ANNUAL REPORT
FOR THE HAMLET OF CORAL HARBOUR

YEAR BEING REPORTED: 2016

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	3,309,007.00	3,309,007.00
February	3,393,350.00	3,393,350.00
March	3,551,236.60	3,551,236.60
April	2,843,751.40	2,843,751.40
May	3,400,689.70	3,400,689.70
June	3,135,383.30	3,135,383.30
July	2,964,004.80	2,964,004.80
August	8,781,555.30	8,781,555.30
September	3,258,377.40	3,258,377.40
October	3,178,998.60	3,178,998.60
November	3,190,401.70	3,190,401.70
December	3,199,048.00	3,199,048.00
ANNUAL TOTAL	38,205,803.80	38,205,803.80

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;

- Construction for the new Water Treatment Plant was delayed; construction scheduled to begin summer 2016 and be completed by the end of 2016.
- No modifications and/or major work was carried out at the Solid Waste Site or the Sewage Treatment Facilities in 2015.
- Improved segregation is taking place at the Solid Waste Site. Batteries have been collected and are stored in battery boxes.

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

- Spills:
  - 2016152, 2016-05-04, Housing Unit 57, P50 Heating Fuel, 820L
  - 2016155, 2016-05-09, Public Housing Unit 201. Heating Fuel, 205L
  - 2016223, 2016-06-16, Coral Harbour, Nunavut, P50 Heating Fuel, 0L
  - 2016303, 2016-08-22, Coral Harbour, Unit 464, Heating Fuel, 0L

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

-

- No abandonment and restoration work took place in 2015.
- The existing Water Truck Fill Station will be demolished in 2016. The site will not be abandoned and restored because the new Water Treatment Plant will be constructed in the same location.

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;

- The Coral Harbour sewage wetlands was part of a study by Dalhousie University commissioned by GN-CGS. The *Summary of Site Specific Studies on Tundra Wetland Treatment Areas in Nunavut* report is submitted to the NWB with the Annual Report.

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

- Signage for the Monitoring Program Stations will be ordered over the winter for installation summer 2016. Pictures of the signage at Monitoring Program Stations

will be included in the 2016 Annual Report.

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

- The *Operations and Maintenance Manual for Water, Sewage and Solid Waste Facilities at Coral Harbour, NU* was prepared by Nunami Stantec, 2010 and is currently being reviewed; an updated version of the O&M Manual will be submitted to the NWB in 2016.

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- Licence 3BM-COR1521 was issued on April 24, 2015.
- The Hamlet is working with the Water Compliance Working Group to implement the Solid Waste Workplan goals.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

- The AANDC Inspection took place on August 11, 2015, no inspection report has been received to date.
- The following Monitoring Program Station locations were confirmed with the AANDC Inspector:

Monitoring Program Station Identification	Description	GPS Coordinates
COR-3	Effluent from Sewage Containment Cell	N64°09.790' W083°11.502'
COR-4	Station within the Wetland	N64°09.785' W083°11.326'
COR-5	Discharge from the Wetland (Compliance Point)	N64°09.718' W083°11.243'
COR-6	Run-off from the Solid Waste Disposal Facility	N64°09.722' W083°11.638
COR-7	Run-off below Waste Metals area.	N64°09.628' W083°11.541'

List of Appendixes:

Appendix A: COR-5 Effluent Quality Limits – 1 page
Appendix B: Weekly Inspections at Monitoring Stations – 1 page
Appendix C: Certificate of Analysis June 27, 2016 – 15 pages
Appendix D: Certificate of Analysis August 31, 2016 – 15 pages
Appendix E: Certificate of Analysis Sept 13, 2016 – 25 pages
Appendix F: Hazardous Materials Spill Database, Coral Harbour 2016 – 1 page

COR-5 Effluent Quality Limits

Parameter	Maximum Concentration of any Grab Sample
BOD_5	30 mg/L

Total Suspended Solids	30 mg/L
Faecal Coliforms	1×10^4 CFU/dl
Oil and grease	No visible sheen
PH	Between 6 and 9

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-May-16																
2	06-Jun-16																
3	13-Jun-16																
4	20-Jun-16																
5	27-Jun-16																
6	04-Jul-16																
7	11-Jul-16																
8	18-Jul-16																
9	25-Jul-16																
10	01-Aug-16																
11	08-Aug-16																
12	15-Aug-16																
13	22-Aug-16																
14	29-Aug-16																

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

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

Date Received: 04-JUL-16
Report Date: 13-JUL-16 09:50 (MT)
Version: FINAL

Client Phone: 867-925-8867

Certificate of Analysis

Lab Work Order #: L1792472

Project P.O. #: NOT SUBMITTED
Job Reference: CORAL HARBOUR MONITORING PROGRAM
C of C Numbers:
Legal Site Desc:

Craig Riddell, B.Sc.Ag
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1792472-1 COR-7							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		06-JUL-16	R3500992
Toluene	<0.0010		0.0010	mg/L		06-JUL-16	R3500992
Ethyl benzene	<0.00050		0.00050	mg/L		06-JUL-16	R3500992
o-Xylene	<0.00050		0.00050	mg/L		06-JUL-16	R3500992
m+p-Xylenes	<0.00050		0.00050	mg/L		06-JUL-16	R3500992
F1 (C6-C10)	<0.10		0.10	mg/L		06-JUL-16	R3500992
Surrogate: 4-Bromofluorobenzene (SS)	106.8		70-130	%		06-JUL-16	R3500992
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUL-16	05-JUL-16	R3496801
F3 (C16-C34)	<0.25		0.25	mg/L	05-JUL-16	05-JUL-16	R3496801
F4 (C34-C50)	<0.25		0.25	mg/L	05-JUL-16	05-JUL-16	R3496801
Surrogate: 2-Bromobenzotrifluoride	103.5		60-140	%	05-JUL-16	05-JUL-16	R3496801
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		11-JUL-16	
F2-Naphth	<0.10		0.10	mg/L		11-JUL-16	
F3-PAH	<0.25		0.25	mg/L		11-JUL-16	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		11-JUL-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.0015		0.0015	mg/L		11-JUL-16	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.000031		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
2-Methyl Naphthalene	0.000033		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Acenaphthene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Acenaphthylene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Anthracene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Acridine	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Benzo(a)anthracene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	07-JUL-16	07-JUL-16	R3498543
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Chrysene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	07-JUL-16	07-JUL-16	R3498543
Fluoranthene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Fluorene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Naphthalene	<0.000050		0.000050	mg/L	07-JUL-16	07-JUL-16	R3498543
Phenanthrene	<0.000050		0.000050	mg/L	07-JUL-16	07-JUL-16	R3498543
Pyrene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Quinoline	0.000042		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	07-JUL-16	07-JUL-16	R3498543
Surrogate: Acenaphthene d10	93.6		40-130	%	07-JUL-16	07-JUL-16	R3498543
Surrogate: Acridine d9	94.0		40-130	%	07-JUL-16	07-JUL-16	R3498543
Surrogate: Chrysene d12	95.1		40-130	%	07-JUL-16	07-JUL-16	R3498543
Surrogate: Naphthalene d8	98.7		40-130	%	07-JUL-16	07-JUL-16	R3498543
Surrogate: Phenanthrene d10	94.0		40-130	%	07-JUL-16	07-JUL-16	R3498543
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	99.7		1.2	mg/L		11-JUL-16	
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
L1792472-1 COR-7							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		11-JUL-16	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		11-JUL-16	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	81.7		1.0	mg/L		08-JUL-16	R3500300
Ammonia by colour							
Ammonia, Total (as N)	0.024		0.010	mg/L		05-JUL-16	R3497618
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	3.3		2.0	mg/L		04-JUL-16	R3501511
Carbonaceous BOD							
BOD Carbonaceous	2.8		2.0	mg/L		04-JUL-16	R3501511
Chloride in Water by IC							
Chloride (Cl)	3.59		0.50	mg/L		05-JUL-16	R3498700
Conductivity							
Conductivity	380		1.0	umhos/cm		08-JUL-16	R3500300
Fecal Coliform							
Fecal Coliforms	93	PEHR	3	MPN/100mL		04-JUL-16	R3500991
Hardness Calculated							
Hardness (as CaCO3)	208		0.30	mg/L		07-JUL-16	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	06-JUL-16	06-JUL-16	R3497926
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		05-JUL-16	R3498700
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		08-JUL-16	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		05-JUL-16	R3498700
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		05-JUL-16	R3497952
Phenol (4AAP)							
Phenols (4AAP)	0.0029		0.0010	mg/L		08-JUL-16	R3499262
Phosphorus, Total							
Phosphorus (P)-Total	0.179		0.010	mg/L		12-JUL-16	R3501903
Sulfate in Water by IC							
Sulfate (SO4)	105		0.30	mg/L		05-JUL-16	R3498700
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0283		0.0050	mg/L	06-JUL-16	06-JUL-16	R3497533
Arsenic (As)-Total	0.00047		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Cadmium (Cd)-Total	0.000084		0.000010	mg/L	06-JUL-16	06-JUL-16	R3497533
Calcium (Ca)-Total	77.1		0.10	mg/L	06-JUL-16	06-JUL-16	R3497533
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	06-JUL-16	06-JUL-16	R3497533
Cobalt (Co)-Total	0.00028		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Copper (Cu)-Total	0.00418		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Iron (Fe)-Total	0.952		0.010	mg/L	06-JUL-16	06-JUL-16	R3497533
Lead (Pb)-Total	0.000602		0.000090	mg/L	06-JUL-16	06-JUL-16	R3497533
Magnesium (Mg)-Total	3.65		0.010	mg/L	06-JUL-16	06-JUL-16	R3497533
Manganese (Mn)-Total	0.0778		0.00030	mg/L	06-JUL-16	06-JUL-16	R3497533
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	06-JUL-16	06-JUL-16	R3497533
Potassium (K)-Total	3.36		0.020	mg/L	06-JUL-16	06-JUL-16	R3497533
Sodium (Na)-Total	4.67		0.030	mg/L	06-JUL-16	06-JUL-16	R3497533
Zinc (Zn)-Total	0.0831		0.0020	mg/L	06-JUL-16	06-JUL-16	R3497533
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
L1792472-1 COR-7							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
Total Organic Carbon by Combustion							
Total Organic Carbon	12.9		0.50	mg/L		06-JUL-16	R3497572
Total Suspended Solids							
Total Suspended Solids	15.0		5.0	mg/L		04-JUL-16	R3496110
pH							
pH	7.60		0.10	pH units		08-JUL-16	R3500300
L1792472-2 COR-6							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		06-JUL-16	R3500992
Toluene	<0.0010		0.0010	mg/L		06-JUL-16	R3500992
Ethyl benzene	<0.00050		0.00050	mg/L		06-JUL-16	R3500992
o-Xylene	<0.00050		0.00050	mg/L		06-JUL-16	R3500992
m+p-Xylenes	<0.00050		0.00050	mg/L		06-JUL-16	R3500992
F1 (C6-C10)	<0.10		0.10	mg/L		06-JUL-16	R3500992
Surrogate: 4-Bromofluorobenzene (SS)	100.6		70-130	%		06-JUL-16	R3500992
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	05-JUL-16	05-JUL-16	R3496801
F3 (C16-C34)	0.33		0.25	mg/L	05-JUL-16	05-JUL-16	R3496801
F4 (C34-C50)	<0.25		0.25	mg/L	05-JUL-16	05-JUL-16	R3496801
Surrogate: 2-Bromobenzotrifluoride	105.7		60-140	%	05-JUL-16	05-JUL-16	R3496801
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		11-JUL-16	
F2-Naphth	<0.10		0.10	mg/L		11-JUL-16	
F3-PAH	0.33		0.25	mg/L		11-JUL-16	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		11-JUL-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.0015		0.0015	mg/L		11-JUL-16	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Acenaphthene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Acenaphthylene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Anthracene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Acridine	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Benzo(a)anthracene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	07-JUL-16	07-JUL-16	R3498543
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Chrysene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	07-JUL-16	07-JUL-16	R3498543
Fluoranthene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Fluorene	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Naphthalene	<0.000050		0.000050	mg/L	07-JUL-16	07-JUL-16	R3498543
Phenanthrene	<0.000050		0.000050	mg/L	07-JUL-16	07-JUL-16	R3498543
Pyrene	<0.000010		0.000010	mg/L	07-JUL-16	07-JUL-16	R3498543
Quinoline	<0.000020		0.000020	mg/L	07-JUL-16	07-JUL-16	R3498543

* 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
L1792472-2 COR-6							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
Polyaromatic Hydrocarbons (PAHs)							
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	07-JUL-16	07-JUL-16	R3498543
Surrogate: Acenaphthene d10	47.1		40-130	%	07-JUL-16	07-JUL-16	R3498543
Surrogate: Acridine d9	48.5		40-130	%	07-JUL-16	07-JUL-16	R3498543
Surrogate: Chrysene d12	46.0		40-130	%	07-JUL-16	07-JUL-16	R3498543
Surrogate: Naphthalene d8	48.9		40-130	%	07-JUL-16	07-JUL-16	R3498543
Surrogate: Phenanthrene d10	48.5		40-130	%	07-JUL-16	07-JUL-16	R3498543
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	199		1.2	mg/L		11-JUL-16	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		11-JUL-16	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		11-JUL-16	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	163		1.0	mg/L		08-JUL-16	R3500300
Ammonia by colour							
Ammonia, Total (as N)	0.025		0.010	mg/L		05-JUL-16	R3497618
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	9.0		2.0	mg/L		04-JUL-16	R3501511
Carbonaceous BOD							
BOD Carbonaceous	5.1		2.0	mg/L		04-JUL-16	R3501511
Chloride in Water by IC							
Chloride (Cl)	24.5		0.50	mg/L		05-JUL-16	R3498700
Conductivity							
Conductivity	460		1.0	umhos/cm		08-JUL-16	R3500300
Fecal Coliform							
Fecal Coliforms	4	PEHR	3	MPN/100mL		04-JUL-16	R3500991
Hardness Calculated							
Hardness (as CaCO3)	214		0.30	mg/L		07-JUL-16	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	06-JUL-16	06-JUL-16	R3497926
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		05-JUL-16	R3498700
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		08-JUL-16	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		05-JUL-16	R3498700
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		05-JUL-16	R3497952
Phenol (4AAP)							
Phenols (4AAP)	0.0032		0.0010	mg/L		08-JUL-16	R3499262
Phosphorus, Total							
Phosphorus (P)-Total	0.522		0.010	mg/L		12-JUL-16	R3501903
Sulfate in Water by IC							
Sulfate (SO4)	28.1		0.30	mg/L		05-JUL-16	R3498700
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0611		0.0050	mg/L	06-JUL-16	06-JUL-16	R3497533
Arsenic (As)-Total	0.00121		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	06-JUL-16	06-JUL-16	R3497533
Calcium (Ca)-Total	73.8		0.10	mg/L	06-JUL-16	06-JUL-16	R3497533
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	06-JUL-16	06-JUL-16	R3497533
Cobalt (Co)-Total	<0.00020		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533

