Annual Report 2020

Water License: 3BM-CAM 2030

Contents

April 7, 2021

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1L0

Attention: Richard Dwyer, Manager of Licensing

Dear Richard,

The Hamlet of Cambridge Bay is pleased to submit the 2020 Annual Report 2020 for water use and disposal of waste as required under the 3BM- CAM-2030 water license.

The estimated water use and wastewater generation in 2020 was 84,177 m^3. Sampling of sewage effluent and solid waste run-off as identified in the license were tested at Taiga Laboratory (CALA accredited) in Yellowknife. The effluent sampled at the final discharge point CAM-6 was below the allowable limits for BOD and TSS.

Thank you for your consideration. Please do not hesitate to contact me with any questions or concerns.

Regards,

Sarah Collins P. Eng
Municipal Planning Engineer
Government of Nunavut
Community and Government Services
Phone: 867-975-5478; Email: scollins@gov.nu.ca

Executive Summary

The Hamlet of Cambridge Bay has prepared this 2020 Annual Report to be submitted to the Nunavut Water Board (NWB) to meet requirements of the Water Licence 3BM-CAM 2030, Part B General Conditions. This report covers the period from January 01- December 31, 2020.

The potable water source Water Lake is connected to other upstream lakes in the watershed. Water is drawn through the twin intake lines, one at a time into the intake pumphouse from which water is transported through a 1760 m HDPE buried line to the water treatment plant. Raw water is treated using chlorination, filtration, and UV lights. Treated water is stored in a 570 m^3 tank until drawn by the truckfill for delivery. A separate pump supplies a high-pressure line for the health center, CHARS and for firefighting. The estimated quantity of water used in 2020 is 84,177 m^3 which is below allowable limit of 94,000 m^3. The new Arctic College campus, new daycare facility and Mining Training Centre will increase water consumption in the municipality.

The sewage lagoon wetland system is made up of a series of natural lakes that were modified to improve retention time and increase the capacity to 190,000 m3. The lagoon is located approximately 0.8 km northeast from community. Raw sewage is deposited into the primary lagoon after collection from building holding tanks using hamlet operated trucks. Effluent moves from the primary lagoon over a weir into the retention lagoon where it remains for approximately 9 months until it is decanted out by mechanical pump during July and August. Sewage samples collected from the monitoring stations are tested at Taiga Laboratory in Yellowknife prior to decanting approval and to determine effluent treatment compliance.

Municipal waste is comprised of domestic, metal, and hazardous waste such as batteries, waste oil, paint, tires, and electronic wastes. Domestic waste is disposed at the designated area or cell where it is compacted and covered with sand-gravels. The solid waste and metal dump sites were re-developed in 2012 with increased capacity. Paper, boxes, and light woods are normally burned inside trenches when wind is low. Waste batteries and e-waste are secured inside C-cans for shipping out. Waste oils is burned on site using slow burning kits. Contaminated soil bags were moved to nearby soil remediation farm of private owner.

Part B: General Conditions:

- Annual water supply and wastewater disposal are recorded daily into the Tabular Form based on annual water delivery billing records. A flow meter is installed at the treatment plant that records the volume coming through intake however the data is not used for this annual report.
- Quantities of water are measured from the truck-fill volume and waste deposition from truck-collected daily /weekly basis from house bins.
- Raw sewage is hauled from sewage tanks and deposited at the designated location of the lagoon. Raw sewage is contained until decanting to the outer cell by pump in July and August.
- O&M manuals for wastewater and solid waste facilities remained active since 2013. The O&M manual for new intake pumphouse is active since May 2015.
- O&M manual and as-built drawings for water treatment plant were submitted to NWB.
- Annual Compliance plan remains effective as approved by the Board for facility operation.

Part C: Water Uses:

- Water Lake is the approved water source for Cambridge Bay. 84,177 m^3 water was drawn in 2020 which is below the annual limit of 94,2000 m^3
- There is no erosion at the intake point or in proximity to the pumphouse.
- The fuel tank at the intake pumphouse will be moved to a new location more than 30m from the measured water mark by July 15, 2021.
- The intake water travels to the treatment plant through a buried HDPE pipe line. Treatment includes chlorination, filtration and UV disinfection followed by secondary chlorination at the truckfill prior to distribution. Hamlet operated trucks supply treated water 7 days a week during regular hours and on call after hours to communit water tanks.
- CHARS receives water from the last vault of the buried loop line using a separate pump to a tank and distributes through pipes to houses. CHARS research lab requires further treatment of the water in-house for the biological and chemical processes.

Part D: Waste Disposal

Wastewater:

- Municipal sewage waste remains in tanks for 3-4 days before collection by vacuum truck and discharge into the lagoon.

- The amount of sewage generated during this period (Jan–Dec 2020) is estimated to be equal to the water consumption.
- Sewage and effluent samples taken from monitoring station CAM-3, CAM-4, CAM-5 and Final Discharge Point CAM-6. CAM-5 and CAM-6 are tested for parameters of environmental compliance, results are attached.
- Freeboard is maintained 1.5 m down from top of berm.
- Sewage is decanted into the perforated filter structure from the lagoon by mechanical pump into the waiting cell from where effluent passes through gravel berm facilities towards the final discharge area. Test results of effluent sample from the Final Discharge Point CAM-6 show BOD and TSS are within allowable limits. Results are attached in the appendix.

Non-Hazardous Domestic Solid Waste:

- Solid waste is collected from waste bins by hamlet operators, hauled to waste facility by truck and piled up in designated location inside the facility. Waste is then pushed into a lower graded trench, packed, and covered with sand-gravel using a grader and packer.
- Municipal waste is comprised of domestic, metal, and hazardous waste such as batteries, waste oil, paint, tires, and electronic wastes.
- Domestic waste is disposed at the designated area or cell where it is compacted and covered with sand-gravels. The solid waste and metal dump sites were re-developed in 2012 with increased capacity.
- Paper, boxes, and light woods are normally burned inside trenches when wind is low.
- Waste batteries and e-waste are secured inside C-cans for shipping out.
- Waste oils is burned on site using slow burning kits.
- Contaminated soil bags were moved to nearby soil remediation farm of private owner.

Part E-G: Modification, construction, operation, A&R

- No modifications to sewage collection, transportation, and disposal facilities.
- No modification to solid waste and metal dump facilities. Extensive cleanup of spills sheen of waste oil, paints and leachate from contaminated soils bags have been done from liner cell inside and berm and moved those soil bags to the land farm.
- Waste batteries, waste oil, waste paint and hazardous substances secured inside wooden boxes and moved to C-cans onsite.
- No A&R plan for any facility or component and therefore no changes to O&M manuals for sewage lagoon, solid waste, metal dump, and pump house.
- O&M manual for new WTP has submitted to NWB
- No spills occurred during this period.
- No reclamation to facilities and no activities related to vegetation growth or seed deposition

Part H: Monitoring Program:

- Annual monitoring of sewage and solid waste effluent has been carried during the summer and fall.

ANNUAL REPORT

YEAR BEING REPORTED: 2020

The following information is compiled pursuant to the requirements of Part B, Item 1 of the Water License 3BM CAM-2030 issued to the Hamlet of Cambridge Bay.

i-iii)

tabular summaries of all data generated under the “Monitoring Program”; monthly and annual quantities in cubic meters of freshwater obtained from all sources; monthly and annual quantities in cubic meters of each and all wastes discharged.

Attached are the detailed chemical, physical and biological analysis required at results for Monitoring Stations CAM-3, CAM-4 and CAM-5, CAM-6.

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged
January	7,354,964	Same
February	7,045,130	Same
March	7,532,791	Same
April	6,801,023	Same
May	6,888,475	Same
June	6,643,001	Same
July	6,984,003	Same
August	6,872,708	Same
September	6,742,537	Same
October	7,280,297	Same
November	7,161,105	Same
December	6,870,616	Same
ANNUAL TOTAL	**84,176,657**	Same

ANNUAL REPORT

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

None.

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

No reported unauthorized discharge of water, sewage waste happened during the period.

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 studies

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

None.

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

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

No changes.

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

None.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

None.

