (Co)	mg/L	0.00020	0.00055	0.00028	0.00108	0.00195	0.001452
Copper (Cu)	mg/L	0.00020	0.00324	0.00135	0.00262	0.0127	0.006637
Iron (Fe)	mg/L	0.010	0.580	0.103	0.039	0.504	0.1395
Lead (Pb)	mg/L	0.000090	0.000077	<0.000050	0.00009	0.000309	0.000134
Magnesium (Mg)	mg/L	0.010	4.02	9.6	3.96	8.17	6.123333
Manganese (Mn)	mg/L	0.00030	0.0179	0.0059	0.0109	0.121	0.057
Nickel (Ni)	mg/L	0.0020	0.00286	0.00207	0.0029	0.00658	0.005213
Potassium (K)	mg/L	0.020	4.68	9.09	5.04	15.8	8.535
Sodium (Na)	mg/L	0.030	29.1	39.8	39.2	57.1	48.86667
Zinc (Zn)	mg/L	0.0020	0.0049	0.0044	0.0028	0.014	0.006567
Total Organic Carbon by Combustion							
Total Organic Carbon	mg/L	0.50	20.1	20.1	12.5	18.1	15.88333
Total Suspended Solids							
Total Suspended Solids	mg/L	13	6.0	<2.0	5.0	85	26.5
pH							
pH	pH Units	0.10	8.28	8.56	7.65	8.65	8.078333
Benzene	mg/L	0.00050	N/A	N/A	0	0	0
Toluene	mg/L	0.0010	N/A	N/A	0	0	0
Ethyl Benzene	mg/L	0.00050	N/A	N/A	0	0	0
o-Xylene	mg/L	0.00050	N/A	N/A	0	0	0
F1 (C6-C10)	mg/L	0.10	N/A	N/A	0	0	0
F2 (C10-C16)	mg/L	0.25	N/A	N/A	0	0	0
F3 (C16-C34)	mg/L	0.25	N/A	N/A	0	0	0
F4 (C34-C50)	mg/L	0.25	N/A	N/A	0	0	0
Total Hydrocarbons (C6-C50)	mg/L	0.44	N/A	N/A	0	0	0