* 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
L1792472-2 COR-6							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
Total Metals by ICP-MS							
Copper (Cu)-Total	0.00134		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Iron (Fe)-Total	1.12		0.010	mg/L	06-JUL-16	06-JUL-16	R3497533
Lead (Pb)-Total	0.000326		0.000090	mg/L	06-JUL-16	06-JUL-16	R3497533
Magnesium (Mg)-Total	7.09		0.010	mg/L	06-JUL-16	06-JUL-16	R3497533
Manganese (Mn)-Total	0.204		0.00030	mg/L	06-JUL-16	06-JUL-16	R3497533
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	06-JUL-16	06-JUL-16	R3497533
Potassium (K)-Total	6.93		0.020	mg/L	06-JUL-16	06-JUL-16	R3497533
Sodium (Na)-Total	19.3		0.030	mg/L	06-JUL-16	06-JUL-16	R3497533
Zinc (Zn)-Total	0.0038		0.0020	mg/L	06-JUL-16	06-JUL-16	R3497533
Total Organic Carbon by Combustion							
Total Organic Carbon	16.2		0.50	mg/L		06-JUL-16	R3497572
Total Suspended Solids							
Total Suspended Solids	50.0		5.0	mg/L		04-JUL-16	R3496110
pH							
pH	7.41		0.10	pH units		08-JUL-16	R3500300
L1792472-3 COR-3							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	284		1.2	mg/L		11-JUL-16	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		11-JUL-16	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		11-JUL-16	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	233		1.0	mg/L		08-JUL-16	R3500300
Ammonia by colour							
Ammonia, Total (as N)	45.1		1.0	mg/L		05-JUL-16	R3497618
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	> 150		20	mg/L		04-JUL-16	R3501511
Carbonaceous BOD							
BOD Carbonaceous	> 140		20	mg/L		04-JUL-16	R3501511
Chloride in Water by IC							
Chloride (Cl)	33.6		0.50	mg/L		05-JUL-16	R3498700
Conductivity							
Conductivity	644		1.0	umhos/cm		08-JUL-16	R3500300
Fecal Coliform							
Fecal Coliforms	110000	PEHR	3	MPN/100mL		04-JUL-16	R3500991
Hardness Calculated							
Hardness (as CaCO3)	71.7		0.30	mg/L		07-JUL-16	
Mercury Total							
Mercury (Hg)-Total	0.000020		0.000020	mg/L	06-JUL-16	06-JUL-16	R3497926
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		05-JUL-16	R3498700
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		08-JUL-16	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		05-JUL-16	R3498700
Oil & Grease - Gravimetric							
Oil and Grease	12.0		5.0	mg/L		05-JUL-16	R3497952

* 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
L1792472-3 COR-3							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
Phenol (4AAP)							
Phenols (4AAP)	0.275	DLHC	0.010	mg/L		09-JUL-16	R3501741
Phosphorus, Total							
Phosphorus (P)-Total	6.85		0.050	mg/L		12-JUL-16	R3501903
Sulfate in Water by IC							
Sulfate (SO4)	3.60		0.30	mg/L		05-JUL-16	R3498700
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0950		0.0050	mg/L	06-JUL-16	06-JUL-16	R3497533
Arsenic (As)-Total	0.00053		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Cadmium (Cd)-Total	0.000078		0.000010	mg/L	06-JUL-16	06-JUL-16	R3497533
Calcium (Ca)-Total	23.7		0.10	mg/L	06-JUL-16	06-JUL-16	R3497533
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	06-JUL-16	06-JUL-16	R3497533
Cobalt (Co)-Total	0.00044		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Copper (Cu)-Total	0.0314		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Iron (Fe)-Total	0.331		0.010	mg/L	06-JUL-16	06-JUL-16	R3497533
Lead (Pb)-Total	0.000728		0.000090	mg/L	06-JUL-16	06-JUL-16	R3497533
Magnesium (Mg)-Total	3.06		0.010	mg/L	06-JUL-16	06-JUL-16	R3497533
Manganese (Mn)-Total	0.0322		0.00030	mg/L	06-JUL-16	06-JUL-16	R3497533
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	06-JUL-16	06-JUL-16	R3497533
Potassium (K)-Total	15.1		0.020	mg/L	06-JUL-16	06-JUL-16	R3497533
Sodium (Na)-Total	30.8		0.030	mg/L	06-JUL-16	06-JUL-16	R3497533
Zinc (Zn)-Total	0.0396		0.0020	mg/L	06-JUL-16	06-JUL-16	R3497533
Total Organic Carbon by Combustion							
Total Organic Carbon	94.3		2.5	mg/L		07-JUL-16	R3498380
Total Suspended Solids							
Total Suspended Solids	18.0		5.0	mg/L		04-JUL-16	R3496110
pH							
pH	7.31		0.10	pH units		08-JUL-16	R3500300
L1792472-4 COR-4							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	302		1.2	mg/L		11-JUL-16	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		11-JUL-16	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		11-JUL-16	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	248		1.0	mg/L		08-JUL-16	R3500300
Ammonia by colour							
Ammonia, Total (as N)	27.7		1.0	mg/L		05-JUL-16	R3497618
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	25.6		6.0	mg/L		04-JUL-16	R3501511
Carbonaceous BOD							
BOD Carbonaceous	21.3		6.0	mg/L		04-JUL-16	R3501511
Chloride in Water by IC							
Chloride (Cl)	38.4		0.50	mg/L		05-JUL-16	R3498700
Conductivity							
Conductivity	625		1.0	umhos/cm		08-JUL-16	R3500300
Fecal Coliform							
Fecal Coliforms	1500	PEHR	3	MPN/100mL		04-JUL-16	R3500991

* 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
L1792472-4 COR-4							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
Hardness Calculated							
Hardness (as CaCO3)	123		0.30	mg/L		07-JUL-16	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	06-JUL-16	06-JUL-16	R3497926
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		05-JUL-16	R3498700
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		08-JUL-16	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		05-JUL-16	R3498700
Oil & Grease - Gravimetric							
Oil and Grease	5.1		5.0	mg/L		05-JUL-16	R3497952
Phenol (4AAP)							
Phenols (4AAP)	0.0102		0.0010	mg/L		08-JUL-16	R3499262
Phosphorus, Total							
Phosphorus (P)-Total	4.56		0.050	mg/L		12-JUL-16	R3501903
Sulfate in Water by IC							
Sulfate (SO4)	4.63		0.30	mg/L		05-JUL-16	R3498700
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0324		0.0050	mg/L	06-JUL-16	06-JUL-16	R3497533
Arsenic (As)-Total	0.00140		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Cadmium (Cd)-Total	0.000065		0.000010	mg/L	06-JUL-16	06-JUL-16	R3497533
Calcium (Ca)-Total	43.2		0.10	mg/L	06-JUL-16	06-JUL-16	R3497533
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	06-JUL-16	06-JUL-16	R3497533
Cobalt (Co)-Total	0.00126		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Copper (Cu)-Total	0.0169		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Iron (Fe)-Total	0.696		0.010	mg/L	06-JUL-16	06-JUL-16	R3497533
Lead (Pb)-Total	0.000508		0.000090	mg/L	06-JUL-16	06-JUL-16	R3497533
Magnesium (Mg)-Total	3.66		0.010	mg/L	06-JUL-16	06-JUL-16	R3497533
Manganese (Mn)-Total	0.173		0.00030	mg/L	06-JUL-16	06-JUL-16	R3497533
Nickel (Ni)-Total	0.0030		0.0020	mg/L	06-JUL-16	06-JUL-16	R3497533
Potassium (K)-Total	17.3		0.020	mg/L	06-JUL-16	06-JUL-16	R3497533
Sodium (Na)-Total	36.8		0.030	mg/L	06-JUL-16	06-JUL-16	R3497533
Zinc (Zn)-Total	0.0193		0.0020	mg/L	06-JUL-16	06-JUL-16	R3497533
Total Organic Carbon by Combustion							
Total Organic Carbon	24.8		0.50	mg/L		06-JUL-16	R3497572
Total Suspended Solids							
Total Suspended Solids	37.0		5.0	mg/L		04-JUL-16	R3496110
pH							
pH	7.30		0.10	pH units		08-JUL-16	R3500300
L1792472-5 COR-5							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	264		1.2	mg/L		11-JUL-16	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		11-JUL-16	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		11-JUL-16	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	216		1.0	mg/L		08-JUL-16	R3500300

* 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
L1792472-5 COR-5							
Sampled By: CASEY PENIYUK on 27-JUN-16							
Matrix:							
Ammonia by colour							
Ammonia, Total (as N)	16.9		2.0	mg/L		06-JUL-16	R3497636
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	11.6		2.0	mg/L		04-JUL-16	R3501511
Carbonaceous BOD							
BOD Carbonaceous	6.5		2.0	mg/L		04-JUL-16	R3501511
Chloride in Water by IC							
Chloride (Cl)	39.7		0.50	mg/L		05-JUL-16	R3498700
Conductivity							
Conductivity	573		1.0	umhos/cm		08-JUL-16	R3500300
Fecal Coliform							
Fecal Coliforms	150	PEHR	3	MPN/100mL		04-JUL-16	R3500991
Hardness Calculated							
Hardness (as CaCO3)	144		0.30	mg/L		07-JUL-16	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	06-JUL-16	06-JUL-16	R3497926
Nitrate in Water by IC							
Nitrate (as N)	1.25		0.020	mg/L		05-JUL-16	R3498700
Nitrate+Nitrite							
Nitrate and Nitrite as N	1.56		0.070	mg/L		08-JUL-16	
Nitrite in Water by IC							
Nitrite (as N)	0.319		0.010	mg/L		05-JUL-16	R3498700
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		05-JUL-16	R3497952
Phenol (4AAP)							
Phenols (4AAP)	0.0023		0.0010	mg/L		08-JUL-16	R3499262
Phosphorus, Total							
Phosphorus (P)-Total	2.78		0.010	mg/L		12-JUL-16	R3501903
Sulfate in Water by IC							
Sulfate (SO4)	3.62		0.30	mg/L		05-JUL-16	R3498700
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0187		0.0050	mg/L	06-JUL-16	06-JUL-16	R3497533
Arsenic (As)-Total	0.00093		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Cadmium (Cd)-Total	0.000054		0.000010	mg/L	06-JUL-16	06-JUL-16	R3497533
Calcium (Ca)-Total	51.2		0.10	mg/L	06-JUL-16	06-JUL-16	R3497533
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	06-JUL-16	06-JUL-16	R3497533
Cobalt (Co)-Total	0.00113		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Copper (Cu)-Total	0.0127		0.00020	mg/L	06-JUL-16	06-JUL-16	R3497533
Iron (Fe)-Total	0.504		0.010	mg/L	06-JUL-16	06-JUL-16	R3497533
Lead (Pb)-Total	0.000309		0.000090	mg/L	06-JUL-16	06-JUL-16	R3497533
Magnesium (Mg)-Total	3.96		0.010	mg/L	06-JUL-16	06-JUL-16	R3497533
Manganese (Mn)-Total	0.0878		0.00030	mg/L	06-JUL-16	06-JUL-16	R3497533
Nickel (Ni)-Total	0.0029		0.0020	mg/L	06-JUL-16	06-JUL-16	R3497533
Potassium (K)-Total	15.8		0.020	mg/L	06-JUL-16	06-JUL-16	R3497533
Sodium (Na)-Total	39.2		0.030	mg/L	06-JUL-16	06-JUL-16	R3497533
Zinc (Zn)-Total	0.0140		0.0020	mg/L	06-JUL-16	06-JUL-16	R3497533
Total Organic Carbon by Combustion							
Total Organic Carbon	18.1		0.50	mg/L		06-JUL-16	R3497572
Total Suspended Solids							
Total Suspended Solids	24.0		5.0	mg/L		04-JUL-16	R3496110
pH							
pH	7.69		0.10	pH units		08-JUL-16	R3500300

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.

Test Method References:

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

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

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

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

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

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

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

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

BOD-CBOD-WP	Water	Carbonaceous BOD	APHA 5210 B

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

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

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

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

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

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

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

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

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

EC-WP	Water	Conductivity	APHA 2510B

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

ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L

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

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

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

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

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

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

FC-MPN-WP	Water	Fecal Coliform	APHA 9221E

The Most Probable Number (MPN) method is based on the Multiple Tube Fermentation technique. The results of examination of replicate tubes and dilutions of a sample are reported after confirmations specific to total coliform, fecal coliform and E. coli are performed. Results are reported in MPN/100 mL for water and MPN/gram for food and solid samples.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA SW 846/8270-GC/MS

Water is spiked with a surrogate spike mix and extracted using solvent extraction techniques. Analysis is performed by GC/MS in the selected ion monitoring (SIM) mode.

PH-WP	Water	pH	APHA 4500H

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

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

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)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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:

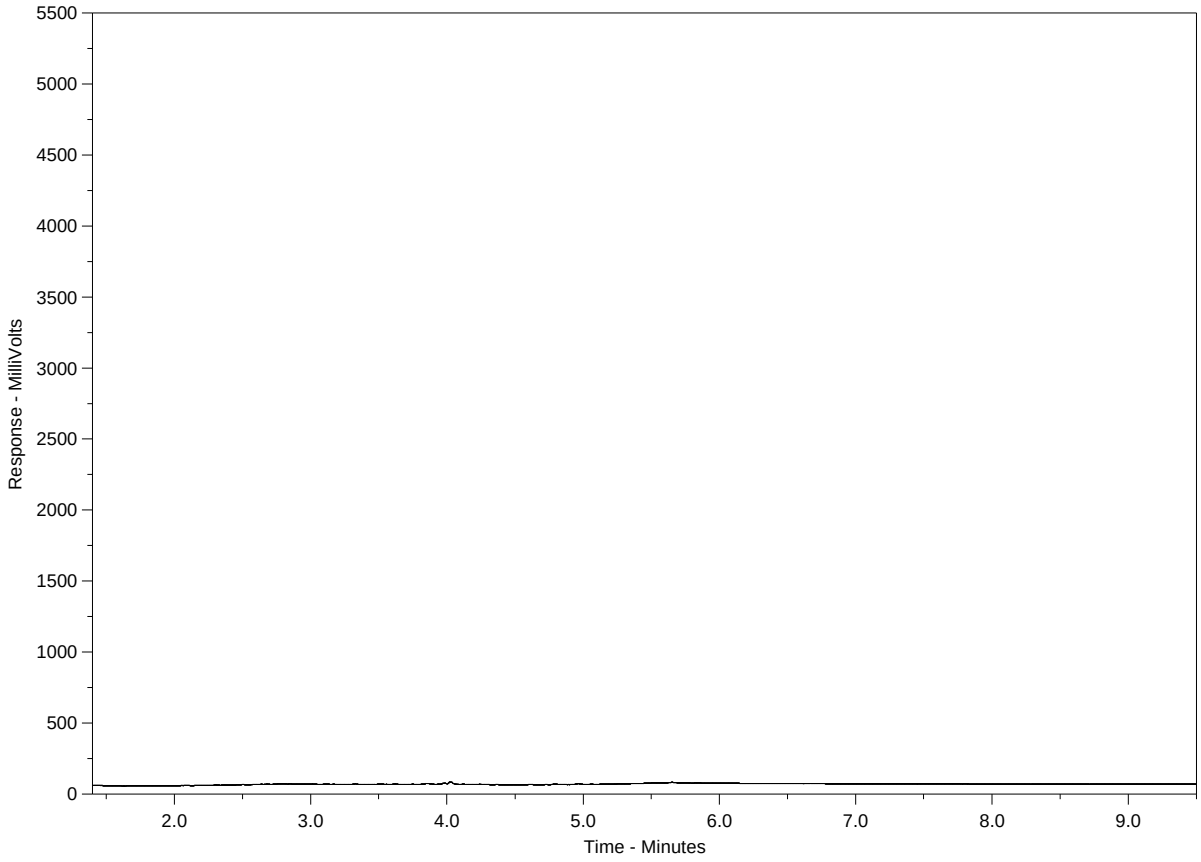
GLOSSARY OF REPORT TERMS

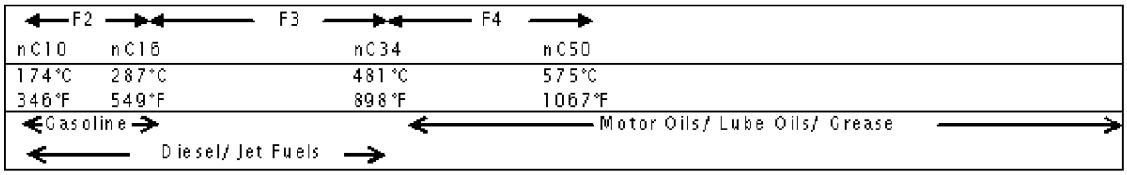
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates 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: L1792472-1
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.