ANNUAL REPORT

Table 1 2020 Cambridge Bay Effluent Log

Parameters	Units	Limits	Limit CAM-5	Limits CAM-6	July 07 2020			September 10, 2020		
					Cam-3	Cam-4	Cam-5	Cam-3	Cam-5	Cam-6
Alkalinity	mg/L				215	224	197	218	218	217
Conductivity	µS/cm				755	2760	807	958	968	977
pH	pH	6-9	6-9	6-9	7.64	7.89	9.40	8.95	9.03	8.88
TSS	mg/L	180	120	120	61	30	76	71	59	62
BOD	mg/L	120	100	100	25	24	23	24	22	28
CBOD	mg/L				19	16	17	22	23	28
Total, C	mg/L				47.2	63.6	65.0	57.1	64	53.8
Nitrate as N_2	mg/L	45			<0.020	0.0580	<0.0200	3.25	2.95	2.57
Nitrite as N_2	mg/L	3			<0.010	0.0110	<0.0100	0.41	0.44	0.42
Calcium	mg/L	32			27.6	288	46.2	43.5	43.5	44.4
Chloride	mg/L	100			94.1	281	130	153	155	157
Hardness	mg/L	500			158	0.160	242	-	-	-
Magnesium	mg/L				21.6	82.7	30.8	32.7	32.7	33.7
Potassium	mg/L				13.6	70.6	14.3	19.8	20	20
Sodium	mg/L	200			54.8	156	65.8	101	103	101
Sulphate	mg/L	500			11.6	922	37.2	24	25	25
Fecal Coliform	CFU/100mL	$1x10^6$	$1x10^6$	$1x10^6$	1900	10	<10	80	70	10
Oil & Grease, Visible	Visibility		NV	NV	NV	NV	NV	NV	NV	NV
Cadmium	µg/L	5			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	µg/L	50			0.4	1.8	0.4	0.3	0.3	0.5
Cobalt	µg/L	50			0.4	3.9	0.4	-	-	-
Copper	µg/L	200			39.9	28.3	3.7	12.2	11.4	11.4
Iron	µg/L	500			1000	11400	371	1050	1010	1260
Lead	µg/L	10			0.4	4.3	1.1	0.5	0.6	1.2
Manganese	µg/L	50			90.3	292	66.3	91.1	85.3	96.8
Mercury	µg/L				0.02	0.02	0.01	<0.01	<0.01	<0.01
Nickel	µg/L	200			1.6	23.0	2.9	2.5	2.4	2.7
Zinc	µg/L	500			36.5	62.3	25.4	12.9	12.4	18.9
Phenol, Total	µg/L				<0.001	0.0028	<0.001	<0.001	<0.001	<0.001

ANNUAL REPORT

Table 2 Water Quality Summary

Parameters			June 25 2020			
	Units	MAC	Water Lake	WTP-01	WTP-02	Water Truck
Colour	TCU	<=15	<5	5	<5	6
pH	pH	7.0 - 10.5	6.71	7.42	7.50	7.75
Turbidity	NTU	<=5	0.67	0.25	0.27	0.29
TDS	mg/L		<10	432	422	488
TSS	mg/L		18	14	12	6
Alkalinity	mg/L		2.9	218	220	220
Conductivity	µs/cm		9.4	782	806	807
Dissolved C	mg/L	45	1.3	9.0	9.3	9.3
Total C	mg/L		1.6	9.2	9.2	9.4
Cyanide	mg/L	0.2	<0.0020	<0.0020	<0.0020	<0.0020
THMs	mg/L	0.1			0.145	0.141
Bromo-CH4	mg/L				0.056	0.053
Hardness	mg/L		3.69	282	284	285
Chloride	mg/L	<=250	1.21	100	107	106
Fluoride	mg/L		<0.020	0.177	0.179	0.167
Sodium	mg/L	<=200	0.759	52.4	56.5	56.5
Sulphate	mg/L	<=500	0.38	31.6	31.7	31.5
Magnesium	mg/L		0.488	38.4	38.9	39.0
Calcium	mg/L		0.673	49.7	49.4	49.8
Total Coliform	CFU	none	4.1	<1.0	<1.0	<1.0
E. Coli	CFU	none	<1.0	<1.0	<1.0	<1.0
Aluminium	µg/L	<100	91.3	0.7	1.0	26.8
Arsenic	µg/L	100	0.3	1.1	1.0	1.0
Barium	µg/L	1	1.4	64.6	61.2	61.1
Cadmium	µg/L	5	<0.1	<0.04	<0.04	<0.04
Copper	µg/L	<=1000	0.9	12.3	90.0	80.8
Iron	µg/L	<=300	125	18	34	36
Lead	µg/L	10	<0.1	0.8	0.7	0.4
Manganese	µg/L	<=50	9.9	3.5	2.9	3.1
Selenium	µg/L	50	<0.5	<0.3	<0.3	<0.3
Zinc	µg/L	<=5000	<5.0	161	129	128
Mercury	µg/L	1	<0.01	<0.01	<0.01	<0.01

MUNICIPALITY OF CAMBRIDGE BAY

SEPT/29/2020

RE: Sewage Lagoon Decanting.

The Hamlet started its sewage lagoon decanting on AUG/5/ 2020 after receiving the go ahead to decant, we ran the pump on and off for better flow operations (shutting down on Friday afternoons) starting up again on Monday mornings. We finally shut down on SEPT/11/th2020. This concludes the 2020 decanting season.

412 hrs x 2000 ltrs per Min x 60 divided by 1000 = 49,440 m ^{3} of decanting.

Regards

Wayne Weese

Wayne Weese
Cambridge Bay .NU
867 983 4666

SEPT 15/2017

Appendix A: Taiga Laboratory Effluent Results

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- FINAL REPORT -

Prepared For: Hamlet of Cambridge Bay

Address: P.O. Box 16
Cambridge Bay,NU
X0B 0C0

Attn: **Wayne Weese** **Facsimile: (867) 983-2186**

Final report has been reviewed and approved by:

Glen Hudy
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Tuesday, July 14, 2020
Print Date: *Tuesday, July 14, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Water Lake **Taiga Sample ID:** 001

Client Project:
Sample Type: Raw Water
Received Date: 26-Jun-20
Sampling Date: 25-Jun-20
Sampling Time:
Location: Cambridge Bay Water Systems
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Organic Carbon, Dissolved	1.3	0.5	mg/L	29-Jun-20	SM5310:B	
Organic Carbon, Total	1.6	0.5	mg/L	29-Jun-20	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	2.9	0.4	mg/L	26-Jun-20	SM2320:B	
Colour, Apparent	7	5	CU	26-Jun-20	SM2120:B	
Colour, True	< 5	5	TCU	26-Jun-20	SM2120:B	
Conductivity, Specific (@25C)	9.4	0.4	µS/cm	26-Jun-20	SM2510:B	
pH	6.71		pH units	26-Jun-20	SM4500-H:B	
Solids, Total Dissolved	< 10	10	mg/L	29-Jun-20	SM2540:C	
Solids, Total Suspended	18	3	mg/L	29-Jun-20	SM2540:D	
Turbidity	0.67	0.05	NTU	26-Jun-20	SM2130:B	
Microbiology						
Coliforms, Total	4.1	1.0	MPN/100ml	26-Jun-20	SM9223:B	
Escherichia coli	< 1.0	1.0	MPN/100ml	26-Jun-20	SM9223:B	
Organics						

ReportDate: Tuesday, July 14, 2020
Print Date: ***Tuesday, July 14, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Water Lake **Taiga Sample ID:** 001

Bromodichloromethane		0.005	mg/L		EPA8260B	103
Bromoform		0.005	mg/L		EPA8260B	103
Chloroform		0.005	mg/L		EPA8260B	103
Dibromochloromethane		0.005	mg/L		EPA8260B	103
Trihalomethanes, Total		0.005	mg/L		EPA8260B	103
Subcontracted Inorganics						
Calcium	0.673	0.05	mg/L	08-Jul-20	EPA200.2	
Chloride	1.21	0.5	mg/L	02-Jul-20	EPA300.1	
Fluoride	< 0.020	0.02	mg/L	02-Jul-20	EPA300.1	
Hardness	3.69	0.13	mg/L	08-Jul-20	EPA200.2	
Magnesium	0.488	0.005	mg/L	08-Jul-20	EPA200.2	
NO2+NO3 - N	< 0.0200	0.02	mg/L	02-Jul-20	EPA300.1	
Potassium	0.113	0.05	mg/L	08-Jul-20	EPA200.2	
Sodium	0.759	0.05	mg/L	08-Jul-20	EPA200.2	
Sulphate	0.38	0.3	mg/L	02-Jul-20	EPA300.1	
Subcontracted Organics						
Cyanide, Weak Acid Dissociable	< 0.0020	0.002	mg/L	08-Jul-20	APHA4500-CN	
Trace Metals, Total						
Aluminum	91.3	5	µg/L	30-Jun-20	EPA200.8	
Arsenic	0.3	0.2	µg/L	30-Jun-20	EPA200.8	
Barium	1.4	0.1	µg/L	30-Jun-20	EPA200.8	
Beryllium	< 0.1	0.1	µg/L	30-Jun-20	EPA200.8	
Cadmium	< 0.1	0.1	µg/L	30-Jun-20	EPA200.8	
Copper	0.9	0.2	µg/L	30-Jun-20	EPA200.8	
Iron	125	5	µg/L	30-Jun-20	EPA200.8	

ReportDate: Tuesday, July 14, 2020
Print Date: *Tuesday, July 14, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Water Lake **Taiga Sample ID:** 001

Lead	< 0.1	0.1	µg/L	30-Jun-20	EPA200.8
Manganese	9.9	0.1	µg/L	30-Jun-20	EPA200.8
Mercury	< 0.01	0.01	µg/L	30-Jun-20	EPA200.8
Selenium	< 0.5	0.5	µg/L	30-Jun-20	EPA200.8
Silver	< 0.1	0.1	µg/L	30-Jun-20	EPA200.8
Zinc	< 5.0	5	µg/L	30-Jun-20	EPA200.8

ReportDate: Tuesday, July 14, 2020
Print Date: *Tuesday, July 14, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP-01 **Taiga Sample ID:** 002