Coral Harbour
COR-6

			2018		Statistics		
Parameter	**Unit**	**DL**	**11-Jul-18**	**31-Jul-18**	**Min**	**Max**	**Average**
Alkalinity							
Bicarbonate (HCO3)	mg/L	1.2	211	215	189	610	351.56
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	173	177	132	500	270.64
Ammonia by Colour							
Total (as N)	mg/L	0.20	0.022	0.058	0.02	48	9.35
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	mg/L	6.0	7.3	3.8	4.4	114	24.69
Carbonaceous BOD							
BOD Carbonaceous	mg/L	6.0	3.7	2.3	4.9	100	22.64
Chloride in Water by IC							
Chloride (Cl)	mg/L	10	17.3	39.4	24.5	129	67.15
Conductivity							
Conductivity	umhos/cm	1.0	423	734	385	1630	884.18
Fecal Coliforms							
Fecal Coliforms	MPN/100mL	3	170	140	4	110000	13819.90
Hardness Calculated							
Hardness (as CaCO3)	mg/L	0.30	183	292	100	484	283.18
Mercury Total							
Mercury (Hg)	mg/L	0.00020	<0.0000050	0.000006	0.000005	0.0008	0.00015
Nitrate in Water by IC							
Nitrate (as N)	mg/L	0.40	<0.020	<0.020	0.02	0.10	0.04
Nitrate + Nitrite							
Nitrate and Nitrite as N	mg/L	0.45	<0.070	<0.070	0.07	0.11	0.07
Nitrite in Water by IC							
Nitrite (as N)	mg/L	0.20	<0.010	<0.010	0.01	0.05	0.02
Oil & Grease - Gravimetric							
Oil and Grease	mg/L	5.0	<5.0	<5.0	2.0	7.0	4.36
Phenol							
Phenols	mg/L	0.0010	0.0010	<0.0010	0.001	0.04	0.009
Phosphorus, Total							
Phosphorus (P)	mg/L	0.010	0.209	0.159	0.125	9.32	2.24
Sulfate in Water by IC							
Sulfate (SO4)	mg/L	6.0	33.0	161	5.33	224	103.51
Total Metals by ICP-MS							
Aluminium (Al)	mg/L	0.0050	0.126	0.119	0.031	0.192	0.10
Arsenic (As)	mg/L	0.00020	0.00071	0.00126	0.00075	0.00235	0.00144
Cadmium (Cd)	mg/L	0.000010	0.0000096	0.0000124	0.0000054	0.0002	0.000038
Calcium (Ca)	mg/L	0.10	61.7	87.4	32.6	155	88.73
Chromium (Cr)	mg/L	0.0010	0.00040	0.00045	0.00062	0.002	0.0010
Cobalt (Co)	mg/L	0.00020	0.00016	0.00022	0.0002	0.00064	0.00036
Copper (Cu)	mg/L	0.00020	0.00152	0.00199	0.00084	0.0322	0.007
Iron (Fe)	mg/L	0.010	0.591	0.359	0.36	1.72	0.82
Lead (Pb)	mg/L	0.000090	0.000355	0.000283	0.000123	0.0017	0.0006
Magnesium (Mg)	mg/L	0.010	6.94	17.9	4.58	27.4	14.96
Manganese (Mn)	mg/L	0.00030	0.0665	0.0465	0.048	0.316	0.12
Nickel (Ni)	mg/L	0.0020	0.00096	0.00169	0.002	0.0032	0.0025
Potassium (K)	mg/L	0.020	5.38	14.2	6.93	35.2	20.47
Sodium (Na)	mg/L	0.030	16.2	41.6	19.3	84.1	54.95
Zinc (Zn)	mg/L	0.0020	0.0192	0.00169	0.0033	0.039	0.011
Total Organic Carbon by Combustion							
Total Organic Carbon	mg/L	0.50	14.9	24.6	16.2	87.1	40.39
Total Suspended Solids							
Total Suspended Solids	mg/L	13	13.7	5.7	8.0	57	31.36
pH							
pH	pH Units	0.10	8.13	8.09	7.41	8.23	7.79
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	0.0231	0.00321
Ethyl Benzene	mg/L	0.00050	<0.00050	<0.00050	0.00050	0.0005	0.00050
o-Xylene	mg/L	0.00050	<0.00050	<0.00050	0.00050	0.0005	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	<0.10	<0.10	0.10	0.80	0.21
F3 (C16-C34)	mg/L	0.25	<0.25	<0.25	0.25	4.62	0.79
F4 (C34-C50)	mg/L	0.25	<0.25	<0.25	0.25	1.09	0.34
Total Hydrocarbons (C6-C50)	mg/L	0.44	<0.38	<0.38	0.38	6.51	1.09