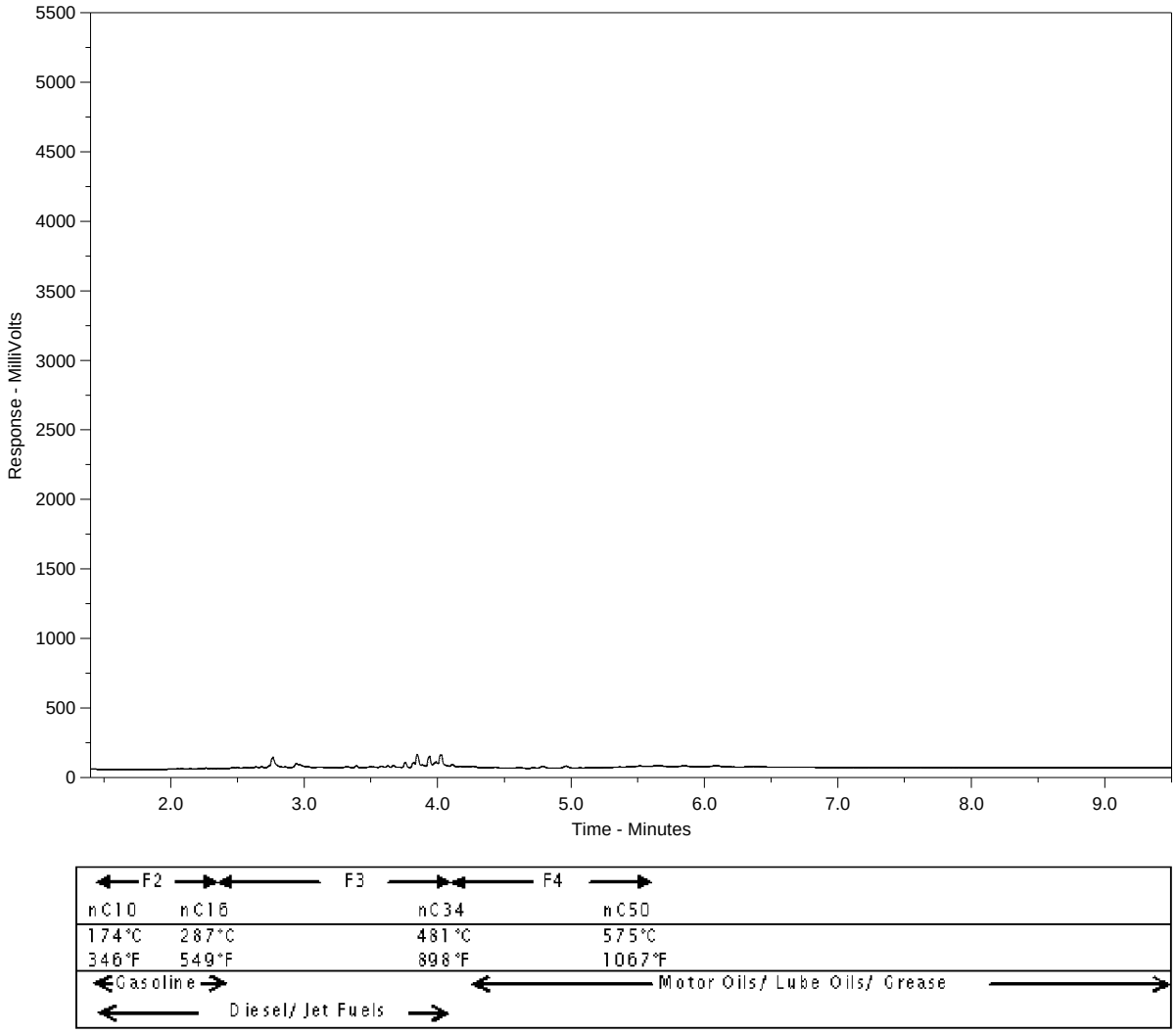
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1792472-2
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

L1792472-COFC

COC Number: 14 - 503305

Page ____ of ____

L1792472

Report To		Report Format / Distribution		Turnaround Time (TAT) is not available for all tests
Company:	HAMLET of Coral Harbour	Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)	☑ R ☑ [illegible] 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 Nt. X0C0C0	☐ 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:	867 925 8867	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	
Company:		Email 2	
Contact:			

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

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

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	Oil + Grease	PAH	BTEX x3	F2 - F4 x2	Number of Containers
		~~06/27/16~~	~~13~~											
	Cor - 7	06/27/16	130		✓	✓	✓	✓	✓	✓	✓	✓	✓	14
	Cor - 6	06/27/16			✓	✓	✓	✓	✓	✓	✓	✓	✓	14
	Cor - 3	06/27/16			✓	✓	✓	✓	✓	✓	✓			8
	Cor - 4	06/27/16			✓	✓	✓	✓	✓	✓	✓	✓		8
	Cor - 5	06/27/16			✓	✓	✓	✓	✓	✓	✓			8

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	13°C

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	

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:
Casey Parrott	June 27/16	1:30	JD	June 4/16	11:00			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA FM-0326e v09 Front/04 January 2014

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

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

Hamlet of Coral Harbour
ATTN: LENNIE POMEULIK
PO Box 30
Coral Harbour MB X0C 0C0

Date Received: 02-SEP-16
Report Date: 13-SEP-16 11:16 (MT)
Version: FINAL

Client Phone: 867-925-8867

Certificate of Analysis

Lab Work Order #: L1823079

Project P.O. #: NOT SUBMITTED
Job Reference:
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
L1823079-1 COR-7							
Sampled By: CASEY on 31-AUG-16 @ 10:40							
Matrix: WASTEWATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		07-SEP-16	R3543774
Toluene	<0.0010		0.0010	mg/L		07-SEP-16	R3543774
Ethyl benzene	<0.00050		0.00050	mg/L		07-SEP-16	R3543774
o-Xylene	<0.00050		0.00050	mg/L		07-SEP-16	R3543774
m+p-Xylenes	<0.00050		0.00050	mg/L		07-SEP-16	R3543774
F1 (C6-C10)	<0.10		0.10	mg/L		07-SEP-16	R3543774
Surrogate: 4-Bromofluorobenzene (SS)	107.4		70-130	%		07-SEP-16	R3543774
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	06-SEP-16	07-SEP-16	R3543334
F3 (C16-C34)	<0.25		0.25	mg/L	06-SEP-16	07-SEP-16	R3543334
F4 (C34-C50)	<0.25		0.25	mg/L	06-SEP-16	07-SEP-16	R3543334
Surrogate: 2-Bromobenzotrifluoride	91.2		60-140	%	06-SEP-16	07-SEP-16	R3543334
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		13-SEP-16	
F2-Naphth	<0.10		0.10	mg/L		13-SEP-16	
F3-PAH	<0.25		0.25	mg/L		13-SEP-16	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		13-SEP-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.0015		0.0015	mg/L		09-SEP-16	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Acenaphthene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Acenaphthylene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Anthracene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Acridine	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Benzo(a)anthracene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	08-SEP-16	08-SEP-16	R3546224
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Chrysene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	08-SEP-16	08-SEP-16	R3546224
Fluoranthene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Fluorene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Naphthalene	<0.000050		0.000050	mg/L	08-SEP-16	08-SEP-16	R3546224
Phenanthrene	<0.000050		0.000050	mg/L	08-SEP-16	08-SEP-16	R3546224
Pyrene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Quinoline	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	08-SEP-16	08-SEP-16	R3546224
Surrogate: Acenaphthene d10	81.3		40-130	%	08-SEP-16	08-SEP-16	R3546224
Surrogate: Acridine d9	91.5		40-130	%	08-SEP-16	08-SEP-16	R3546224
Surrogate: Chrysene d12	87.1		40-130	%	08-SEP-16	08-SEP-16	R3546224
Surrogate: Naphthalene d8	80.5		40-130	%	08-SEP-16	08-SEP-16	R3546224
Surrogate: Phenanthrene d10	78.7		40-130	%	08-SEP-16	08-SEP-16	R3546224
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	237		1.2	mg/L		08-SEP-16	
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
L1823079-1 COR-7							
Sampled By: CASEY on 31-AUG-16 @ 10:40							
Matrix: WASTEWATER							
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		08-SEP-16	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		08-SEP-16	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	195		1.0	mg/L		07-SEP-16	R3543624
Ammonia by colour							
Ammonia, Total (as N)	0.022		0.010	mg/L		08-SEP-16	R3544535
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		02-SEP-16	R3543825
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		02-SEP-16	R3543825
Chloride in Water by IC							
Chloride (Cl)	6.2		1.0	mg/L		02-SEP-16	R3542867
Conductivity							
Conductivity	1100		1.0	umhos/cm		07-SEP-16	R3543624
Fecal Coliform							
Fecal Coliforms	240	PEHT	3	MPN/100mL		02-SEP-16	R3543382
Hardness Calculated							
Hardness (as CaCO3)	706		0.30	mg/L		12-SEP-16	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	09-SEP-16	09-SEP-16	R3545817
Nitrate in Water by IC							
Nitrate (as N)	0.068	DLM	0.040	mg/L		02-SEP-16	R3542867
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		07-SEP-16	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		02-SEP-16	R3542867
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		09-SEP-16	R3546388
Phenol (4AAP)							
Phenols (4AAP)	0.0034		0.0010	mg/L		08-SEP-16	R3543610
Phosphorus, Total							
Phosphorus (P)-Total	0.075		0.010	mg/L		08-SEP-16	R3543724
Sulfate in Water by IC							
Sulfate (SO4)	448		0.60	mg/L		02-SEP-16	R3542867
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0186		0.0050	mg/L	09-SEP-16	11-SEP-16	R3545677
Arsenic (As)-Total	0.00056		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Cadmium (Cd)-Total	0.000032		0.000010	mg/L	09-SEP-16	11-SEP-16	R3545677
Calcium (Ca)-Total	264		0.10	mg/L	09-SEP-16	11-SEP-16	R3545677
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	09-SEP-16	11-SEP-16	R3545677
Cobalt (Co)-Total	0.00040		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Copper (Cu)-Total	0.00662		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Iron (Fe)-Total	1.83		0.010	mg/L	09-SEP-16	11-SEP-16	R3545677
Lead (Pb)-Total	0.000715		0.000090	mg/L	09-SEP-16	11-SEP-16	R3545677
Magnesium (Mg)-Total	11.4		0.010	mg/L	09-SEP-16	11-SEP-16	R3545677
Manganese (Mn)-Total	0.0635		0.00030	mg/L	09-SEP-16	11-SEP-16	R3545677
Nickel (Ni)-Total	0.0040		0.0020	mg/L	09-SEP-16	11-SEP-16	R3545677
Potassium (K)-Total	8.25		0.020	mg/L	09-SEP-16	11-SEP-16	R3545677
Sodium (Na)-Total	14.6		0.030	mg/L	09-SEP-16	11-SEP-16	R3545677
Zinc (Zn)-Total	0.0749		0.0020	mg/L	09-SEP-16	11-SEP-16	R3545677
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
L1823079-1 COR-7							
Sampled By: CASEY on 31-AUG-16 @ 10:40							
Matrix: WASTEWATER							
Total Organic Carbon by Combustion							
Total Organic Carbon	45.8		0.50	mg/L		09-SEP-16	R3546230
Total Suspended Solids							
Total Suspended Solids	<5.0		5.0	mg/L		06-SEP-16	R3542512
pH							
pH	8.00		0.10	pH units		07-SEP-16	R3543624
L1823079-2 COR-6							
Sampled By: CASEY on 31-AUG-16 @ 10:50							
Matrix: WASTEWATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		07-SEP-16	R3543774
Toluene	<0.0010		0.0010	mg/L		07-SEP-16	R3543774
Ethyl benzene	<0.00050		0.00050	mg/L		07-SEP-16	R3543774
o-Xylene	<0.00050		0.00050	mg/L		07-SEP-16	R3543774
m+p-Xylenes	<0.00050		0.00050	mg/L		07-SEP-16	R3543774
F1 (C6-C10)	<0.10		0.10	mg/L		07-SEP-16	R3543774
Surrogate: 4-Bromofluorobenzene (SS)	107.8		70-130	%		07-SEP-16	R3543774
CCME PHC F2-F4 in Water							
F2 (C10-C16)	0.12		0.10	mg/L	06-SEP-16	07-SEP-16	R3543334
F3 (C16-C34)	0.29		0.25	mg/L	06-SEP-16	07-SEP-16	R3543334
F4 (C34-C50)	<0.25		0.25	mg/L	06-SEP-16	07-SEP-16	R3543334
Surrogate: 2-Bromobenzotrifluoride	93.2		60-140	%	06-SEP-16	07-SEP-16	R3543334
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		13-SEP-16	
F2-Naphth	0.12		0.10	mg/L		13-SEP-16	
F3-PAH	0.29		0.25	mg/L		13-SEP-16	
Total Hydrocarbons (C6-C50)	0.41		0.38	mg/L		13-SEP-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.0015		0.0015	mg/L		09-SEP-16	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Acenaphthene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Acenaphthylene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Anthracene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Acridine	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Benzo(a)anthracene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	08-SEP-16	08-SEP-16	R3546224
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Chrysene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	08-SEP-16	08-SEP-16	R3546224
Fluoranthene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Fluorene	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Naphthalene	<0.000050		0.000050	mg/L	08-SEP-16	08-SEP-16	R3546224
Phenanthrene	<0.000050		0.000050	mg/L	08-SEP-16	08-SEP-16	R3546224
Pyrene	<0.000010		0.000010	mg/L	08-SEP-16	08-SEP-16	R3546224
Quinoline	<0.000020		0.000020	mg/L	08-SEP-16	08-SEP-16	R3546224