Client Project:
Sample Type: Raw Water
Received Date: 26-Jun-20
Sampling Date: 25-Jun-20
Sampling Time:
Location: Cambridge Bay Water Systems
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Organic Carbon, Dissolved	9.0	0.5	mg/L	29-Jun-20	SM5310:B	
Organic Carbon, Total	9.2	0.5	mg/L	29-Jun-20	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	218	0.4	mg/L	26-Jun-20	SM2320:B	
Colour, Apparent	9	5	CU	26-Jun-20	SM2120:B	
Colour, True	5	5	TCU	26-Jun-20	SM2120:B	
Conductivity, Specific (@25C)	782	0.4	µS/cm	26-Jun-20	SM2510:B	
pH	7.42		pH units	26-Jun-20	SM4500-H:B	
Solids, Total Dissolved	432	10	mg/L	29-Jun-20	SM2540:C	
Solids, Total Suspended	14	3	mg/L	29-Jun-20	SM2540:D	
Turbidity	0.25	0.05	NTU	26-Jun-20	SM2130:B	
Microbiology						
Coliforms, Total	< 1.0	1.0	MPN/100ml	26-Jun-20	SM9223:B	
Escherichia coli	< 1.0	1.0	MPN/100ml	26-Jun-20	SM9223:B	
Organics						
Bromodichloromethane		0.005	mg/L		EPA8260B	16

ReportDate: Tuesday, July 14, 2020
Print Date: ***Tuesday, July 14, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP-01 **Taiga Sample ID:** 002

Bromoform		0.005	mg/L		EPA8260B	16
Chloroform		0.005	mg/L		EPA8260B	16
Dibromochloromethane		0.005	mg/L		EPA8260B	16
Trihalomethanes, Total		0.005	mg/L		EPA8260B	16
Subcontracted Inorganics						
Calcium	49.7	0.05	mg/L	08-Jul-20	EPA200.2	
Chloride	100	0.5	mg/L	02-Jul-20	EPA300.1	
Fluoride	0.177	0.02	mg/L	02-Jul-20	EPA300.1	
Hardness	282	0.13	mg/L	08-Jul-20	EPA200.2	
Magnesium	38.4	0.005	mg/L	08-Jul-20	EPA200.2	
NO2+NO3 - N	0.0780	0.02	mg/L	02-Jul-20	EPA300.1	
Potassium	3.62	0.05	mg/L	08-Jul-20	EPA200.2	
Sodium	52.4	0.05	mg/L	08-Jul-20	EPA200.2	
Sulphate	31.6	0.3	mg/L	02-Jul-20	EPA300.1	
Subcontracted Organics						
Cyanide, Weak Acid Dissociable	< 0.0020	0.002	mg/L	08-Jul-20	APHA4500-CN	
Trace Metals, Total						
Aluminum	0.7	0.6	µg/L	30-Jun-20	EPA200.8	
Arsenic	1.1	0.2	µg/L	30-Jun-20	EPA200.8	
Barium	64.6	0.1	µg/L	30-Jun-20	EPA200.8	
Beryllium	< 0.1	0.1	µg/L	30-Jun-20	EPA200.8	
Cadmium	< 0.04	0.04	µg/L	30-Jun-20	EPA200.8	
Copper	12.3	0.2	µg/L	30-Jun-20	EPA200.8	
Iron	18	5	ug/L	30-Jun-20	EPA200.8	
Lead	0.8	0.1	µg/L	30-Jun-20	EPA200.8	

ReportDate: Tuesday, July 14, 2020
Print Date: *Tuesday, July 14, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP-01 **Taiga Sample ID:** 002

Manganese	3.5	0.1	µg/L	30-Jun-20	EPA200.8
Mercury	< 0.01	0.01	µg/L	30-Jun-20	EPA200.8
Selenium	< 0.3	0.3	µg/L	30-Jun-20	EPA200.8
Silver	< 0.1	0.1	µg/L	30-Jun-20	EPA200.8
Zinc	161	0.4	µg/L	30-Jun-20	EPA200.8

ReportDate: Tuesday, July 14, 2020
Print Date: *Tuesday, July 14, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP-02 **Taiga Sample ID:** 003

Client Project:
Sample Type: Treated Water
Received Date: 26-Jun-20
Sampling Date: 25-Jun-20
Sampling Time:
Location: Cambridge Bay Water Systems
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Organic Carbon, Dissolved	9.3	0.5	mg/L	29-Jun-20	SM5310:B	
Organic Carbon, Total	9.2	0.5	mg/L	29-Jun-20	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	220	0.4	mg/L	26-Jun-20	SM2320:B	
Colour, Apparent	5	5	CU	26-Jun-20	SM2120:B	
Colour, True	< 5	5	TCU	26-Jun-20	SM2120:B	
Conductivity, Specific (@25C)	806	0.4	µS/cm	26-Jun-20	SM2510:B	
pH	7.50		pH units	26-Jun-20	SM4500-H:B	
Solids, Total Dissolved	422	10	mg/L	29-Jun-20	SM2540:C	
Solids, Total Suspended	12	3	mg/L	29-Jun-20	SM2540:D	
Turbidity	0.27	0.05	NTU	26-Jun-20	SM2130:B	
Microbiology						
Coliforms, Total	< 1.0	1.0	MPN/100ml	26-Jun-20	SM9223:B	
Escherichia coli	< 1.0	1.0	MPN/100ml	26-Jun-20	SM9223:B	
Organics						
Bromodichloromethane	0.056	0.005	mg/L	03-Jul-20	EPA8260B	

ReportDate: Tuesday, July 14, 2020
Print Date: ***Tuesday, July 14, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP-02 **Taiga Sample ID:** 003

Bromoform	< 0.005	0.005	mg/L	03-Jul-20	EPA8260B
Chloroform	0.052	0.005	mg/L	03-Jul-20	EPA8260B
Dibromochloromethane	0.034	0.005	mg/L	03-Jul-20	EPA8260B
Trihalomethanes, Total	0.145	0.005	mg/L	03-Jul-20	EPA8260B
Subcontracted Inorganics					
Calcium	49.4	0.05	mg/L	08-Jul-20	EPA200.2
Chloride	107	0.5	mg/L	02-Jul-20	EPA300.1
Fluoride	0.179	0.02	mg/L	02-Jul-20	EPA300.1
Hardness	284	0.13	mg/L	08-Jul-20	EPA200.2
Magnesium	38.9	0.005	mg/L	08-Jul-20	EPA200.2
NO2+NO3 - N	0.0290	0.02	mg/L	02-Jul-20	EPA300.1
Potassium	3.69	0.05	mg/L	08-Jul-20	EPA200.2
Sodium	56.5	0.05	mg/L	08-Jul-20	EPA200.2
Sulphate	31.7	0.3	mg/L	02-Jul-20	EPA300.1
Subcontracted Organics					
Cyanide, Weak Acid Dissociable	< 0.0020	0.002	mg/L	08-Jul-20	APHA4500-CN
Trace Metals, Total					
Aluminum	1.0	0.6	µg/L	30-Jun-20	EPA200.8
Arsenic	1.0	0.2	µg/L	30-Jun-20	EPA200.8
Barium	61.2	0.1	µg/L	30-Jun-20	EPA200.8
Beryllium	< 0.1	0.1	µg/L	30-Jun-20	EPA200.8
Cadmium	< 0.04	0.04	µg/L	30-Jun-20	EPA200.8
Copper	90.0	0.2	µg/L	30-Jun-20	EPA200.8
Iron	34	5	ug/L	30-Jun-20	EPA200.8
Lead	0.7	0.1	µg/L	30-Jun-20	EPA200.8

ReportDate: Tuesday, July 14, 2020
Print Date: *Tuesday, July 14, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP-02 **Taiga Sample ID:** 003

Manganese	2.9	0.1	µg/L	30-Jun-20	EPA200.8
Mercury	< 0.01	0.01	µg/L	30-Jun-20	EPA200.8
Selenium	< 0.3	0.3	µg/L	30-Jun-20	EPA200.8
Silver	< 0.1	0.1	µg/L	30-Jun-20	EPA200.8
Zinc	129	0.4	µg/L	30-Jun-20	EPA200.8

ReportDate: Tuesday, July 14, 2020
Print Date: *Tuesday, July 14, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Water Truck **Taiga Sample ID:** 004

Client Project:
Sample Type: Treated Water
Received Date: 26-Jun-20
Sampling Date: 25-Jun-20
Sampling Time:
Location: Cambridge Bay Water Systems
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Organic Carbon, Dissolved	9.3	0.5	mg/L	29-Jun-20	SM5310:B	
Organic Carbon, Total	9.4	0.5	mg/L	29-Jun-20	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	220	0.4	mg/L	26-Jun-20	SM2320:B	
Colour, Apparent	6	5	CU	26-Jun-20	SM2120:B	
Colour, True	< 5	5	TCU	26-Jun-20	SM2120:B	
Conductivity, Specific (@25C)	807	0.4	µS/cm	26-Jun-20	SM2510:B	
pH	7.75		pH units	26-Jun-20	SM4500-H:B	
Solids, Total Dissolved	488	10	mg/L	29-Jun-20	SM2540:C	
Solids, Total Suspended	6	3	mg/L	29-Jun-20	SM2540:D	
Turbidity	0.29	0.05	NTU	26-Jun-20	SM2130:B	
Microbiology						
Coliforms, Total	< 1.0	1.0	MPN/100ml	26-Jun-20	SM9223:B	
Escherichia coli	< 1.0	1.0	MPN/100ml	26-Jun-20	SM9223:B	
Organics						
Bromodichloromethane	0.053	0.005	mg/L	03-Jul-20	EPA8260B	

ReportDate: Tuesday, July 14, 2020
Print Date: ***Tuesday, July 14, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Water Truck **Taiga Sample ID:** 004