Coral Harbour
COR-7

			2018		Statistics		
Parameter	**Unit**	**DL**	**11-Jul-18**	**31-Jul-18**	**Min**	**Max**	**Average**
Alkalinity							
Bicarbonate (HCO3)	mg/L	1.2	164	85.5	74.1	372	201.97
Carbonate (CO3)	mg/L	0.60	<0.60	4.68	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	135	77.9	60.7	305	165.63
Ammonia by Colour							
Total (as N)	mg/L	0.20	0.075	0.031	0.022	0.205	0.09
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	mg/L	6.0	2.6	<2.0	2.0	20	5.23
Carbonaceous BOD							
BOD Carbonaceous	mg/L	6.0	<2.0	<2.0	2.0	20	5.01
Chloride in Water by IC							
Chloride (Cl)	mg/L	10	4.68	5.78	3.59	10.3	7.03
Conductivity							
Conductivity	umhos/cm	1.0	493	743	380	1200	888.14
Fecal Coliforms							
Fecal Coliforms	MPN/100mL	3	<10	30	3	240	64.14
Hardness Calculated							
Hardness (as CaCO3)	mg/L	0.30	242	398	208	900	527.57
Mercury Total							
Mercury (Hg)	mg/L	0.00020	<0.0000050	<0.0000050	0.000005	0.0002	0.00004
Nitrate in Water by IC							
Nitrate (as N)	mg/L	0.40	0.116	<0.020	0.02	0.068	0.05
Nitrate + Nitrite							
Nitrate and Nitrite as N	mg/L	0.45	0.116	<0.070	0.070	0.070	0.070
Nitrite in Water by IC							
Nitrite (as N)	mg/L	0.20	<0.010	<0.010	0.010	0.020	0.013
Oil & Grease - Gravimetric							
Oil and Grease	mg/L	5.0	<5.0	<5.0	2.0	5.0	4.57
Phenol							
Phenols	mg/L	0.0010	<0.0010	<0.0010	0.001	0.0034	0.0021
Phosphorus, Total							
Phosphorus (P)	mg/L	0.010	0.102	0.0713	0.075	0.66	0.21
Sulfate in Water by IC							
Sulfate (SO4)	mg/L	6.0	117	298	105	526	351.14
Total Metals by ICP-MS							
Aluminium (Al)	mg/L	0.0050	0.0197	0.0438	0.0112	0.288	0.0638
Arsenic (As)	mg/L	0.00020	0.00044	0.0005	0.00047	0.00107	0.00063
Cadmium (Cd)	mg/L	0.000010	0.0000234	0.0000236	0.000014	9.15E-05	0.00004
Calcium (Ca)	mg/L	0.10	89.4	145	77.1	330	194.30
Chromium (Cr)	mg/L	0.0010	0.00040	0.00046	0.00041	0.00136	0.00097
Cobalt (Co)	mg/L	0.00020	0.00028	0.00027	0.00026	0.00058	0.00040
Copper (Cu)	mg/L	0.00020	0.00389	0.005	0.0028	0.00702	0.0052
Iron (Fe)	mg/L	0.010	0.919	0.753	0.805	6.01	2.00
Lead (Pb)	mg/L	0.000090	0.000343	0.000463	0.000159	0.00145	0.0007
Magnesium (Mg)	mg/L	0.010	4.46	8.64	3.65	18.5	10.36
Manganese (Mn)	mg/L	0.00030	0.0428	0.0229	0.0285	0.418	0.1182
Nickel (Ni)	mg/L	0.0020	0.00203	0.00257	0.002	0.004	0.0031
Potassium (K)	mg/L	0.020	3.97	5.41	3.36	13	8.13
Sodium (Na)	mg/L	0.030	6.25	11	4.67	22.8	13.37
Zinc (Zn)	mg/L	0.0020	0.0379	0.0526	0.0237	0.0831	0.06
Total Organic Carbon by Combustion							
Total Organic Carbon	mg/L	0.50	20.1	25.5	12.9	45.8	26.13
Total Suspended Solids							
Total Suspended Solids	mg/L	13	<2.0	2.1	5.0	76.0	17.43
pH							
pH	pH Units	0.10	7.78	8.49	7.37	8.08	7.80
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	<0.00040	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	<0.10	<0.10	0.10	0.25	0.12
F3 (C16-C34)	mg/L	0.25	<0.25	<0.25	0.25	0.33	0.26
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	<0.38	<0.38	0.38	0.44	0.39

Appendix G

WATER LICENCE INSPECTION FORM

☒ **Original**
☐ **Follow-Up Report**

Licensee	**Licensee Representative**
Hamlet of Coral Harbour	Leonie Pameolik
Licence No. / Expiry	**Representative's Title**
3BM-COR1521/ April 24, 2021	Senior Administrative Officer
Land / Other Authorizations	**Land / Other Authorizations**
--	--
Date of Inspection	**Inspector**
July 31st 2018	Atuat Shouldice