* 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
L1823079-2 COR-6							
Sampled By: CASEY on 31-AUG-16 @ 10:50							
Matrix: WASTEWATER							
Polyaromatic Hydrocarbons (PAHs)							
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	08-SEP-16	08-SEP-16	R3546224
Surrogate: Acenaphthene d10	85.7		40-130	%	08-SEP-16	08-SEP-16	R3546224
Surrogate: Acridine d9	101.3		40-130	%	08-SEP-16	08-SEP-16	R3546224
Surrogate: Chrysene d12	86.4		40-130	%	08-SEP-16	08-SEP-16	R3546224
Surrogate: Naphthalene d8	87.8		40-130	%	08-SEP-16	08-SEP-16	R3546224
Surrogate: Phenanthrene d10	83.3		40-130	%	08-SEP-16	08-SEP-16	R3546224
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	499		1.2	mg/L		08-SEP-16	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		08-SEP-16	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		08-SEP-16	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	409		1.0	mg/L		07-SEP-16	R3543624
Ammonia by colour							
Ammonia, Total (as N)	2.64		0.10	mg/L		08-SEP-16	R3544535
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	6.9		2.0	mg/L		02-SEP-16	R3543825
Carbonaceous BOD							
BOD Carbonaceous	4.9		2.0	mg/L		02-SEP-16	R3543825
Chloride in Water by IC							
Chloride (Cl)	97.4		2.5	mg/L		02-SEP-16	R3542867
Conductivity							
Conductivity	1210		1.0	umhos/cm		07-SEP-16	R3543624
Fecal Coliform							
Fecal Coliforms	2400	PEHT	3	MPN/100mL		02-SEP-16	R3543382
Hardness Calculated							
Hardness (as CaCO3)	484		0.30	mg/L		12-SEP-16	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	09-SEP-16	09-SEP-16	R3545817
Nitrate in Water by IC							
Nitrate (as N)	<0.10	DLM	0.10	mg/L		02-SEP-16	R3542867
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.11		0.11	mg/L		07-SEP-16	
Nitrite in Water by IC							
Nitrite (as N)	<0.050	DLM	0.050	mg/L		02-SEP-16	R3542867
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		09-SEP-16	R3546388
Phenol (4AAP)							
Phenols (4AAP)	0.0070		0.0010	mg/L		08-SEP-16	R3543610
Phosphorus, Total							
Phosphorus (P)-Total	0.502		0.010	mg/L		08-SEP-16	R3543724
Sulfate in Water by IC							
Sulfate (SO4)	125		1.5	mg/L		02-SEP-16	R3542867
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.138		0.0050	mg/L	09-SEP-16	11-SEP-16	R3545677
Arsenic (As)-Total	0.00235		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Cadmium (Cd)-Total	0.000022		0.000010	mg/L	09-SEP-16	11-SEP-16	R3545677
Calcium (Ca)-Total	155		0.10	mg/L	09-SEP-16	11-SEP-16	R3545677
Chromium (Cr)-Total	0.0011		0.0010	mg/L	09-SEP-16	11-SEP-16	R3545677
Cobalt (Co)-Total	0.00036		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677

* 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
L1823079-2 COR-6							
Sampled By: CASEY on 31-AUG-16 @ 10:50							
Matrix: WASTEWATER							
Total Metals by ICP-MS							
Copper (Cu)-Total	0.00280		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Iron (Fe)-Total	1.32		0.010	mg/L	09-SEP-16	11-SEP-16	R3545677
Lead (Pb)-Total	0.00170		0.000090	mg/L	09-SEP-16	11-SEP-16	R3545677
Magnesium (Mg)-Total	23.3		0.010	mg/L	09-SEP-16	11-SEP-16	R3545677
Manganese (Mn)-Total	0.316		0.00030	mg/L	09-SEP-16	11-SEP-16	R3545677
Nickel (Ni)-Total	0.0032		0.0020	mg/L	09-SEP-16	11-SEP-16	R3545677
Potassium (K)-Total	31.3		0.020	mg/L	09-SEP-16	11-SEP-16	R3545677
Sodium (Na)-Total	75.9		0.030	mg/L	09-SEP-16	11-SEP-16	R3545677
Zinc (Zn)-Total	0.0082		0.0020	mg/L	09-SEP-16	11-SEP-16	R3545677
Total Organic Carbon by Combustion							
Total Organic Carbon	34.1		0.50	mg/L		09-SEP-16	R3546230
Total Suspended Solids							
Total Suspended Solids	37.0		5.0	mg/L		06-SEP-16	R3542512
pH							
pH	7.44		0.10	pH units		07-SEP-16	R3543624
L1823079-3 COR-5							
Sampled By: CASEY on 31-AUG-16 @ 11:30							
Matrix: WASTEWATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	337		1.2	mg/L		08-SEP-16	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		08-SEP-16	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		08-SEP-16	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	276		1.0	mg/L		07-SEP-16	R3543624
Ammonia by colour							
Ammonia, Total (as N)	0.119		0.010	mg/L		08-SEP-16	R3544535
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		02-SEP-16	R3543825
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		02-SEP-16	R3543825
Chloride in Water by IC							
Chloride (Cl)	48.7		0.50	mg/L		02-SEP-16	R3542867
Conductivity							
Conductivity	679		1.0	umhos/cm		07-SEP-16	R3543624
Fecal Coliform							
Fecal Coliforms	93	PEHT	3	MPN/100mL		02-SEP-16	R3543382
Hardness Calculated							
Hardness (as CaCO3)	260		0.30	mg/L		12-SEP-16	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	09-SEP-16	09-SEP-16	R3545817
Nitrate in Water by IC							
Nitrate (as N)	0.824		0.020	mg/L		02-SEP-16	R3542867
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.824		0.070	mg/L		07-SEP-16	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		02-SEP-16	R3542867
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		09-SEP-16	R3546388

* 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
L1823079-3 COR-5							
Sampled By: CASEY on 31-AUG-16 @ 11:30							
Matrix: WASTEWATER							
Phenol (4AAP)							
Phenols (4AAP)	0.0035		0.0010	mg/L		08-SEP-16	R3543610
Phosphorus, Total							
Phosphorus (P)-Total	0.204		0.010	mg/L		08-SEP-16	R3543724
Sulfate in Water by IC							
Sulfate (SO4)	20.2		0.30	mg/L		02-SEP-16	R3542867
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0154		0.0050	mg/L	09-SEP-16	11-SEP-16	R3545677
Arsenic (As)-Total	0.00062		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Cadmium (Cd)-Total	0.000104		0.000010	mg/L	09-SEP-16	11-SEP-16	R3545677
Calcium (Ca)-Total	90.6		0.10	mg/L	09-SEP-16	11-SEP-16	R3545677
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	09-SEP-16	11-SEP-16	R3545677
Cobalt (Co)-Total	0.00161		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Copper (Cu)-Total	0.00438		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Iron (Fe)-Total	0.063		0.010	mg/L	09-SEP-16	11-SEP-16	R3545677
Lead (Pb)-Total	<0.000090		0.000090	mg/L	09-SEP-16	11-SEP-16	R3545677
Magnesium (Mg)-Total	8.17		0.010	mg/L	09-SEP-16	11-SEP-16	R3545677
Manganese (Mn)-Total	0.0866		0.00030	mg/L	09-SEP-16	11-SEP-16	R3545677
Nickel (Ni)-Total	0.0065		0.0020	mg/L	09-SEP-16	11-SEP-16	R3545677
Potassium (K)-Total	5.95		0.020	mg/L	09-SEP-16	11-SEP-16	R3545677
Sodium (Na)-Total	57.1		0.030	mg/L	09-SEP-16	11-SEP-16	R3545677
Zinc (Zn)-Total	0.0028		0.0020	mg/L	09-SEP-16	11-SEP-16	R3545677
Total Organic Carbon by Combustion							
Total Organic Carbon	12.5		0.50	mg/L		09-SEP-16	R3546230
Total Suspended Solids							
Total Suspended Solids	5.0		5.0	mg/L		06-SEP-16	R3542512
pH							
pH	7.65		0.10	pH units		07-SEP-16	R3543624
L1823079-4 COR-4							
Sampled By: CASEY on 31-AUG-16 @ 11:15							
Matrix: WASTEWATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	302		1.2	mg/L		08-SEP-16	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		08-SEP-16	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		08-SEP-16	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	247		1.0	mg/L		07-SEP-16	R3543624
Ammonia by colour							
Ammonia, Total (as N)	2.20		0.10	mg/L		08-SEP-16	R3544535
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	4.0		2.0	mg/L		02-SEP-16	R3543825
Carbonaceous BOD							
BOD Carbonaceous	2.2		2.0	mg/L		02-SEP-16	R3543825
Chloride in Water by IC							
Chloride (Cl)	38.6		0.50	mg/L		02-SEP-16	R3542867
Conductivity							
Conductivity	634		1.0	umhos/cm		07-SEP-16	R3543624
Fecal Coliform							
Fecal Coliforms	74	PEHT	3	MPN/100mL		02-SEP-16	R3543382

* 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
L1823079-4 COR-4							
Sampled By: CASEY on 31-AUG-16 @ 11:15							
Matrix: WASTEWATER							
Hardness Calculated							
Hardness (as CaCO3)	243		0.30	mg/L		12-SEP-16	
Mercury Total							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	09-SEP-16	09-SEP-16	R3545817
Nitrate in Water by IC							
Nitrate (as N)	5.30		0.020	mg/L		02-SEP-16	R3542867
Nitrate+Nitrite							
Nitrate and Nitrite as N	5.38		0.070	mg/L		07-SEP-16	
Nitrite in Water by IC							
Nitrite (as N)	0.078		0.010	mg/L		02-SEP-16	R3542867
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		09-SEP-16	R3546388
Phenol (4AAP)							
Phenols (4AAP)	0.0033		0.0010	mg/L		08-SEP-16	R3543610
Phosphorus, Total							
Phosphorus (P)-Total	0.210		0.010	mg/L		08-SEP-16	R3543724
Sulfate in Water by IC							
Sulfate (SO4)	18.9		0.30	mg/L		02-SEP-16	R3542867
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0079		0.0050	mg/L	09-SEP-16	11-SEP-16	R3545677
Arsenic (As)-Total	0.00108		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Cadmium (Cd)-Total	0.000035		0.000010	mg/L	09-SEP-16	11-SEP-16	R3545677
Calcium (Ca)-Total	86.1		0.10	mg/L	09-SEP-16	11-SEP-16	R3545677
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	09-SEP-16	11-SEP-16	R3545677
Cobalt (Co)-Total	0.00105		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Copper (Cu)-Total	0.00493		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Iron (Fe)-Total	0.140		0.010	mg/L	09-SEP-16	11-SEP-16	R3545677
Lead (Pb)-Total	<0.000090		0.000090	mg/L	09-SEP-16	11-SEP-16	R3545677
Magnesium (Mg)-Total	6.74		0.010	mg/L	09-SEP-16	11-SEP-16	R3545677
Manganese (Mn)-Total	0.0570		0.00030	mg/L	09-SEP-16	11-SEP-16	R3545677
Nickel (Ni)-Total	0.0047		0.0020	mg/L	09-SEP-16	11-SEP-16	R3545677
Potassium (K)-Total	14.2		0.020	mg/L	09-SEP-16	11-SEP-16	R3545677
Sodium (Na)-Total	39.6		0.030	mg/L	09-SEP-16	11-SEP-16	R3545677
Zinc (Zn)-Total	0.0025		0.0020	mg/L	09-SEP-16	11-SEP-16	R3545677
Total Organic Carbon by Combustion							
Total Organic Carbon	15.6		0.50	mg/L		09-SEP-16	R3546230
Total Suspended Solids							
Total Suspended Solids	<5.0		5.0	mg/L		06-SEP-16	R3542512
pH							
pH	7.98		0.10	pH units		07-SEP-16	R3543624
L1823079-5 COR-3							
Sampled By: CASEY on 31-AUG-16 @ 11:00							
Matrix: WASTEWATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	387		1.2	mg/L		08-SEP-16	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		08-SEP-16	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		08-SEP-16	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	317		1.0	mg/L		07-SEP-16	R3543624

* 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
L1823079-5 COR-3							
Sampled By: CASEY on 31-AUG-16 @ 11:00							
Matrix: WASTEWATER							
Ammonia by colour							
Ammonia, Total (as N)	32.1		1.0	mg/L		08-SEP-16	R3544535
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	36		20	mg/L		02-SEP-16	R3543825
Carbonaceous BOD							
BOD Carbonaceous	31.7		6.0	mg/L		02-SEP-16	R3543825
Chloride in Water by IC							
Chloride (Cl)	52.1		1.0	mg/L		02-SEP-16	R3542867
Conductivity							
Conductivity	806		1.0	umhos/cm		07-SEP-16	R3543624
Fecal Coliform							
Fecal Coliforms	9300	PEHT	3	MPN/100mL		02-SEP-16	R3543382
Hardness Calculated							
Hardness (as CaCO3)	162		0.30	mg/L		12-SEP-16	
Mercury Total							
Mercury (Hg)-Total	<0.00020	DLM	0.00020	mg/L	09-SEP-16	09-SEP-16	R3545817
Nitrate in Water by IC							
Nitrate (as N)	<0.040	DLM	0.040	mg/L		02-SEP-16	R3542867
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		07-SEP-16	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		02-SEP-16	R3542867
Oil & Grease - Gravimetric							
Oil and Grease	6.2		5.0	mg/L		09-SEP-16	R3546388
Phenol (4AAP)							
Phenols (4AAP)	0.0141		0.0010	mg/L		08-SEP-16	R3543610
Phosphorus, Total							
Phosphorus (P)-Total	7.68		0.020	mg/L		12-SEP-16	R3546387
Sulfate in Water by IC							
Sulfate (SO4)	15.5		0.60	mg/L		02-SEP-16	R3542867
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.155		0.0050	mg/L	09-SEP-16	11-SEP-16	R3545677
Arsenic (As)-Total	0.00094		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Cadmium (Cd)-Total	0.000024		0.000010	mg/L	09-SEP-16	11-SEP-16	R3545677
Calcium (Ca)-Total	55.8		0.10	mg/L	09-SEP-16	11-SEP-16	R3545677
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	09-SEP-16	11-SEP-16	R3545677
Cobalt (Co)-Total	0.00061		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Copper (Cu)-Total	0.0111		0.00020	mg/L	09-SEP-16	11-SEP-16	R3545677
Iron (Fe)-Total	0.439		0.010	mg/L	09-SEP-16	11-SEP-16	R3545677
Lead (Pb)-Total	0.000648		0.000090	mg/L	09-SEP-16	11-SEP-16	R3545677
Magnesium (Mg)-Total	5.52		0.010	mg/L	09-SEP-16	11-SEP-16	R3545677
Manganese (Mn)-Total	0.0625		0.00030	mg/L	09-SEP-16	11-SEP-16	R3545677
Nickel (Ni)-Total	0.0035		0.0020	mg/L	09-SEP-16	11-SEP-16	R3545677
Potassium (K)-Total	22.9		0.020	mg/L	09-SEP-16	11-SEP-16	R3545677
Sodium (Na)-Total	55.2		0.030	mg/L	09-SEP-16	11-SEP-16	R3545677
Zinc (Zn)-Total	0.0129		0.0020	mg/L	09-SEP-16	11-SEP-16	R3545677
Total Organic Carbon by Combustion							
Total Organic Carbon	44.1		0.50	mg/L		09-SEP-16	R3546230
Total Suspended Solids							
Total Suspended Solids	125		13	mg/L		06-SEP-16	R3542512
pH							
pH	7.46		0.10	pH units		07-SEP-16	R3543624

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
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

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.

ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L

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

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

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

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

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

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

FC-MPN-WP	Water	Fecal Coliform	APHA 9221E

The Most Probable Number (MPN) method is based on the Multiple Tube Fermentation technique. Aliquots from three or more decimal dilutions of a sample are inoculated into tubes containing enrichment media and incubated at 35C for 48 – 3 hours. Sample aliquots exhibiting the characteristic positive response are transferred to various selective media for the coliform group(s) of interest and incubated at specific temperatures and times. The Most Probable Number for each target group is statistically derived from a standard MPN table based on the combinations of positive outcomes at each dilution.
The fecal (thermotolerant) coliform group may include organisms not originating in the intestines of warm-blooded animals.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA SW 846/8270-GC/MS

Water is spiked with a surrogate spike mix and extracted using solvent extraction techniques. Analysis is performed by GC/MS in the selected ion monitoring (SIM) mode.

PH-WP	Water	pH	APHA 4500H

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

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

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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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:

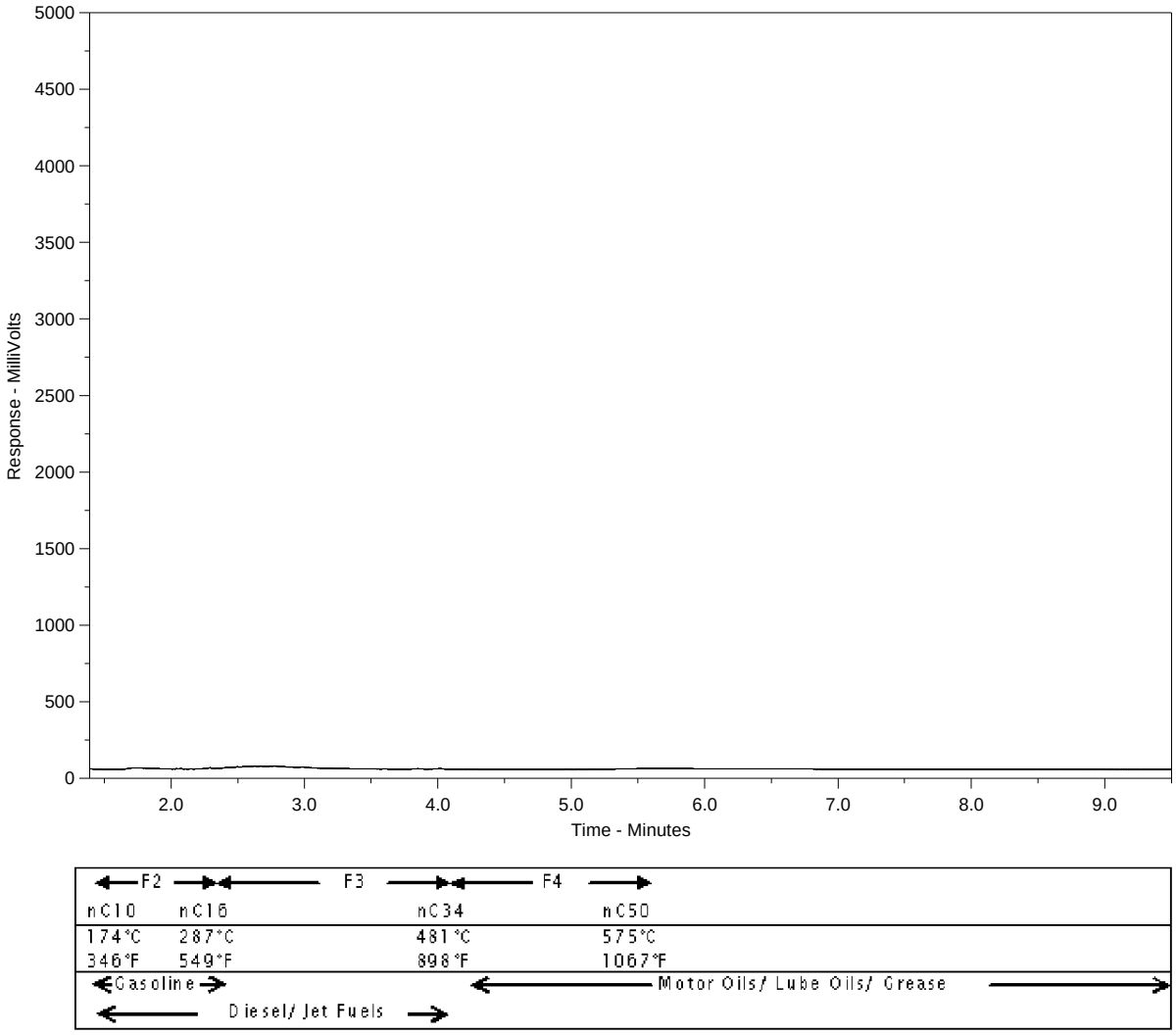
GLOSSARY OF REPORT TERMS

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: L1823079-1
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.

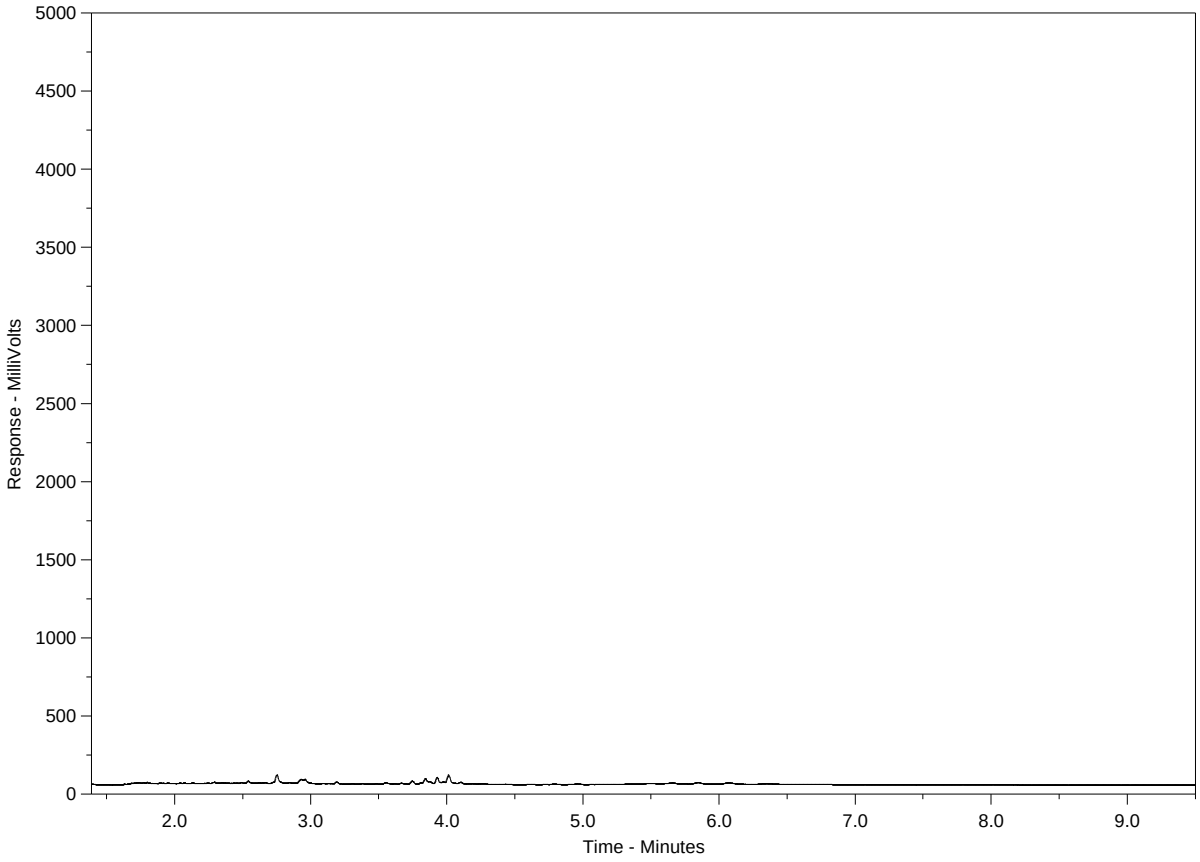
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

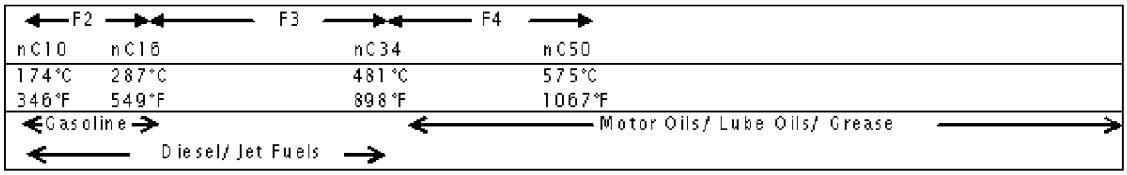
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1823079-2
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.

10 - 373784

ALS Environmental

L1823079-COFC

Form

Page ____ of ____

Report To
Company: HAMLET of Coral Harbour
Contact: Leonie Pameolik
Address: PO Box 30 Coral Harbour Nu X0C-0C0
Phone: 867 925 8867 Fax:

Invoice To Same as Report ? (circle) Yes or No (if No, provide details)
Copy of Invoice with Report? (circle) Yes or No
Company:
Contact:
Address:
Phone: Fax:

Standard: ✓ Other (specify):
Select: PDF ✓ Excel Digital Fax
Email 1:
Email 2:

Client / Project Information
Job #: Coral Harbour Nunavut
PO / AFE:
LSD:
Quote #: W10622
ALS Contact: Sampler: Casey

Service Request: (Rush subject to availability - Contact ALS to confirm TAT)
X Regular (Standard Turnaround Times - Business Days)
Priority (2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT
Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT
Same Day or Weekend Emergency - Contact ALS to confirm TAT

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

Lab Work Order # (lab use only)	Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Fod	Routine	Metals	Nutrients	Phenols	Oil + Grease	DAH	B-TEX	F2 - F4	Bacteria	Mercury	Number of Containers
		Cor-7	Aug 31/16	10:40	Wastewater	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1
		Cor-6	31/08/16	10:50	"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1
		Cor-5	31/08/16	11:30	"	✓	✓	✓	✓	✓	✓				✓	✓	9
		Cor-4	31/08/16	11:15	"	✓	✓	✓	✓	✓	✓				✓	✓	9
		Cor-3	31/08/16	11:00	"	✓	✓	✓	✓	✓	✓				✓	✓	9

Special Instructions / Regulation with water or land use (CCME-Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

Nunavut - WW - GRP1 - WP

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.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations Yes / No ? If Yes add SI
Casey Pariyat	31/08/16	11:50	AV	2.09.16	9:30AM	12.3 °C				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

GENF 18.01 Front

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-7
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-1
Matrix:

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

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.0015		mg/L	0.09	0.02	20-SEP-16
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			26-SEP-16
F2-Naphth	<0.10		mg/L			26-SEP-16
F3-PAH	<0.25		mg/L			26-SEP-16
Total Hydrocarbons (C6-C50)	<0.38		mg/L			26-SEP-16
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			15-SEP-16
F3 (C16-C34)	<0.25		mg/L			15-SEP-16
F4 (C34-C50)	<0.25		mg/L			15-SEP-16
Surr: 2-Bromobenzotrifluoride	88.4		%			15-SEP-16
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		16-SEP-16
Toluene	<0.0010		mg/L	0.06	0.024	16-SEP-16
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	16-SEP-16
o-Xylene	<0.00050		mg/L			16-SEP-16
m+p-Xylenes	<0.00050		mg/L			16-SEP-16
F1 (C6-C10)	<0.10		mg/L			16-SEP-16
Surr: 4-Bromofluorobenzene (SS)	100.9		%			16-SEP-16
Nunavut WW Group 1						
Phosphorus, Total						
Phosphorus (P)-Total	0.132		mg/L			20-SEP-16
Mercury Total						
Mercury (Hg)-Total	<0.000020		mg/L	0.001		19-SEP-16
Bicarbonate (HCO3)	248		mg/L			20-SEP-16
Carbonate (CO3)	<0.60		mg/L			20-SEP-16
Hydroxide (OH)	<0.34		mg/L			20-SEP-16
Fecal Coliforms	3	PEHT	MPN/100mL			15-SEP-16
*Nitrate and Nitrite as N	<0.070		mg/L	10		19-SEP-16
pH						
pH	8.08		pH units			19-SEP-16
Total Suspended Solids						
Total Suspended Solids	7.0		mg/L			20-SEP-16
Total Organic Carbon by Combustion						
Total Organic Carbon	40.3		mg/L			20-SEP-16
Total Metals by ICP-MS						
Aluminum (Al)-Total	0.0328		mg/L		0.1	22-SEP-16
Arsenic (As)-Total	0.00058		mg/L	0.01		22-SEP-16

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-7
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-1
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Nunavut WW Group 1						
Total Metals by ICP-MS						
Cadmium (Cd)-Total	0.000046		mg/L	0.005		22-SEP-16
Calcium (Ca)-Total	222		mg/L			22-SEP-16
Chromium (Cr)-Total	<0.0010		mg/L	0.05		22-SEP-16
Cobalt (Co)-Total	0.00048		mg/L			22-SEP-16
Copper (Cu)-Total	0.00568		mg/L		1.0	22-SEP-16
Iron (Fe)-Total	2.53		mg/L		0.3	22-SEP-16
Lead (Pb)-Total	0.00100		mg/L	0.01		22-SEP-16
Magnesium (Mg)-Total	10.0		mg/L			22-SEP-16
Manganese (Mn)-Total	0.0956		mg/L		0.05	22-SEP-16
Nickel (Ni)-Total	0.0038		mg/L			22-SEP-16
Potassium (K)-Total	8.51		mg/L			22-SEP-16
Sodium (Na)-Total	13.4		mg/L		200	22-SEP-16
Zinc (Zn)-Total	0.0775		mg/L		5.0	22-SEP-16
Sulfate in Water by IC						
Sulfate (SO4)	396		mg/L		500	15-SEP-16
Phenol (4AAP)						
Phenols (4AAP)	0.0026		mg/L			22-SEP-16
Oil & Grease - Gravimetric						
Oil and Grease	<5.0		mg/L			21-SEP-16
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		15-SEP-16
Nitrate in Water by IC						
*Nitrate (as N)	0.042		mg/L	10		15-SEP-16
Hardness Calculated						
Hardness (as CaCO3)	595	HTC	mg/L		500	23-SEP-16
Conductivity						
Conductivity	1080		umhos/cm			19-SEP-16
Chloride in Water by IC						
Chloride (Cl)	6.25		mg/L		250	15-SEP-16
Carbonaceous BOD						
BOD Carbonaceous	3.9		mg/L			15-SEP-16
Biochemical Oxygen Demand (BOD)						
Biochemical Oxygen Demand	3.8		mg/L			15-SEP-16
Ammonia by colour						
Ammonia, Total (as N)	0.036		mg/L			20-SEP-16
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as	203		mg/L			19-SEP-16

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-7
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-1
Matrix:

Test Description		Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Nunavut WW Group 1							
Alkalinity, Total (as CaCO3)							
	CaCO3)						
Polyaromatic Hydrocarbons (PAHs)							
	1-Methyl Naphthalene	<0.000020		mg/L			25-SEP-16
	2-Methyl Naphthalene	<0.000020		mg/L			25-SEP-16
	Acenaphthene	<0.000020		mg/L			25-SEP-16
	Acenaphthylene	<0.000020		mg/L			25-SEP-16
	Anthracene	<0.000010		mg/L			25-SEP-16
	Acridine	<0.000020		mg/L			25-SEP-16
	Benzo(a)anthracene	<0.000010		mg/L			25-SEP-16
	Benzo(a)pyrene	<0.0000050		mg/L	0.00001		25-SEP-16
	Benzo(b&j)fluoranthene	<0.000010		mg/L			25-SEP-16
	Benzo(g,h,i)perylene	<0.000020		mg/L			25-SEP-16
	Benzo(k)fluoranthene	<0.000010		mg/L			25-SEP-16
	Chrysene	<0.000020		mg/L			25-SEP-16
	Dibenzo(a,h)anthracene	<0.0000050		mg/L			25-SEP-16
	Fluoranthene	<0.000020		mg/L			25-SEP-16
	Fluorene	<0.000020		mg/L			25-SEP-16
	Indeno(1,2,3-cd)pyrene	<0.000010		mg/L			25-SEP-16
	Naphthalene	<0.000050		mg/L			25-SEP-16
	Phenanthrene	<0.000050		mg/L			25-SEP-16
	Pyrene	<0.000010		mg/L			25-SEP-16
	Quinoline	<0.000020		mg/L			25-SEP-16
	B(a)P Total Potency Equivalent	<0.000030		mg/L			25-SEP-16
Surr:	Acenaphthene d10	83.3		%			25-SEP-16
Surr:	Acridine d9	95.5		%			25-SEP-16
Surr:	Chrysene d12	78.0		%			25-SEP-16
Surr:	Naphthalene d8	87.5		%			25-SEP-16
Surr:	Phenanthrene d10	80.9		%			25-SEP-16

CDWQG = Health Canada Guideline Limits updated **DECEMBER 2015**

* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.
* Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality
- A blank entry designates no known limit.
- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.