Bromoform	< 0.005	0.005	mg/L	03-Jul-20	EPA8260B
Chloroform	0.052	0.005	mg/L	03-Jul-20	EPA8260B
Dibromochloromethane	0.034	0.005	mg/L	03-Jul-20	EPA8260B
Trihalomethanes, Total	0.141	0.005	mg/L	03-Jul-20	EPA8260B
Subcontracted Inorganics					
Calcium	49.8	0.05	mg/L	08-Jul-20	EPA200.2
Chloride	106	0.5	mg/L	02-Jul-20	EPA300.1
Fluoride	0.167	0.02	mg/L	02-Jul-20	EPA300.1
Hardness	285	0.13	mg/L	08-Jul-20	EPA200.2
Magnesium	39.0	0.005	mg/L	08-Jul-20	EPA200.2
NO2+NO3 - N	0.0270	0.02	mg/L	02-Jul-20	EPA300.1
Potassium	3.68	0.05	mg/L	08-Jul-20	EPA200.2
Sodium	56.5	0.05	mg/L	08-Jul-20	EPA200.2
Sulphate	31.5	0.3	mg/L	02-Jul-20	EPA300.1
Subcontracted Organics					
Cyanide, Weak Acid Dissociable	< 0.0020	0.002	mg/L	08-Jul-20	APHA4500-CN
Trace Metals, Total					
Aluminum	26.8	0.6	µg/L	30-Jun-20	EPA200.8
Arsenic	1.0	0.2	µg/L	30-Jun-20	EPA200.8
Barium	61.1	0.1	µg/L	30-Jun-20	EPA200.8
Beryllium	< 0.1	0.1	µg/L	30-Jun-20	EPA200.8
Cadmium	< 0.04	0.04	µg/L	30-Jun-20	EPA200.8
Copper	80.8	0.2	µg/L	30-Jun-20	EPA200.8
Iron	36	5	ug/L	30-Jun-20	EPA200.8
Lead	0.4	0.1	µg/L	30-Jun-20	EPA200.8

ReportDate: Tuesday, July 14, 2020
Print Date: *Tuesday, July 14, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Water Truck **Taiga Sample ID:** 004

Manganese	3.1	0.1	µg/L	30-Jun-20	EPA200.8
Mercury	< 0.01	0.01	µg/L	30-Jun-20	EPA200.8
Selenium	< 0.3	0.3	µg/L	30-Jun-20	EPA200.8
Silver	< 0.1	0.1	µg/L	30-Jun-20	EPA200.8
Zinc	128	0.4	µg/L	30-Jun-20	EPA200.8

ReportDate: Tuesday, July 14, 2020
Print Date: *Tuesday, July 14, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 1 **Taiga Sample ID:** 005

Client Project:
Sample Type: Water
Received Date: 26-Jun-20
Sampling Date: 25-Jun-20
Sampling Time:
Location: Cambridge Bay Water Systems
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Subcontracted Organics						
Phenols, Total	< 0.0010	0.001	mg/L	08-Jul-20	AB ENV.06537	

ReportDate: Tuesday, July 14, 2020
Print Date: ***Tuesday, July 14, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 2 **Taiga Sample ID:** 006

Client Project:
Sample Type: Water
Received Date: 26-Jun-20
Sampling Date: 25-Jun-20
Sampling Time:
Location: Cambridge Bay Water Systems
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Subcontracted Organics						
Phenols, Total	< 0.0010	0.001	mg/L	08-Jul-20	AB ENV.06537	

ReportDate: Tuesday, July 14, 2020
Print Date: ***Tuesday, July 14, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 3 **Taiga Sample ID:** 007

Client Project:
Sample Type: Water
Received Date: 26-Jun-20
Sampling Date: 25-Jun-20
Sampling Time:
Location: Cambridge Bay Water Systems
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Subcontracted Organics						
Phenols, Total	< 0.0010	0.001	mg/L	08-Jul-20	AB ENV.06537	

ReportDate: Tuesday, July 14, 2020
Print Date: ***Tuesday, July 14, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200327

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 3 **Taiga Sample ID:** 007

- DATA QUALIFERS -

Data Qualifier Descriptions:

103 *Bottle/Vial received empty, analysis not possible*

16 *Test requested but no sample bottle received*

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Tuesday, July 14, 2020

Print Date: ***Tuesday, July 14, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200387

- FINAL REPORT -

Prepared For: Hamlet of Cambridge Bay

Address: P.O. Box 16
Cambridge Bay,NU
X0B 0C0

Attn: **Wayne Weese** **Facsimile: (867) 983-2186**

Final report has been reviewed and approved by:

Glen Hudy
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Wednesday, July 22, 2020
Print Date: ***Wednesday, July 22, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200387

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 001

Client Project:
Sample Type: Water
Received Date: 08-Jul-20
Sampling Date: 07-Jul-20
Sampling Time:
Location: Cambridge Bay Sewage Lagoon
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Biochemical Oxygen Demand	25	2	mg/L	08-Jul-20	SM5210:B	
CBOD	19	2	mg/L	08-Jul-20	SM5210:B	
Organic Carbon, Total	47.2	0.5	mg/L	08-Jul-20	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	215	0.4	mg/L	08-Jul-20	SM2320:B	
Conductivity, Specific (@25C)	755	0.4	µS/cm	08-Jul-20	SM2510:B	
pH	7.64		pH units	08-Jul-20	SM4500-H:B	
Solids, Total Dissolved	387	10	mg/L	09-Jul-20	SM2540:C	
Solids, Total Suspended	61	3	mg/L	09-Jul-20	SM2540:D	
Microbiology						
Coliforms, Fecal	1900	100	CFU/100mL	08-Jul-20	SM9222:D	
Organics						
Oil and Grease, visible	Non-visible			08-Jul-20	Visual Exam	
Subcontracted Inorganics						
Calcium	27.6	0.05	mg/L	16-Jul-20	EPA200.2	

ReportDate: Wednesday, July 22, 2020
Print Date: ***Wednesday, July 22, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200387

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 001

Chloride	94.1	0.5	mg/L	10-Jul-20	EPA300.1
Hardness	158	0.13	mg/L	16-Jul-20	EPA200.2
Magnesium	21.6	0.005	mg/L	16-Jul-20	EPA200.2
Nitrate as Nitrogen	< 0.0200	0.020	mg/L	10-Jul-20	EPA300.1
Nitrite as N	< 0.0100	0.010	mg/L	10-Jul-20	EPA300.1
NO2+NO3 - N	< 0.0220	0.022	mg/L	10-Jul-20	EPA300.1
Potassium	13.6	0.05	mg/L	16-Jul-20	EPA200.2
Sodium	54.8	0.05	mg/L	16-Jul-20	EPA200.2
Sulphate	11.6	0.3	mg/L	10-Jul-20	EPA300.1
Subcontracted Organics					
Phenols, Total	< 0.0010	0.001	mg/L	14-Jul-20	AB ENV.06537
Trace Metals, Total					
Cadmium	< 0.1	0.1	µg/L	14-Jul-20	EPA200.8
Chromium	0.4	0.1	µg/L	14-Jul-20	EPA200.8
Cobalt	0.4	0.1	µg/L	14-Jul-20	EPA200.8
Copper	39.9	0.2	µg/L	14-Jul-20	EPA200.8
Iron	1000	5	µg/L	14-Jul-20	EPA200.8
Lead	0.4	0.1	µg/L	14-Jul-20	EPA200.8
Manganese	90.3	0.1	µg/L	14-Jul-20	EPA200.8
Mercury	0.02	0.01	µg/L	14-Jul-20	EPA200.8
Nickel	1.6	0.1	µg/L	14-Jul-20	EPA200.8
Zinc	36.5	5	µg/L	14-Jul-20	EPA200.8

ReportDate: Wednesday, July 22, 2020
Print Date: *Wednesday, July 22, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200387

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-4 **Taiga Sample ID:** 002

Client Project:
Sample Type: Water
Received Date: 08-Jul-20
Sampling Date: 07-Jul-20
Sampling Time:
Location: Cambridge Bay Sewage Lagoon
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Biochemical Oxygen Demand	24	2	mg/L	08-Jul-20	SM5210:B	
CBOD	16	2	mg/L	08-Jul-20	SM5210:B	
Organic Carbon, Total	63.6	0.5	mg/L	08-Jul-20	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	224	0.4	mg/L	08-Jul-20	SM2320:B	
Conductivity, Specific (@25C)	2760	0.4	µS/cm	08-Jul-20	SM2510:B	
pH	7.89		pH units	08-Jul-20	SM4500-H:B	
Solids, Total Dissolved	2130	10	mg/L	09-Jul-20	SM2540:C	
Solids, Total Suspended	30	3	mg/L	09-Jul-20	SM2540:D	
Microbiology						
Coliforms, Fecal	10	10	CFU/100mL	08-Jul-20	SM9222:D	
Organics						
Oil and Grease, visible	Non-visible			08-Jul-20	Visual Exam	
Subcontracted Inorganics						
Calcium	288	0.05	mg/L	16-Jul-20	EPA200.2	
Chloride	281	0.5	mg/L	10-Jul-20	EPA300.1	

ReportDate: Wednesday, July 22, 2020
Print Date: ***Wednesday, July 22, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200387