Activities Inspected

☐ Camp ☐ Drilling ☐ Mining ☐ Construction ☐ Reclamation ☐ Fuel Storage
☐ Roads/Hauling ☒ Other: Waste Disposal Facility ☒ Other: Water Treatment Facility

Conditions: A- Acceptable U-Unacceptable C-Concern NI-Not Inspected NA- Not applicable

PART:	**Item No.***	**Condition**	**Observation No.***
A: SCOPE, DEFINITIONS AND ENFORCEMENT	--	--	--
B: GENERAL CONDITIONS	1,6	U,A	1,2
C: CONDITIONS APPLYING TO WATER USE	2	A	3
D: CONDITIONS APPLYING TO WASTE DISPOSAL	1,5,9	A,U,A	5,6,7
E: CONDITIONS APPLYING TO MODIFICATIONS AND CONSTRUCTION	--	--	--
F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE	--	--	--
G: CONDITIONS APPLYING TO ABANDONMENT AND RECLAMATION	3,4,5	NA	8
H: CONDITIONS APPLYING TO MONITORING PROGRAM	--	--	--

**The item number corresponds with specific conditions within the licence and the observation number corresponds with specific comments provided below.*

Samples taken by Inspector:	Location(s):
☒ Yes ☐ No	

SECTION 1 ☒ **Comments** (s._1_) ☐ **Non-Compliance with Act or Licence** (s.__) ☐ **Action Required** (s.__)

BACKGROUND

The Hamlet of Coral Harbour is located on the South shore of Southampton Island at N64° 08', W83° 10', within the Kivalliq region of Nunavut.

Inspector's Statement

On July 31st, 2018, a water licence inspection was conducted of water licence no. 3BM-COR1521 issued to the Hamlet for the use of water and deposit of waste as it relates to municipal undertakings.

Observation

1. The 2016 and 2018 annual reports are not available for review on the Nunavut Water Board's FTP website.
2. Appropriate signage is not observed at the monitoring station, as required by PART B item 6.
3. Fresh water is obtained from Post River, as required by PART C item 2.
4. The Hamlet is allotted 45,000 m^3 of fresh water annually or 299m^3 per day. The 2017 annual report indicates that a total of 37,933, 903.40 m^3 was used, which appears to be incorrect.
5. All sewage is directed to the Sewage Disposal Facility ('SDF').
6. The water levels in the SDF are extremely low. The inspector believes that there may be a seep from the berm wall directly adjacent to monitoring station no. COR-3.
7. The Hamlet segregates hazardous waste (e.g.: Oil, batteries, and Propane) and stores it in seacans with the intentions of shipping the materials south for appropriate treatment once funds is available.
8. The Old Waste Disposal Site by the airport was not inspected at this time.

SECTION 2 ☐ **Comments** ☒ **Non-Compliance with Act or Licence** ☐ **Action Required**

Concerns related to Water Licence no. 3BM-COR1521;

PART B item 3: Failure to file 2016 and 2018 Annual Reports

— *The Licensee shall submit the outstanding annual reports, as required, before the term of the next inspection.*

PART D item 5: Concerns related to the structural integrity of the Sewage Disposal Facility.

— *The Licensee is required to improve the berm wall directly adjacent to COR-3 at the Sewage Disposal Facility prior to the next inspection.*

SECTION 3	☐ Comments	☐ Non-Compliance with Act or Licence	☒ Action Required

The inspector is pleased with the efforts made by the Hamlet over the last three years at SWDF. The inspector noted that the community clean up initiative has made great progress since establishment.

Licensee or Representative	Inspector's Name
Leonie Pameolik	Atuat Shouldice
Signature	**Signature**
	Sent Electronically
Date	**Date**
	February 12th, 2018

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