Approved by

Hua Wo
Account Manager

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-6
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-2
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.0015		mg/L	0.09	0.02	20-SEP-16
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			26-SEP-16
F2-Naphth	<0.10		mg/L			26-SEP-16
F3-PAH	0.26		mg/L			26-SEP-16
Total Hydrocarbons (C6-C50)	<0.38		mg/L			26-SEP-16
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			15-SEP-16
F3 (C16-C34)	0.26		mg/L			15-SEP-16
F4 (C34-C50)	<0.25		mg/L			15-SEP-16
Surr: 2-Bromobenzotrifluoride	114.1		%			15-SEP-16
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		16-SEP-16
Toluene	<0.0010		mg/L	0.06	0.024	16-SEP-16
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	16-SEP-16
o-Xylene	<0.00050		mg/L			16-SEP-16
m+p-Xylenes	<0.00050		mg/L			16-SEP-16
F1 (C6-C10)	<0.10		mg/L			16-SEP-16
Surr: 4-Bromofluorobenzene (SS)	104.1		%			16-SEP-16
Nunavut WW Group 1						
Phosphorus, Total						
Phosphorus (P)-Total	0.594		mg/L			20-SEP-16
Mercury Total						
Mercury (Hg)-Total	<0.000020		mg/L	0.001		19-SEP-16
Bicarbonate (HCO3)	610		mg/L			20-SEP-16
Carbonate (CO3)	<0.60		mg/L			20-SEP-16
Hydroxide (OH)	<0.34		mg/L			20-SEP-16
Fecal Coliforms	7	PEHT	MPN/100mL			15-SEP-16
*Nitrate and Nitrite as N	<0.070		mg/L	10		19-SEP-16
pH						
pH	7.44		pH units			19-SEP-16
Total Suspended Solids						
Total Suspended Solids	15.0		mg/L			20-SEP-16
Total Organic Carbon by Combustion						
Total Organic Carbon	34.1		mg/L			20-SEP-16
Total Metals by ICP-MS						
Aluminum (Al)-Total	0.0310		mg/L		0.1	22-SEP-16
Arsenic (As)-Total	0.00219		mg/L	0.01		22-SEP-16

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-6
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-2
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Nunavut WW Group 1						
Total Metals by ICP-MS						
Cadmium (Cd)-Total	<0.000010		mg/L	0.005		22-SEP-16
Calcium (Ca)-Total	135		mg/L			22-SEP-16
Chromium (Cr)-Total	<0.0010		mg/L	0.05		22-SEP-16
Cobalt (Co)-Total	0.00029		mg/L			22-SEP-16
Copper (Cu)-Total	0.00084		mg/L		1.0	22-SEP-16
Iron (Fe)-Total	0.558		mg/L		0.3	22-SEP-16
Lead (Pb)-Total	0.000123		mg/L	0.01		22-SEP-16
Magnesium (Mg)-Total	22.7		mg/L			22-SEP-16
Manganese (Mn)-Total	0.153		mg/L		0.05	22-SEP-16
Nickel (Ni)-Total	0.0029		mg/L			22-SEP-16
Potassium (K)-Total	35.2		mg/L			22-SEP-16
Sodium (Na)-Total	76.3		mg/L		200	22-SEP-16
Zinc (Zn)-Total	0.0034		mg/L		5.0	22-SEP-16
Sulfate in Water by IC						
Sulfate (SO4)	224		mg/L		500	15-SEP-16
Phenol (4AAP)						
Phenols (4AAP)	0.0055		mg/L			22-SEP-16
Oil & Grease - Gravimetric						
Oil and Grease	<5.0		mg/L			21-SEP-16
Nitrite in Water by IC						
*Nitrite (as N)	<0.020	DLM	mg/L	1		15-SEP-16
Nitrate in Water by IC						
*Nitrate (as N)	<0.040	DLM	mg/L	10		15-SEP-16
Hardness Calculated						
Hardness (as CaCO3)	429	HTC	mg/L		500	23-SEP-16
Conductivity						
Conductivity	1630		umhos/cm			19-SEP-16
Chloride in Water by IC						
Chloride (Cl)	129		mg/L		250	15-SEP-16
Carbonaceous BOD						
BOD Carbonaceous	8.8		mg/L			15-SEP-16
Biochemical Oxygen Demand (BOD)						
Biochemical Oxygen Demand	10.9		mg/L			15-SEP-16
Ammonia by colour						
Ammonia, Total (as N)	3.81		mg/L			20-SEP-16
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as	500		mg/L			19-SEP-16

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-6
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-2
Matrix:

Test Description		Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Nunavut WW Group 1							
Alkalinity, Total (as CaCO3)							
	CaCO3)						
Polyaromatic Hydrocarbons (PAHs)							
	1-Methyl Naphthalene	<0.00020	DLM	mg/L			25-SEP-16
	2-Methyl Naphthalene	<0.00020	DLM	mg/L			25-SEP-16
	Acenaphthene	<0.00020	DLM	mg/L			25-SEP-16
	Acenaphthylene	<0.00020	DLM	mg/L			25-SEP-16
	Anthracene	<0.00010	DLM	mg/L			25-SEP-16
	Acridine	<0.00020	DLM	mg/L			25-SEP-16
	Benzo(a)anthracene	<0.00010	DLM	mg/L			25-SEP-16
	Benzo(a)pyrene	<0.000050	DLM	mg/L	0.00001		25-SEP-16
	Benzo(b&j)fluoranthene	<0.00010	DLM	mg/L			25-SEP-16
	Benzo(g,h,i)perylene	<0.00020	DLM	mg/L			25-SEP-16
	Benzo(k)fluoranthene	<0.00010	DLM	mg/L			25-SEP-16
	Chrysene	<0.00020	DLM	mg/L			25-SEP-16
	Dibenzo(a,h)anthracene	<0.000050	DLM	mg/L			25-SEP-16
	Fluoranthene	<0.00020	DLM	mg/L			25-SEP-16
	Fluorene	<0.00020	DLM	mg/L			25-SEP-16
	Indeno(1,2,3-cd)pyrene	<0.00010	DLM	mg/L			25-SEP-16
	Naphthalene	<0.00050	DLM	mg/L			25-SEP-16
	Phenanthrene	<0.00050	DLM	mg/L			25-SEP-16
	Pyrene	<0.00010	DLM	mg/L			25-SEP-16
	Quinoline	<0.00020	DLM	mg/L			25-SEP-16
	B(a)P Total Potency Equivalent	<0.000072		mg/L			25-SEP-16
Surr:	Acenaphthene d10	85.3		%			25-SEP-16
Surr:	Acridine d9	107.4		%			25-SEP-16
Surr:	Chrysene d12	70.6		%			25-SEP-16
Surr:	Naphthalene d8	101.4		%			25-SEP-16
Surr:	Phenanthrene d10	96.1		%			25-SEP-16

CDWQG = Health Canada Guideline Limits updated **DECEMBER 2015**

* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.
* Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality
- A blank entry designates no known limit.
- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.

Approved by

Hua Wo
Account Manager

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-3
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-3
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Nunavut WW Group 1						
Phosphorus, Total						
Phosphorus (P)-Total	6.90		mg/L			20-SEP-16
Mercury Total						
Mercury (Hg)-Total	<0.00020	DLM	mg/L	0.001		19-SEP-16
Bicarbonate (HCO3)	363		mg/L			20-SEP-16
Carbonate (CO3)	<0.60		mg/L			20-SEP-16
Hydroxide (OH)	<0.34		mg/L			20-SEP-16
Fecal Coliforms	24000	PEHT	MPN/100mL			15-SEP-16
*Nitrate and Nitrite as N	<0.070		mg/L	10		19-SEP-16
pH						
pH	7.46		pH units			19-SEP-16
Total Suspended Solids						
Total Suspended Solids	71.3		mg/L			20-SEP-16
Total Organic Carbon by Combustion						
Total Organic Carbon	40.0		mg/L			20-SEP-16
Total Metals by ICP-MS						
Aluminum (Al)-Total	0.127		mg/L		0.1	22-SEP-16
Arsenic (As)-Total	0.00072		mg/L	0.01		22-SEP-16
Cadmium (Cd)-Total	0.000020		mg/L	0.005		22-SEP-16
Calcium (Ca)-Total	48.1		mg/L			22-SEP-16
Chromium (Cr)-Total	<0.0010		mg/L	0.05		22-SEP-16
Cobalt (Co)-Total	0.00051		mg/L			22-SEP-16
Copper (Cu)-Total	0.0130		mg/L		1.0	22-SEP-16
Iron (Fe)-Total	0.564		mg/L		0.3	22-SEP-16
Lead (Pb)-Total	0.000515		mg/L	0.01		22-SEP-16
Magnesium (Mg)-Total	4.57		mg/L			22-SEP-16
Manganese (Mn)-Total	0.0632		mg/L		0.05	22-SEP-16
Nickel (Ni)-Total	0.0031		mg/L			22-SEP-16
Potassium (K)-Total	19.6		mg/L			22-SEP-16
Sodium (Na)-Total	47.0		mg/L		200	22-SEP-16
Zinc (Zn)-Total	0.0109		mg/L		5.0	22-SEP-16
Sulfate in Water by IC						
Sulfate (SO4)	16.6		mg/L		500	15-SEP-16
Phenol (4AAP)						
Phenols (4AAP)	0.0093		mg/L			22-SEP-16
Oil & Grease - Gravimetric						
Oil and Grease	<5.0		mg/L			21-SEP-16
Nitrite in Water by IC						
*Nitrite (as N)	0.021		mg/L	1		15-SEP-16

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-3
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-3
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Nunavut WW Group 1						
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		15-SEP-16
Hardness Calculated						
Hardness (as CaCO3)	139	HTC	mg/L		500	23-SEP-16
Conductivity						
Conductivity	769		umhos/cm			19-SEP-16
Chloride in Water by IC						
Chloride (Cl)	48.7		mg/L		250	15-SEP-16
Carbonaceous BOD						
BOD Carbonaceous	84		mg/L			15-SEP-16
Biochemical Oxygen Demand (BOD)						
Biochemical Oxygen Demand	103		mg/L			15-SEP-16
Ammonia by colour						
Ammonia, Total (as N)	32.0		mg/L			20-SEP-16
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	298		mg/L			19-SEP-16

CDWQG = Health Canada Guideline Limits updated **DECEMBER 2015**

* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.
* Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality
- A blank entry designates no known limit.
- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.

Approved by

Hua Wo
Account Manager

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-4
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-4
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Nunavut WW Group 1						
Phosphorus, Total						
Phosphorus (P)-Total	0.330		mg/L			20-SEP-16
Mercury Total						
Mercury (Hg)-Total	<0.000020		mg/L	0.001		19-SEP-16
Bicarbonate (HCO3)	298		mg/L			20-SEP-16
Carbonate (CO3)	<0.60		mg/L			20-SEP-16
Hydroxide (OH)	<0.34		mg/L			20-SEP-16
Fecal Coliforms	150	PEHT	MPN/100mL			15-SEP-16
*Nitrate and Nitrite as N	2.61		mg/L	10		19-SEP-16
pH						
pH	8.01		pH units			19-SEP-16
Total Suspended Solids						
Total Suspended Solids	5.0		mg/L			20-SEP-16
Total Organic Carbon by Combustion						
Total Organic Carbon	15.0		mg/L			20-SEP-16
Total Metals by ICP-MS						
Aluminum (Al)-Total	0.0140		mg/L		0.1	22-SEP-16
Arsenic (As)-Total	0.00138		mg/L	0.01		22-SEP-16
Cadmium (Cd)-Total	0.000045		mg/L	0.005		22-SEP-16
Calcium (Ca)-Total	77.3		mg/L			22-SEP-16
Chromium (Cr)-Total	<0.0010		mg/L	0.05		22-SEP-16
Cobalt (Co)-Total	0.00114		mg/L			22-SEP-16
Copper (Cu)-Total	0.00527		mg/L		1.0	22-SEP-16
Iron (Fe)-Total	0.200		mg/L		0.3	22-SEP-16
Lead (Pb)-Total	<0.000090		mg/L	0.01		22-SEP-16
Magnesium (Mg)-Total	5.93		mg/L			22-SEP-16
Manganese (Mn)-Total	0.0884		mg/L		0.05	22-SEP-16
Nickel (Ni)-Total	0.0047		mg/L			22-SEP-16
Potassium (K)-Total	13.4		mg/L			22-SEP-16
Sodium (Na)-Total	38.2		mg/L		200	22-SEP-16
Zinc (Zn)-Total	0.0026		mg/L		5.0	22-SEP-16
Sulfate in Water by IC						
Sulfate (SO4)	21.3		mg/L		500	15-SEP-16
Phenol (4AAP)						
Phenols (4AAP)	0.0025		mg/L			22-SEP-16
Oil & Grease - Gravimetric						
Oil and Grease	<5.0		mg/L			21-SEP-16
Nitrite in Water by IC						
*Nitrite (as N)	0.041		mg/L	1		15-SEP-16

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-4
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-4
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Nunavut WW Group 1						
Nitrate in Water by IC						
*Nitrate (as N)	2.57		mg/L	10		15-SEP-16
Hardness Calculated						
Hardness (as CaCO3)	217	HTC	mg/L		500	23-SEP-16
Conductivity						
Conductivity	630		umhos/cm			19-SEP-16
Chloride in Water by IC						
Chloride (Cl)	42.9		mg/L		250	15-SEP-16
Carbonaceous BOD						
BOD Carbonaceous	3.2		mg/L			15-SEP-16
Biochemical Oxygen Demand (BOD)						
Biochemical Oxygen Demand	2.9		mg/L			15-SEP-16
Ammonia by colour						
Ammonia, Total (as N)	2.69		mg/L			20-SEP-16
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	244		mg/L			19-SEP-16

CDWQG = Health Canada Guideline Limits updated **DECEMBER 2015**

* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.
* Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality
- A blank entry designates no known limit.
- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.