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-4 **Taiga Sample ID:** 002

Hardness	0.160	0.13	mg/L	16-Jul-20	EPA200.2
Magnesium	82.7	0.005	mg/L	16-Jul-20	EPA200.2
Nitrate as Nitrogen	0.0580	0.020	mg/L	10-Jul-20	EPA300.1
Nitrite as N	0.0110	0.010	mg/L	10-Jul-20	EPA300.1
NO2+NO3 - N	0.0690	0.022	mg/L	10-Jul-20	EPA300.1
Potassium	70.6	0.05	mg/L	16-Jul-20	EPA200.2
Sodium	156	0.05	mg/L	16-Jul-20	EPA200.2
Sulphate	922	0.3	mg/L	10-Jul-20	EPA300.1
Subcontracted Organics					
Phenols, Total	0.0028	0.001	mg/L	14-Jul-20	AB ENV.06537
Trace Metals, Total					
Cadmium	< 0.1	0.1	µg/L	14-Jul-20	EPA200.8
Chromium	1.8	0.1	µg/L	14-Jul-20	EPA200.8
Cobalt	3.9	0.1	µg/L	14-Jul-20	EPA200.8
Copper	28.3	0.2	µg/L	14-Jul-20	EPA200.8
Iron	11400	5	µg/L	14-Jul-20	EPA200.8
Lead	4.3	0.1	µg/L	14-Jul-20	EPA200.8
Manganese	292	0.1	µg/L	14-Jul-20	EPA200.8
Mercury	0.02	0.01	µg/L	14-Jul-20	EPA200.8
Nickel	23.0	0.1	µg/L	14-Jul-20	EPA200.8
Zinc	62.3	5	µg/L	14-Jul-20	EPA200.8

ReportDate: Wednesday, July 22, 2020
Print Date: *Wednesday, July 22, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200387

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 003

Client Project:
Sample Type: Water
Received Date: 08-Jul-20
Sampling Date: 07-Jul-20
Sampling Time:
Location: Cambridge Bay Sewage Lagoon
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Biochemical Oxygen Demand	23	2	mg/L	08-Jul-20	SM5210:B	
CBOD	17	2	mg/L	08-Jul-20	SM5210:B	
Organic Carbon, Total	65.0	0.5	mg/L	08-Jul-20	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	197	0.4	mg/L	08-Jul-20	SM2320:B	
Conductivity, Specific (@25C)	807	0.4	µS/cm	08-Jul-20	SM2510:B	
pH	9.40		pH units	08-Jul-20	SM4500-H:B	
Solids, Total Dissolved	504	10	mg/L	09-Jul-20	SM2540:C	
Solids, Total Suspended	76	3	mg/L	09-Jul-20	SM2540:D	
Microbiology						
Coliforms, Fecal	< 10	10	CFU/100mL	08-Jul-20	SM9222:D	
Organics						
Oil and Grease, visible	Non-visible			08-Jul-20	Visual Exam	
Subcontracted Inorganics						
Calcium	46.2	0.05	mg/L	16-Jul-20	EPA200.2	
Chloride	130	0.5	mg/L	10-Jul-20	EPA300.1	

ReportDate: Wednesday, July 22, 2020
Print Date: ***Wednesday, July 22, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200387

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 003

Hardness	242	0.13	mg/L	16-Jul-20	EPA200.2
Magnesium	30.8	0.005	mg/L	16-Jul-20	EPA200.2
Nitrate as Nitrogen	< 0.0200	0.020	mg/L	10-Jul-20	EPA300.1
Nitrite as N	< 0.0100	0.010	mg/L	10-Jul-20	EPA300.1
NO2+NO3 - N	< 0.0220	0.022	mg/L	10-Jul-20	EPA300.1
Potassium	14.3	0.05	mg/L	16-Jul-20	EPA200.2
Sodium	65.8	0.05	mg/L	16-Jul-20	EPA200.2
Sulphate	37.2	0.3	mg/L	10-Jul-20	EPA300.1
Subcontracted Organics					
Phenols, Total	< 0.0010	0.001	mg/L	14-Jul-20	AB ENV.06537
Trace Metals, Total					
Cadmium	< 0.1	0.1	µg/L	14-Jul-20	EPA200.8
Chromium	0.4	0.1	µg/L	14-Jul-20	EPA200.8
Cobalt	0.4	0.1	µg/L	14-Jul-20	EPA200.8
Copper	3.7	0.2	µg/L	14-Jul-20	EPA200.8
Iron	371	5	µg/L	14-Jul-20	EPA200.8
Lead	1.1	0.1	µg/L	14-Jul-20	EPA200.8
Manganese	66.3	0.1	µg/L	14-Jul-20	EPA200.8
Mercury	0.01	0.01	µg/L	14-Jul-20	EPA200.8
Nickel	2.9	0.1	µg/L	14-Jul-20	EPA200.8
Zinc	25.4	5	µg/L	14-Jul-20	EPA200.8

ReportDate: Wednesday, July 22, 2020
Print Date: *Wednesday, July 22, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200387

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 003

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Wednesday, July 22, 2020

Print Date: *Wednesday, July 22, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200741

- FINAL REPORT -

Prepared For: Hamlet of Cambridge Bay

Address: P.O. Box 16
Cambridge Bay,NU
X0B 0C0

Attn: **Wayne Weese** **Facsimile: (867) 983-2186**

Final report has been reviewed and approved by:

Glen Hudy
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Tuesday, September 29, 2020
Print Date: *Tuesday, September 29, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200741

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 001

Client Project:
Sample Type: Sewage Lagoon Cell
Received Date: 11-Sep-20
Sampling Date: 10-Sep-20
Sampling Time: 9:00
Location: Cambridge Bay Sewage Lagoon
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	0.131	0.005	mg/L	14-Sep-20	SM4500-NH3:G	
Biochemical Oxygen Demand	24	2	mg/L	11-Sep-20	SM5210:B	
CBOD	22	2	mg/L	11-Sep-20	SM5210:B	
Organic Carbon, Total	57.1	0.5	mg/L	19-Sep-20	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	218	0.4	mg/L	11-Sep-20	SM2320:B	
Conductivity, Specific (@25C)	958	0.4	µS/cm	11-Sep-20	SM2510:B	
pH	8.95		pH units	11-Sep-20	SM4500-H:B	
Solids, Total Dissolved	578	10	mg/L	14-Sep-20	SM2540:C	
Solids, Total Suspended	71	3	mg/L	14-Sep-20	SM2540:D	
Major Ions						
Chloride	153	0.7	mg/L	11-Sep-20	SM4110:B	
Nitrate as Nitrogen	3.25	0.01	mg/L	11-Sep-20	SM4110:B	
Nitrite as Nitrogen	0.41	0.01	mg/L	11-Sep-20	SM4110:B	

ReportDate: Tuesday, September 29, 2020
Print Date: ***Tuesday, September 29, 2020***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200741

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 001

Sulphate	24	1	mg/L	11-Sep-20	SM4110:B
Microbiology					
Coliforms, Fecal	80	10	CFU/100mL	11-Sep-20	SM9222:D
Organics					
Oil and Grease, visible	Non-visible			11-Sep-20	Visual Exam
Subcontracted Inorganics					
Calcium	43.5	0.05	mg/L	21-Sep-20	EPA200.2
Magnesium	32.7	0.005	mg/L	21-Sep-20	EPA200.2
Potassium	19.8	0.05	mg/L	21-Sep-20	EPA200.2
Sodium	101	0.05	mg/L	21-Sep-20	EPA200.2
Subcontracted Organics					
Phenols, Total	< 0.0010	0.001	mg/L	24-Sep-20	AB ENV.06537
Trace Metals, Total					
Aluminum	64.6	5	µg/L	23-Sep-20	EPA200.8
Antimony	0.5	0.1	µg/L	23-Sep-20	EPA200.8
Arsenic	1.7	0.2	µg/L	23-Sep-20	EPA200.8
Cadmium	< 0.1	0.1	µg/L	23-Sep-20	EPA200.8
Chromium	0.3	0.1	µg/L	23-Sep-20	EPA200.8
Copper	12.2	0.2	µg/L	23-Sep-20	EPA200.8
Iron	1050	5	µg/L	23-Sep-20	EPA200.8
Lead	0.5	0.1	µg/L	23-Sep-20	EPA200.8
Manganese	91.1	0.1	µg/L	23-Sep-20	EPA200.8
Mercury	< 0.01	0.01	µg/L	23-Sep-20	EPA200.8
Nickel	2.5	0.1	µg/L	23-Sep-20	EPA200.8
Tin	0.2	0.1	µg/L	23-Sep-20	EPA200.8

ReportDate: Tuesday, September 29, 2020
Print Date: *Tuesday, September 29, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200741

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 001

Zinc	12.9	5	µg/L	23-Sep-20	EPA200.8

ReportDate: Tuesday, September 29, 2020
Print Date: *Tuesday, September 29, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200741

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 002

Client Project:
Sample Type: Wetland Cell
Received Date: 11-Sep-20
Sampling Date: 10-Sep-20
Sampling Time: 9:00
Location: Cambridge Bay Sewage Lagoon
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	0.127	0.005	mg/L	14-Sep-20	SM4500-NH3:G	
Biochemical Oxygen Demand	22	2	mg/L	11-Sep-20	SM5210:B	
CBOD	23	2	mg/L	11-Sep-20	SM5210:B	
Organic Carbon, Total	64.0	0.5	mg/L	19-Sep-20	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	218	0.4	mg/L	11-Sep-20	SM2320:B	
Conductivity, Specific (@25C)	968	0.4	µS/cm	11-Sep-20	SM2510:B	
pH	9.03		pH units	11-Sep-20	SM4500-H:B	
Solids, Total Dissolved	578	10	mg/L	14-Sep-20	SM2540:C	
Solids, Total Suspended	59	3	mg/L	14-Sep-20	SM2540:D	
Major Ions						
Chloride	155	0.7	mg/L	11-Sep-20	SM4110:B	
Nitrate as Nitrogen	2.95	0.01	mg/L	11-Sep-20	SM4110:B	
Nitrite as Nitrogen	0.44	0.01	mg/L	11-Sep-20	SM4110:B	
Sulphate	25	1	mg/L	11-Sep-20	SM4110:B	
Microbiology						

ReportDate: Tuesday, September 29, 2020
Print Date: *Tuesday, September 29, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200741

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 002

Coliforms, Fecal	70	10	CFU/100mL	11-Sep-20	SM9222:D
Organics					
Oil and Grease, visible	Non-visible			11-Sep-20	Visual Exam
Subcontracted Inorganics					
Calcium	43.5	0.05	mg/L	21-Sep-20	EPA200.2
Magnesium	32.7	0.005	mg/L	21-Sep-20	EPA200.2
Potassium	20.0	0.05	mg/L	21-Sep-20	EPA200.2
Sodium	103	0.05	mg/L	21-Sep-20	EPA200.2
Subcontracted Organics					
Phenols, Total	< 0.0010	0.001	mg/L	24-Sep-20	AB ENV.06537
Trace Metals, Total					
Aluminum	50.3	5	µg/L	23-Sep-20	EPA200.8
Antimony	0.5	0.1	µg/L	23-Sep-20	EPA200.8
Arsenic	1.7	0.2	µg/L	23-Sep-20	EPA200.8
Cadmium	< 0.1	0.1	µg/L	23-Sep-20	EPA200.8
Chromium	0.3	0.1	µg/L	23-Sep-20	EPA200.8
Copper	11.4	0.2	µg/L	23-Sep-20	EPA200.8
Iron	1010	5	µg/L	23-Sep-20	EPA200.8
Lead	0.6	0.1	µg/L	23-Sep-20	EPA200.8
Manganese	85.3	0.1	µg/L	23-Sep-20	EPA200.8
Mercury	< 0.01	0.01	µg/L	23-Sep-20	EPA200.8
Nickel	2.4	0.1	µg/L	23-Sep-20	EPA200.8
Tin	0.2	0.1	µg/L	23-Sep-20	EPA200.8
Zinc	12.4	5	µg/L	23-Sep-20	EPA200.8

ReportDate: Tuesday, September 29, 2020
Print Date: *Tuesday, September 29, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200741

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-6 **Taiga Sample ID:** 003

Client Project:
Sample Type: Final Discharge
Received Date: 11-Sep-20
Sampling Date: 10-Sep-20
Sampling Time: 9:00
Location: Cambridge Bay Sewage Lagoon
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	0.047	0.005	mg/L	14-Sep-20	SM4500-NH3:G	
Biochemical Oxygen Demand	28	2	mg/L	11-Sep-20	SM5210:B	
CBOD	28	2	mg/L	11-Sep-20	SM5210:B	
Organic Carbon, Total	53.8	0.5	mg/L	19-Sep-20	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	217	0.4	mg/L	11-Sep-20	SM2320:B	
Conductivity, Specific (@25C)	977	0.4	µS/cm	11-Sep-20	SM2510:B	
pH	8.88		pH units	11-Sep-20	SM4500-H:B	
Solids, Total Dissolved	570	10	mg/L	14-Sep-20	SM2540:C	
Solids, Total Suspended	62	3	mg/L	14-Sep-20	SM2540:D	
Major Ions						
Chloride	157	0.7	mg/L	11-Sep-20	SM4110:B	
Nitrate as Nitrogen	2.57	0.01	mg/L	11-Sep-20	SM4110:B	
Nitrite as Nitrogen	0.42	0.01	mg/L	11-Sep-20	SM4110:B	
Sulphate	25	1	mg/L	11-Sep-20	SM4110:B	
Microbiology						

ReportDate: Tuesday, September 29, 2020
Print Date: *Tuesday, September 29, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200741

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-6 **Taiga Sample ID:** 003

Coliforms, Fecal	10	10	CFU/100mL	11-Sep-20	SM9222:D
Organics					
Oil and Grease, visible	Non-visible			11-Sep-20	Visual Exam
Subcontracted Inorganics					
Calcium	44.4	0.05	mg/L	21-Sep-20	EPA200.2
Magnesium	33.7	0.005	mg/L	21-Sep-20	EPA200.2
Potassium	20.0	0.05	mg/L	21-Sep-20	EPA200.2
Sodium	101	0.05	mg/L	21-Sep-20	EPA200.2
Subcontracted Organics					
Phenols, Total	< 0.0010	0.001	mg/L	24-Sep-20	AB ENV.06537
Trace Metals, Total					
Aluminum	120	5	µg/L	23-Sep-20	EPA200.8
Antimony	0.5	0.1	µg/L	23-Sep-20	EPA200.8
Arsenic	1.9	0.2	µg/L	23-Sep-20	EPA200.8
Cadmium	< 0.1	0.1	µg/L	23-Sep-20	EPA200.8
Chromium	0.5	0.1	µg/L	23-Sep-20	EPA200.8
Copper	11.4	0.2	µg/L	23-Sep-20	EPA200.8
Iron	1260	5	µg/L	23-Sep-20	EPA200.8
Lead	1.2	0.1	µg/L	23-Sep-20	EPA200.8
Manganese	96.8	0.1	µg/L	23-Sep-20	EPA200.8
Mercury	< 0.01	0.01	µg/L	23-Sep-20	EPA200.8
Nickel	2.7	0.1	µg/L	23-Sep-20	EPA200.8
Tin	0.2	0.1	µg/L	23-Sep-20	EPA200.8
Zinc	18.9	5	µg/L	23-Sep-20	EPA200.8

ReportDate: Tuesday, September 29, 2020
Print Date: *Tuesday, September 29, 2020*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 200741

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-6 **Taiga Sample ID:** 003

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Tuesday, September 29, 2020

Print Date: *Tuesday, September 29, 2020*

Appendix B: 2020 CIRNAC Inspection

From:	Pedersen, Baba (AADNC/AANDC)
To:	SAO Cambridge Bay
Cc:	licensing@nwb-oen.ca; Hack, Justin (AADNC/AANDC); Alam, Shah
Subject:	Cambridge Bay Municipal Water License Inspection of 11 August 2020
Date:	October 7, 2020 3:09:51 PM
Attachments:	2020 KIT 003 BP 3BM CAM2030 Cambridge Bay Minicipal.pdf

To Marla Limousin, CAO, Hamlet of Cambridge Bay

Hello Marla,

Attached you will find my Inspection Report for the Hamlet of Cambridge Bay's Municipal Water License 3BM-CAM2030. I did the Inspection on August 11, 2020 and I was accompanied by Shah Alam from the GN CGS. Wiz Mohammed from your staff took us around for the Inspection.

The following are updates to some of my findings in my Report that have developed between the time of the Inspection and now;

Item 1 Fuel Tank at Water Intake Pump House
As per email correspondence with Wiz, I have set a New Deadline of July 15, 2021 for the Removal of the Fuel Tank that is less than 30 Meters from the high water mark. I must stress that if this deadline is not met then I will have no choice but to consider further Enforcement Action.

Item 2 Debris along the Edge of the Sewage Lagoon
As per email correspondence and photos supplied by Wiz, I confirm that all Debris has been removed as per my request. Thank you very much.

Item 6 Bermed Area within the Metal Dump
As per email correspondence and photos supplied by Wiz, I confirm some removal and clean-up has happened this season. I look forward to the completion of this area of work in the summer of 2021.

Item 7 Signage at Sample Station CAM-6
As per email correspondence and photos supplied by Wiz, I confirm that appropriate Signage has been replaced at Sample Station CAM-6. Thank you very much.

I would like to thank both yourself and Wiz for your cooperation and assistance during the Inspection Process.

If you have any questions or concerns, please feel free to contact me at any time.

I have shared this with the Nunavut Water Board in Gjoa Haven, the GN CGS in Cambridge Bay and CIRNAC in Iqaluit for their information and files.

WATER LICENCE INSPECTION FORM

☒ **Original**
☐ **Follow-Up Report**

Licensee	**Licensee Representative**
Hamlet of Cambridge Bay	Marla Limosuin
Licence No. / Expiry	**Representative's Title**
3BM-CAM2030	Chief Administrative Officer
Land / Other Authorizations	**Land / Other Authorizations**
Date of Inspection	**Inspector**
2020 August 11	Baba Pedersen

Activities Inspected

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

Conditions: **A - Acceptable** **C - Concern** **U - Unacceptable** **NA – Not Applicable** **NI – Not Inspected**

Water Use	Condition	Comment	**Site Conditions**	Condition	Comment	**Haz/Mat Management**	Condition	Comment
Intake/Screen			Water Management Structures			Storage	U	6
Flow Measure. Device	A	8	Culverts / Bridges			Spills		
Source:			Drainage			Spill Plan		
Water Use:			Erosion / Sediment					
Recirculation (y /n)			Mitigation Measures	A	3	**Administrative**		
Fuel Tank Placement	U	1	Reclamation Activities			Records	A	8
			Materials Storage			Reports	A	9
Waste Disposal			Signage	C	7	Plans		
Waste Water	C	2				Notifications		
Solid Waste	A	4	**Monitoring**			**Other**		
Hazardous Waste	C	5	Sample Collection / Analysis	A	3			

**The number in the comments field will correspond with specific comments provided below.*

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

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

On Tuesday August 11, 2020, I Baba Pedersen, Resource Management and Water Resources Officer with Crown-Indigenous Relations and Northern Affairs Canada, the Writer of this Report, did Inspect the holder (Hamlet of Cambridge Bay) of Water Licence number 3BM-CAM2030 issued for the Municipal Use of Water and Waste Disposal in the Hamlet of Cambridge Bay in the Kitikmeot Region of Nunavut.