Approved by

Hua Wo
Account Manager

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-5
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-5
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Nunavut WW Group 1						
Phosphorus, Total						
Phosphorus (P)-Total	0.102		mg/L			20-SEP-16
Mercury Total						
Mercury (Hg)-Total	<0.000020		mg/L	0.001		19-SEP-16
Bicarbonate (HCO3)	253		mg/L			20-SEP-16
Carbonate (CO3)	7.92		mg/L			20-SEP-16
Hydroxide (OH)	<0.34		mg/L			20-SEP-16
Fecal Coliforms	<3	PEHT	MPN/100mL			15-SEP-16
*Nitrate and Nitrite as N	1.03		mg/L	10		19-SEP-16
pH						
pH	8.55		pH units			19-SEP-16
Total Suspended Solids						
Total Suspended Solids	<5.0		mg/L			20-SEP-16
Total Organic Carbon by Combustion						
Total Organic Carbon	13.2		mg/L			20-SEP-16
Total Metals by ICP-MS						
Aluminum (Al)-Total	0.0079		mg/L		0.1	22-SEP-16
Arsenic (As)-Total	0.00037		mg/L	0.01		22-SEP-16
Cadmium (Cd)-Total	0.000034		mg/L	0.005		22-SEP-16
Calcium (Ca)-Total	60.4		mg/L			22-SEP-16
Chromium (Cr)-Total	<0.0010		mg/L	0.05		22-SEP-16
Cobalt (Co)-Total	0.00108		mg/L			22-SEP-16
Copper (Cu)-Total	0.00262		mg/L		1.0	22-SEP-16
Iron (Fe)-Total	0.060		mg/L		0.3	22-SEP-16
Lead (Pb)-Total	<0.000090		mg/L	0.01		22-SEP-16
Magnesium (Mg)-Total	5.91		mg/L			22-SEP-16
Manganese (Mn)-Total	0.0173		mg/L		0.05	22-SEP-16
Nickel (Ni)-Total	0.0044		mg/L			22-SEP-16
Potassium (K)-Total	5.26		mg/L			22-SEP-16
Sodium (Na)-Total	49.2		mg/L		200	22-SEP-16
Zinc (Zn)-Total	0.0045		mg/L		5.0	22-SEP-16
Sulfate in Water by IC						
Sulfate (SO4)	14.6		mg/L		500	15-SEP-16
Phenol (4AAP)						
Phenols (4AAP)	0.0021		mg/L			22-SEP-16
Oil & Grease - Gravimetric						
Oil and Grease	<5.0		mg/L			21-SEP-16
Nitrite in Water by IC						
*Nitrite (as N)	0.037		mg/L	1		15-SEP-16

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

Date: 21-OCT-16
PO No.:
WO No.: L1828747
Project Ref: CORAL HARBOUR NUNAVUT
Sample ID: COR-5
Sampled By:
Date Collected: 13-SEP-16
Lab Sample ID: L1828747-5
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Nunavut WW Group 1						
Nitrate in Water by IC						
*Nitrate (as N)	0.992		mg/L	10		15-SEP-16
Hardness Calculated						
Hardness (as CaCO3)	175	HTC	mg/L		500	23-SEP-16
Conductivity						
Conductivity	542		umhos/cm			19-SEP-16
Chloride in Water by IC						
Chloride (Cl)	41.6		mg/L		250	15-SEP-16
Carbonaceous BOD						
BOD Carbonaceous	4.4		mg/L			15-SEP-16
Biochemical Oxygen Demand (BOD)						
Biochemical Oxygen Demand	4.3		mg/L			15-SEP-16
Ammonia by colour						
Ammonia, Total (as N)	0.025		mg/L			20-SEP-16
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	220		mg/L			19-SEP-16

CDWQG = Health Canada Guideline Limits updated **DECEMBER 2015**

* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.
* Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality
- A blank entry designates no known limit.
- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.

Approved by

Hua Wo
Account Manager

Guidelines & Objectives

Sample Parameter Qualifier key listed:

Qualifier	Description
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO3-1
Carbonate	See Alkalinity. Reported at the anion CO3-2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).The aesthetic objective (not related to health) for sodium in drinking water is 200 mg/L. However, where sodium concentration of the drinking water exceeds 20 mg/L, it is recommended that any person on a sodium restricted diet consult with his/her physician or Medical Officer of Health concerning the use of that water.
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Manganese	Elevated levels may cause staining of laundry and porcelain.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

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.

Quality Control Report

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

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP	**Water**							
Batch R3552551								
WG2392241-9 LCS								
Alkalinity, Total (as CaCO3)			104.8		%		85-115	19-SEP-16
WG2392241-6 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	19-SEP-16
BOD-CBOD-WP	**Water**							
Batch R3552662								
WG2389033-7 LCS								
BOD Carbonaceous			105.2		%		85-115	15-SEP-16
WG2389033-6 MB								
BOD Carbonaceous			<2.0		mg/L		2	15-SEP-16
BOD-WP	**Water**							
Batch R3552662								
WG2389033-7 LCS								
Biochemical Oxygen Demand			108.5		%		85-115	15-SEP-16
WG2389033-6 MB								
Biochemical Oxygen Demand			<2.0		mg/L		2	15-SEP-16
BTEXS+F1-HSMS-WP	**Water**							
Batch R3552234								
WG2389911-2 LCS								
Benzene			107.3		%		70-130	15-SEP-16
Toluene			112.8		%		70-130	15-SEP-16
Ethyl benzene			109.2		%		70-130	15-SEP-16
o-Xylene			109.9		%		70-130	15-SEP-16
m+p-Xylenes			105.5		%		70-130	15-SEP-16
WG2389911-3 LCS								
F1 (C6-C10)			86.1		%		70-130	15-SEP-16
WG2389911-1 MB								
Benzene			<0.00050		mg/L		0.0005	15-SEP-16
Toluene			<0.0010		mg/L		0.001	15-SEP-16
Ethyl benzene			<0.00050		mg/L		0.0005	15-SEP-16
o-Xylene			<0.00050		mg/L		0.0005	15-SEP-16
m+p-Xylenes			<0.00050		mg/L		0.0005	15-SEP-16
F1 (C6-C10)			<0.10		mg/L		0.1	15-SEP-16
Surrogate: 4-Bromofluorobenzene (SS)			102.3		%		70-130	15-SEP-16
C-TOC-HTC-WP	**Water**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-TOC-HTC-WP	**Water**							
Batch R3553194								
WG2393167-2 LCS								
Total Organic Carbon			99.0		%		80-120	20-SEP-16
WG2393167-1 MB								
Total Organic Carbon			<0.50		mg/L		0.5	20-SEP-16
CL-IC-N-WP	**Water**							
Batch R3549924								
WG2389258-14 LCS								
Chloride (Cl)			100.5		%		90-110	15-SEP-16
WG2389258-13 MB								
Chloride (Cl)			<0.50		mg/L		0.5	15-SEP-16
EC-WP	**Water**							
Batch R3552551								
WG2392241-8 LCS								
Conductivity			100.7		%		90-110	19-SEP-16
WG2392241-6 MB								
Conductivity			<1.0		umhos/cm		1	19-SEP-16
F2-F4-FID-WP	**Water**							
Batch R3550266								
WG2389423-2 LCS								
F2 (C10-C16)			98.2		%		70-130	15-SEP-16
F3 (C16-C34)			106.9		%		70-130	15-SEP-16
F4 (C34-C50)			109.6		%		70-130	15-SEP-16
WG2389423-1 MB								
F2 (C10-C16)			<0.10		mg/L		0.1	15-SEP-16
F3 (C16-C34)			<0.25		mg/L		0.25	15-SEP-16
F4 (C34-C50)			<0.25		mg/L		0.25	15-SEP-16
Surrogate: 2-Bromobenzotrifluoride			96.6		%		60-140	15-SEP-16
FC-MPN-WP	**Water**							
Batch R3555045								
WG2389129-2 MB								
Fecal Coliforms			<3		MPN/100mL		3	15-SEP-16
HG-T-CVAF-WP	**Water**							
Batch R3553539								
WG2392877-2 LCS								
Mercury (Hg)-Total			95.3		%		80-120	19-SEP-16
WG2392877-1 MB								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAF-WP	**Water**							
Batch R3553539								
WG2392877-1 MB								
Mercury (Hg)-Total			<0.000020		mg/L		0.00002	19-SEP-16
MET-T-L-MS-WP	**Water**							
Batch R3554926								
WG2394276-2 LCS								
Aluminum (Al)-Total			102.3		%		80-120	22-SEP-16
Arsenic (As)-Total			97.7		%		80-120	22-SEP-16
Cadmium (Cd)-Total			97.5		%		80-120	22-SEP-16
Calcium (Ca)-Total			94.4		%		80-120	22-SEP-16
Chromium (Cr)-Total			98.5		%		80-120	22-SEP-16
Cobalt (Co)-Total			95.5		%		80-120	22-SEP-16
Copper (Cu)-Total			97.0		%		80-120	22-SEP-16
Iron (Fe)-Total			100.3		%		80-120	22-SEP-16
Lead (Pb)-Total			99.0		%		80-120	22-SEP-16
Magnesium (Mg)-Total			96.1		%		80-120	22-SEP-16
Manganese (Mn)-Total			101.4		%		80-120	22-SEP-16
Nickel (Ni)-Total			92.8		%		80-120	22-SEP-16
Potassium (K)-Total			101.7		%		80-120	22-SEP-16
Sodium (Na)-Total			95.6		%		80-120	22-SEP-16
Zinc (Zn)-Total			96.8		%		80-120	22-SEP-16
WG2394276-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	22-SEP-16
Arsenic (As)-Total			<0.00020		mg/L		0.0002	22-SEP-16
Cadmium (Cd)-Total			<0.000010		mg/L		0.00001	22-SEP-16
Calcium (Ca)-Total			<0.10		mg/L		0.1	22-SEP-16
Chromium (Cr)-Total			<0.0010		mg/L		0.001	22-SEP-16
Cobalt (Co)-Total			<0.00020		mg/L		0.0002	22-SEP-16
Copper (Cu)-Total			<0.00020		mg/L		0.0002	22-SEP-16
Iron (Fe)-Total			<0.010		mg/L		0.01	22-SEP-16
Lead (Pb)-Total			<0.000090		mg/L		0.00009	22-SEP-16
Magnesium (Mg)-Total			<0.010		mg/L		0.01	22-SEP-16
Manganese (Mn)-Total			<0.00030		mg/L		0.0003	22-SEP-16
Nickel (Ni)-Total			<0.0020		mg/L		0.002	22-SEP-16
Potassium (K)-Total			<0.020		mg/L		0.02	22-SEP-16
Sodium (Na)-Total			<0.030		mg/L		0.03	22-SEP-16

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-L-MS-WP	**Water**							
Batch R3554926								
WG2394276-1 MB								
Zinc (Zn)-Total			<0.0020		mg/L		0.002	22-SEP-16
NH3-COL-WP	**Water**							
Batch R3553331								
WG2393223-10 LCS								
Ammonia, Total (as N)			101.0		%		85-115	20-SEP-16
WG2393223-9 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	20-SEP-16
NO2-IC-N-WP	**Water**							
Batch R3549924								
WG2389258-14 LCS								
Nitrite (as N)			100.6		%		90-110	15-SEP-16
WG2389258-13 MB								
Nitrite (as N)			<0.010		mg/L		0.01	15-SEP-16
NO3-IC-N-WP	**Water**							
Batch R3549924								
WG2389258-14 LCS								
Nitrate (as N)			100.8		%		90-110	15-SEP-16
WG2389258-13 MB								
Nitrate (as N)			<0.020		mg/L		0.02	15-SEP-16
OG-GRAV-WP	**Water**							
Batch R3554696								
WG2393372-2 LCS								
Oil and Grease			88.1		%		70-130	21-SEP-16
WG2393372-1 MB								
Oil and Grease			<5.0		mg/L		5	21-SEP-16
P-T-COL-WP	**Water**							
Batch R3552671								
WG2391219-14 LCS								
Phosphorus (P)-Total			94.2		%		80-120	20-SEP-16
WG2391219-13 MB								
Phosphorus (P)-Total			<0.010		mg/L		0.01	20-SEP-16
PAH,PANH-WP	**Water**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP	**Water**							
Batch R3552771								
WG2392329-2 LCS								
1-Methyl Naphthalene			84.2		%		60-130	20-SEP-16
2-Methyl Naphthalene			88.3		%		60-130	20-SEP-16
Acenaphthene			87.6		%		60-130	20-SEP-16
Acenaphthylene			86.7		%		60-130	20-SEP-16
Anthracene			82.9		%		60-130	20-SEP-16
Acridine			96.7		%		60-130	20-SEP-16
Benzo(a)anthracene			92.0		%		60-130	20-SEP-16
Benzo(a)pyrene			106.0		%		60-130	20-SEP-16
Benzo(b&j)fluoranthene			85.5		%		60-130	20-SEP-16
Benzo(g,h,i)perylene			97.2		%		60-130	20-SEP-16
Benzo(k)fluoranthene			94.2		%		60-130	20-SEP-16
Chrysene			91.8		%		60-130	20-SEP-16
Dibenzo(a,h)anthracene			100.5		%		60-130	20-SEP-16
Fluoranthene			85.0		%		60-130	20-SEP-16
Fluorene			83.8		%		60-130	20-SEP-16
Indeno(1,2,3-cd)pyrene			92.2		%		60-130	20-SEP-16
Naphthalene			85.7		%		50-130	20-SEP-16
Phenanthrene			85.6		%		60-130	20-SEP-16
Pyrene			86.2		%		60-130	20-SEP-16
Quinoline			91.1		%		60-130	20-SEP-16
WG2392329-1 MB								
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	20-SEP-16
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	20-SEP-16
Acenaphthene			<0.000020		mg/L		0.00002	20-SEP-16
Acenaphthylene			<0.000020		mg/L		0.00002	20-SEP-16
Anthracene			<0.000010		mg/L		0.00001	20-SEP-16
Acridine			<0.000020		mg/L		0.00002	20-SEP-16
Benzo(a)anthracene			<0.000010		mg/L		0.00001	20-SEP-16
Benzo(a)pyrene			<0.000005		mg/L		0.000005	20-SEP-16
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	20-SEP-16
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	20-SEP-16
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	20-SEP-16
Chrysene			<0.000020		mg/L		0.00002	20-SEP-16
Dibenzo(a,h)anthracene			<0.000005		mg/L		0.000005	20-SEP-16