The Inspector was accompanied by Shah Alam, Municipal Planning Engineer from the GN-CGS and Whiz Mohammed, Director, Municipal Planning & Projects with the Hamlet of Cambridge Bay. The Site Inspections were preceded by a meeting in the offices of the Hamlet of Cambridge Bay that also included Marla Limousin, CAO for the Hamlet of Cambridge Bay.

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

During the Site Inspections, the following was observed by the Inspector;

1. The existing Fuel Tank (Photo 1) for the Pump House at the Water Intake is still less than 30 meters away from the High Water Mark of the Water Lake, despite previous directions from the Inspector to the Hamlet in previous year's Reports to have this moved.
2. Various Debris along the edges of the Sewage Lagoon (Photos 2 & 3) adjacent to the Truck Dumping Area.
3. Sample Station CAM-3 (Photo 4) and the Decant Area (Photos 5 & 6) of the Sewage Lagoon.
4. The main Garbage Dump (Photo 7).
5. The used Battery Storage (Photos 8, 9 & 10) in the Metal Dump.
6. The Bermed Area (Photos 11, 12 & 13) in the Metal Dump, and
7. The Final Discharge CAM-6 Sample Station (Photo 14).
8. YTD Water Consumption Records showing 49,249 cubic meters from January 1, 2020 to July 31, 2020 were provided to the Inspector.
9. The Licence Holder has submitted the Annual Report to the Nunavut Water Board.

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

1. The Licence Holder MUST install the new Fuel Tank a minimum of 30 meters from the High Water Mark AND Remove the old Fuel Tank and provide the Inspector with Photographic Proof of the job completed PRIOR to October 1, 2020 otherwise the Inspector will have no other choice but to pursue further Enforcement Action.
2. The Licence Holder shall remove all large Debris from the edges of the Sewage Lagoon.
3. The Licence Holder was about 2 weeks through the Decant Process at the time of this Inspection. The Inspector has no concerns with this at this time.

4. The Licence Holder had staff removing windblown garbage from the Main Dump Perimeter Fencing at the time of this Inspection. The Inspector has no concerns with this at this time.
5. The used Batteries in storage shall be placed in lined wooden crates and stored within Sea Cans until they can be shipped out of the Community to a proper Disposal Site.
6. The Licence Holder MUST remove all water from the Bermed Area. Ensure the base of the Bermed Area has adequate Sand/Gravel Cover to ensure the integrity of the Liner. Remove the Mega Bags containing Contaminated Soils and place them in an approved Land Farm Facility. Clean out the used oils in the back. Remove and clean up the open drums and use the cleaned up Bermed Area for it's intended purpose of storing Used Oils on Wooden Pallets while awaiting shipment to a proper disposal facility. The Inspector recognizes this as a 2 year process and the Licence Holder MUST provide the Inspector with photographic proof of significant progress by October 1, 2020.
7. The Licence Holder shall replace the missing Signage for Sample Station CAM-6.
8. The Licence Holder is within allowable limits and the Inspector has no concerns with this at this time.
9. Thank you for this, the Inspector has no concerns with this.

Licensee or Representative	**Inspector's Name**
	Baba Pedersen
Signature	**Signature**
	Signed Original on File
Date	**Date**
	2020 October 2

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

cc. CIRNAC, Manager Field Operations, Iqaluit, justin.hack@canada.ca

Nunavut Water Board, Manager of Licensing, Gjoa Haven, licensing@nwb-oen.ca

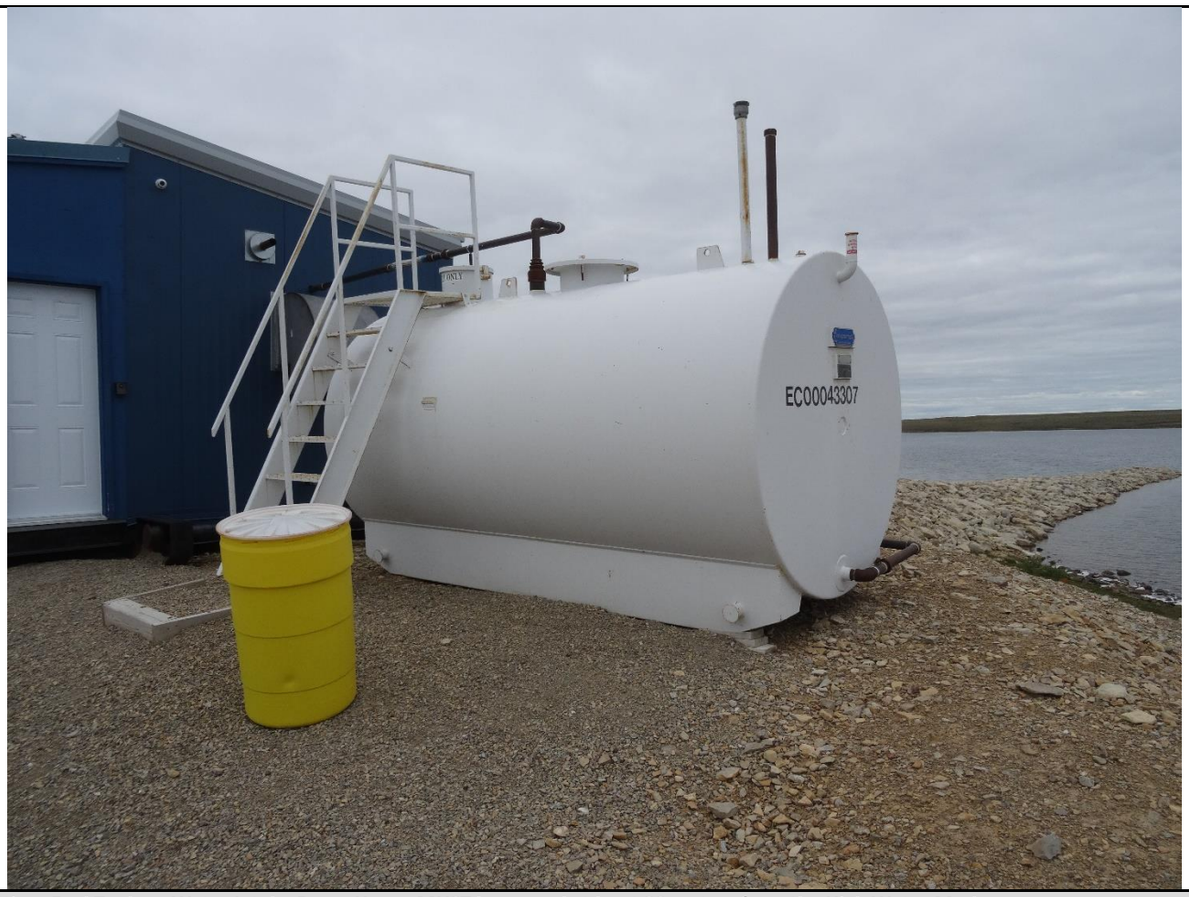
Gov't of Nunavut, Municipal Engineer, Cambridge Bay, salam@gov.nu.ca

PHOTO LOG

Date	Camera	Inspector	Authorization
2020 August 11	Sony DSC-HX50V	Baba Pedersen	3BM-CAM2030