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP	**Water**							
Batch R3552771								
WG2392329-1 MB								
Fluoranthene			<0.000020		mg/L		0.00002	20-SEP-16
Fluorene			<0.000020		mg/L		0.00002	20-SEP-16
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	20-SEP-16
Naphthalene			<0.000050		mg/L		0.00005	20-SEP-16
Phenanthrene			<0.000050		mg/L		0.00005	20-SEP-16
Pyrene			<0.000010		mg/L		0.00001	20-SEP-16
Quinoline			<0.000020		mg/L		0.00002	20-SEP-16
Surrogate: Acenaphthene d10			93.7		%		40-130	20-SEP-16
Surrogate: Acridine d9			96.1		%		40-130	20-SEP-16
Surrogate: Chrysene d12			100.3		%		40-130	20-SEP-16
Surrogate: Naphthalene d8			84.1		%		40-130	20-SEP-16
Surrogate: Phenanthrene d10			86.2		%		40-130	20-SEP-16
PH-WP	**Water**							
Batch R3552551								
WG2392241-7 LCS								
pH			7.41		pH units		7.3-7.5	19-SEP-16
PHENOLS-4AAP-WT	**Water**							
Batch R3554993								
WG2394338-2 LCS								
Phenols (4AAP)			104.4		%		85-115	22-SEP-16
WG2394338-1 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	22-SEP-16
SO4-IC-N-WP	**Water**							
Batch R3549924								
WG2389258-14 LCS								
Sulfate (SO4)			100.6		%		90-110	15-SEP-16
WG2389258-13 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	15-SEP-16
SOLIDS-TOTSUS-WP	**Water**							
Batch R3553449								
WG2392166-10 LCS								
Total Suspended Solids			104.0		%		85-115	20-SEP-16
WG2392166-9 MB								
Total Suspended Solids			<5.0		mg/L		5	20-SEP-16

Quality Control Report

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	1	13-SEP-16 08:45	19-SEP-16 12:05	0.25	147	hours	EHTR-FM
	2	13-SEP-16 09:00	19-SEP-16 12:05	0.25	147	hours	EHTR-FM
	3	13-SEP-16 09:15	19-SEP-16 12:05	0.25	147	hours	EHTR-FM
	4	13-SEP-16 09:30	19-SEP-16 12:05	0.25	147	hours	EHTR-FM
	5	13-SEP-16 10:00	19-SEP-16 12:05	0.25	146	hours	EHTR-FM
Anions and Nutrients							
Nitrate in Water by IC							
	1	13-SEP-16 08:45	15-SEP-16 12:00	48	51	hours	EHTL
	2	13-SEP-16 09:00	15-SEP-16 12:00	48	51	hours	EHTL
	3	13-SEP-16 09:15	15-SEP-16 12:00	48	51	hours	EHTL
	4	13-SEP-16 09:30	15-SEP-16 12:00	48	50	hours	EHTL
	5	13-SEP-16 10:00	15-SEP-16 12:00	48	50	hours	EHTL
Nitrite in Water by IC							
	1	13-SEP-16 08:45	15-SEP-16 12:00	48	51	hours	EHTL
	2	13-SEP-16 09:00	15-SEP-16 12:00	48	51	hours	EHTL
	3	13-SEP-16 09:15	15-SEP-16 12:00	48	51	hours	EHTL
	4	13-SEP-16 09:30	15-SEP-16 12:00	48	50	hours	EHTL
	5	13-SEP-16 10:00	15-SEP-16 12:00	48	50	hours	EHTL
Bacteriological Tests							
Fecal Coliform							
	1	13-SEP-16 08:45	15-SEP-16 11:50	30	51	hours	EHTR
	2	13-SEP-16 09:00	15-SEP-16 11:50	30	51	hours	EHTR
	3	13-SEP-16 09:15	15-SEP-16 11:50	30	51	hours	EHTR
	4	13-SEP-16 09:30	15-SEP-16 11:50	30	50	hours	EHTR
	5	13-SEP-16 10:00	15-SEP-16 11:50	30	50	hours	EHTR
Aggregate Organics							
Biochemical Oxygen Demand (BOD)							
	1	13-SEP-16 08:45	15-SEP-16 14:43	48	54	hours	EHTL
	2	13-SEP-16 09:00	15-SEP-16 14:43	48	54	hours	EHTL
	3	13-SEP-16 09:15	15-SEP-16 14:43	48	54	hours	EHTL
	4	13-SEP-16 09:30	15-SEP-16 14:43	48	53	hours	EHTL
	5	13-SEP-16 10:00	15-SEP-16 14:43	48	53	hours	EHTL
Carbonaceous BOD							
	1	13-SEP-16 08:45	15-SEP-16 14:44	48	54	hours	EHTL
	2	13-SEP-16 09:00	15-SEP-16 14:44	48	54	hours	EHTL
	3	13-SEP-16 09:15	15-SEP-16 14:44	48	54	hours	EHTL
	4	13-SEP-16 09:30	15-SEP-16 14:44	48	53	hours	EHTL
	5	13-SEP-16 10:00	15-SEP-16 14:44	48	53	hours	EHTL

Legend & Qualifier Definitions:

EHTR-FM:	Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR:	Exceeded ALS recommended hold time prior to sample receipt.
EHTL:	Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT:	Exceeded ALS recommended hold time prior to analysis.
Rec. HT:	ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1828747 were received on 14-SEP-16 16:20.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

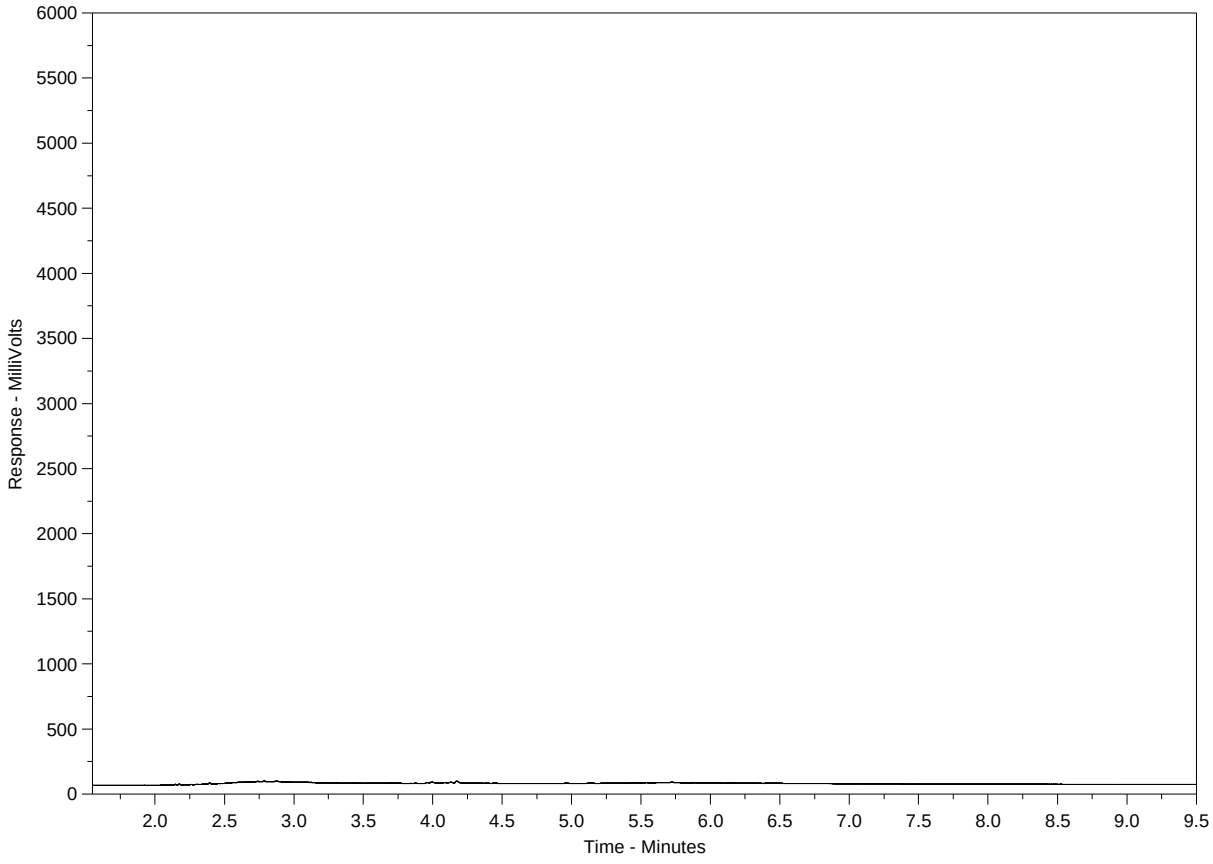
Quality Control Report

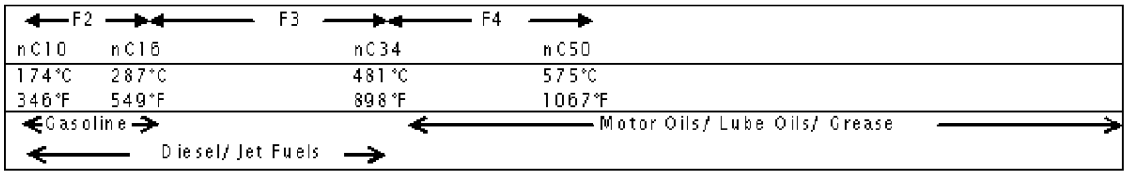
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1828747-1
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.

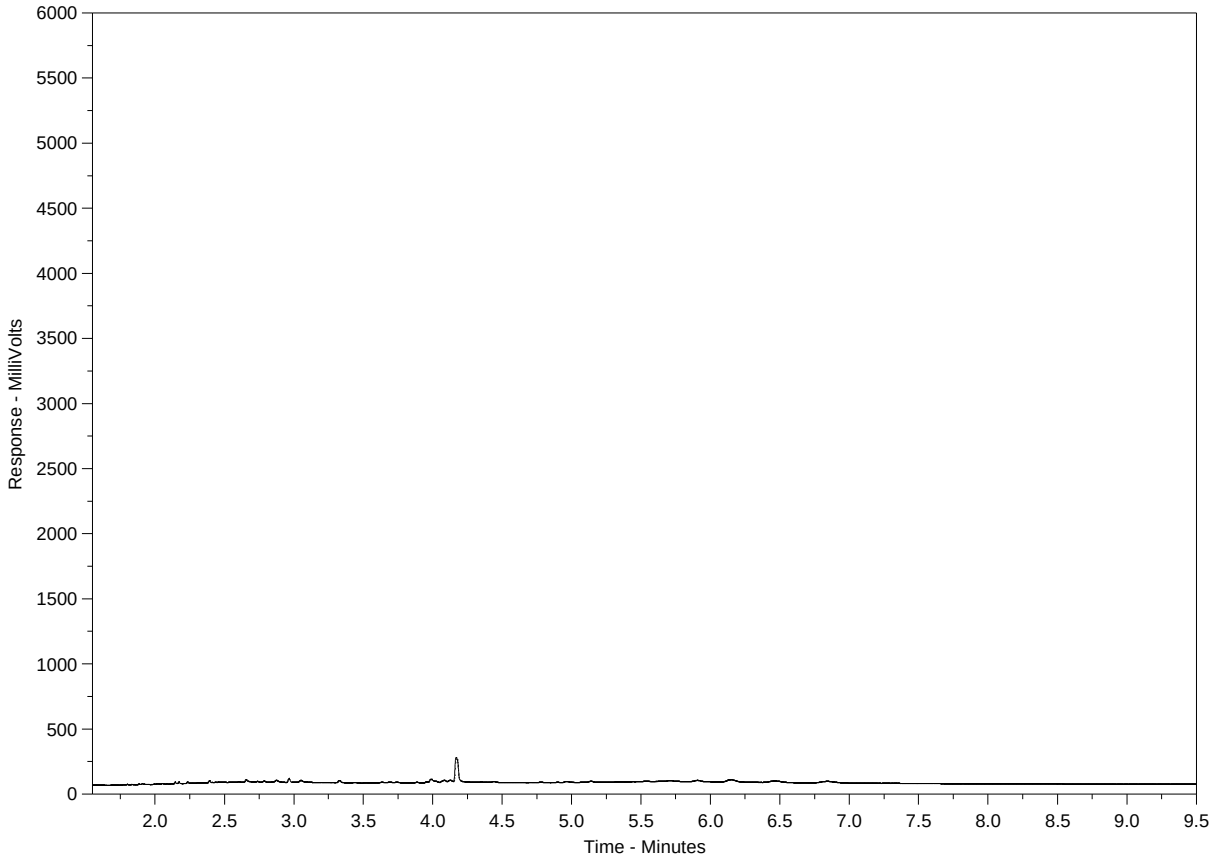
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

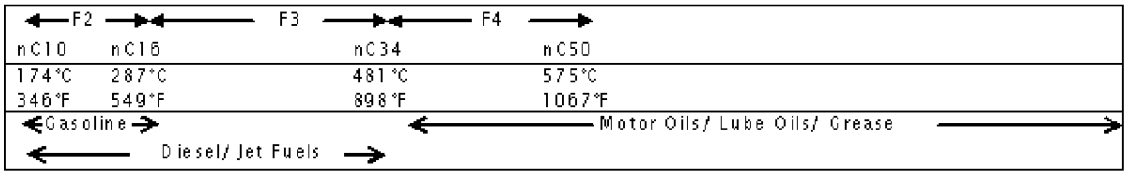
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1828747-2
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.

10 - 373786

ALS Environmental

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

L1828747-COFC

Report To		Report Format / Distribution		Service Request:
Company:	Hamlet of Coral Harbour	Standard: ✓ Other (specify):		✓ Regular (Sta
Contact:	Leonie Pamelolik	Select: PDF ✓ Excel Digital Fax		Priority(2-4 E
Address:	P.O. Box 30 Coral Harbour NU X0C0C0	Email 1:		Emergency (1-2 Business Days)
		Email 2: Munch@qiniq.com		Same Day or Weekend Emergency - Contact ALS to confirm TAT
Phone:	(867) 925 8867 Fax: 867 925 8233			

Invoice To	Same as Report ? (circle) (Yes) or No (if No, provide details)	Client / Project Information	
	Copy of Invoice with Report? (circle) (Yes) or No	Job #:	Coral Harbour Nunami
Company:	Coral Harbour Monitoring Program	PO / AFE:	
Contact:		LSD:	
Address:	SAME As Above		
Phone:	Fax:	Quote #:	JBM-Cor 0813
Lab Work Order # (lab use only)		ALS Contact: Craig	Sampler:

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

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Bod-wp	Phenol-wp	TSS	NH3-Col-wp	Phenols	Bacteria	Oil Grease	PAH	B-Tex	F2-F4			Number of Containers
1	Cor - 7	13/09/16	8:45		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			14
2	Cor - 6	"	900		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			14
3	Cor - 3	"	915		✓	✓	✓	✓	✓	✓	✓	✓					8
4	Cor - 4	"	930		✓	✓	✓	✓	✓	✓	✓	✓					8
5	Cor - 5	"	1000		✓	✓	✓	✓	✓	✓	✓	✓					8

Special Instructions / Regulation with water or land use (CCME- Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

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.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Corey Pamelolik	13/09/16	10:30		Sept 14/16	4:30pm	12 °C				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY — GENF 18.01 Front

Hazardous Materials Spill Database

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

Sorted By: SpillNo for the year (s): **2016**

Spill No.	Date	Ter	Region	Location	Site Description	Commodity	Quantity	Source	Agency
2016152	2016-05-04	NU	KEE	Coral Harbour	Housing Unit 57	P50 Heating Fuel	820 L	PL	GN
2016155	2016-05-09	NU	KEE	Coral Harbour	Public Housing Unit 201	Heating Fuel	205 L	ST<	GN
2016223	2016-06-16	NU	KEE	Coral Harbour	Coral Harbour, Nunavut	P50 Heating Fuel	0 L	PL	GN
2016303	2016-08-22	NU	KEE	Coral Harbour	Coral Harbour, unit 464	Heating fuel	0 L	UK	GN

Total Spills on this Report: 4

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

LEGEND

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

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

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