Photo Log # DSC05868

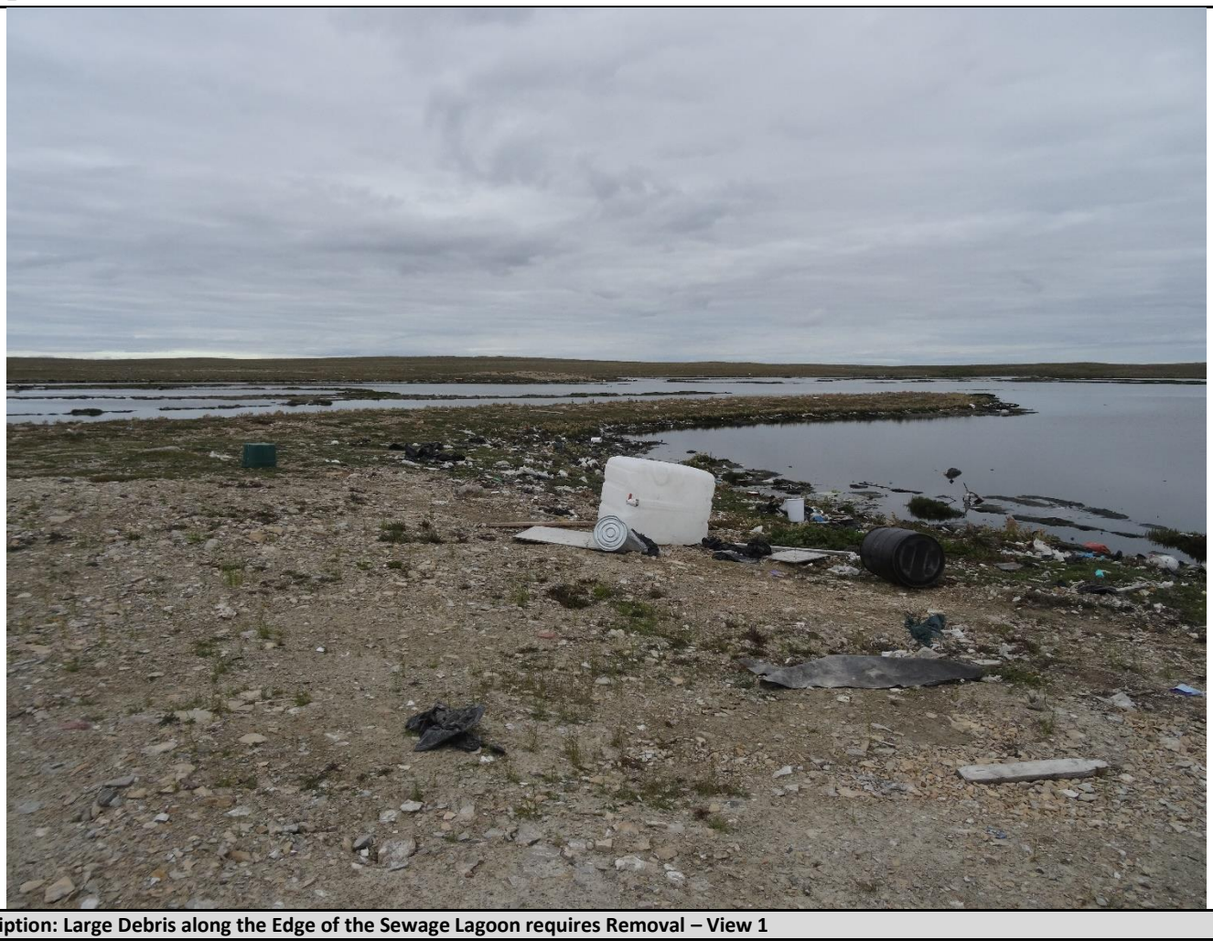
Photo 1



Description: Fuel Tank on Water Intake Pump House MUST be moved at least 30 meters from the High Water Mark

Photo Log # DSC05873

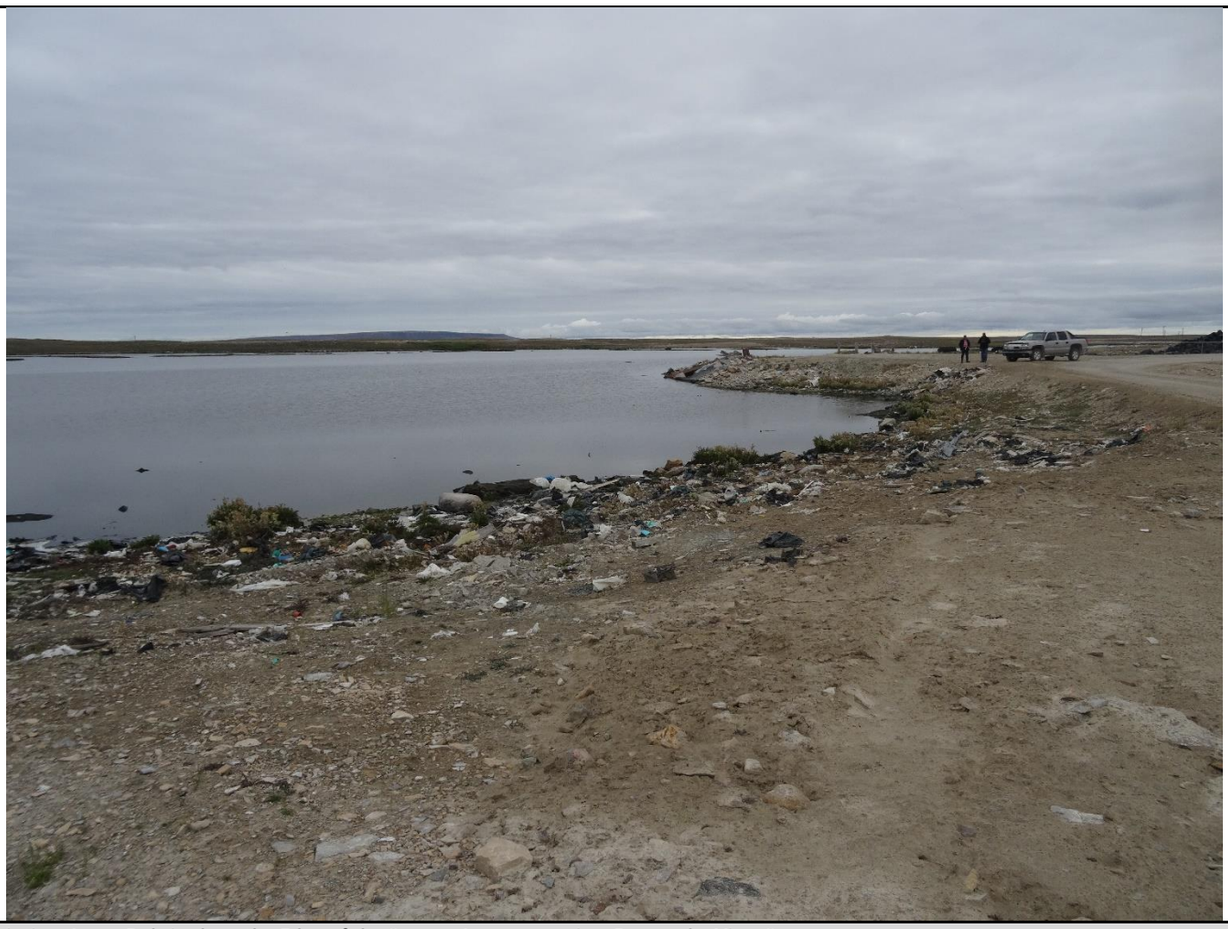
Photo 2



Description: Large Debris along the Edge of the Sewage Lagoon requires Removal – View 1

Photo Log # DSC05875

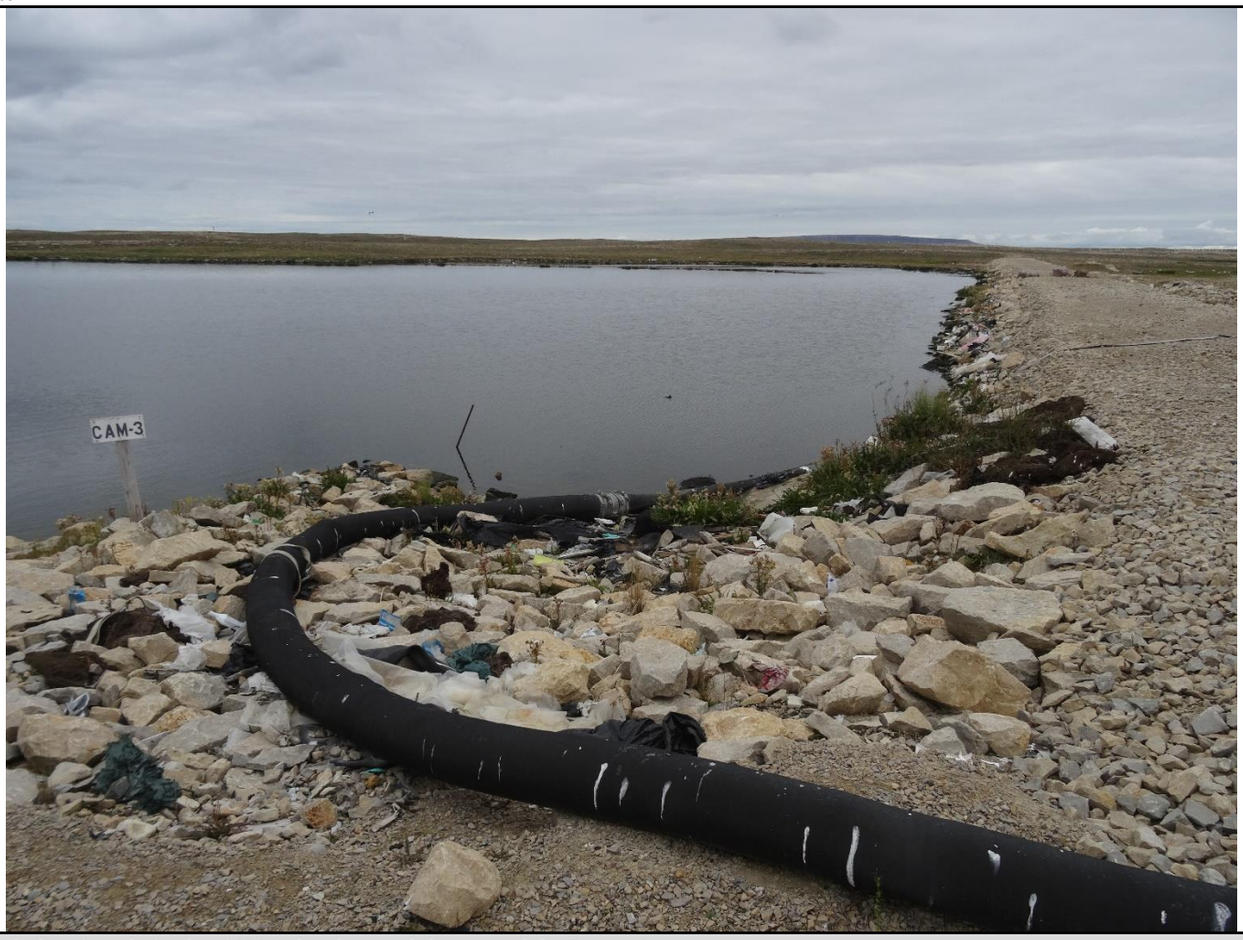
Photo 3



Description: Large Debris along the Edge of the Sewage Lagoon requires Removal – View 2

Photo Log # DSC05884

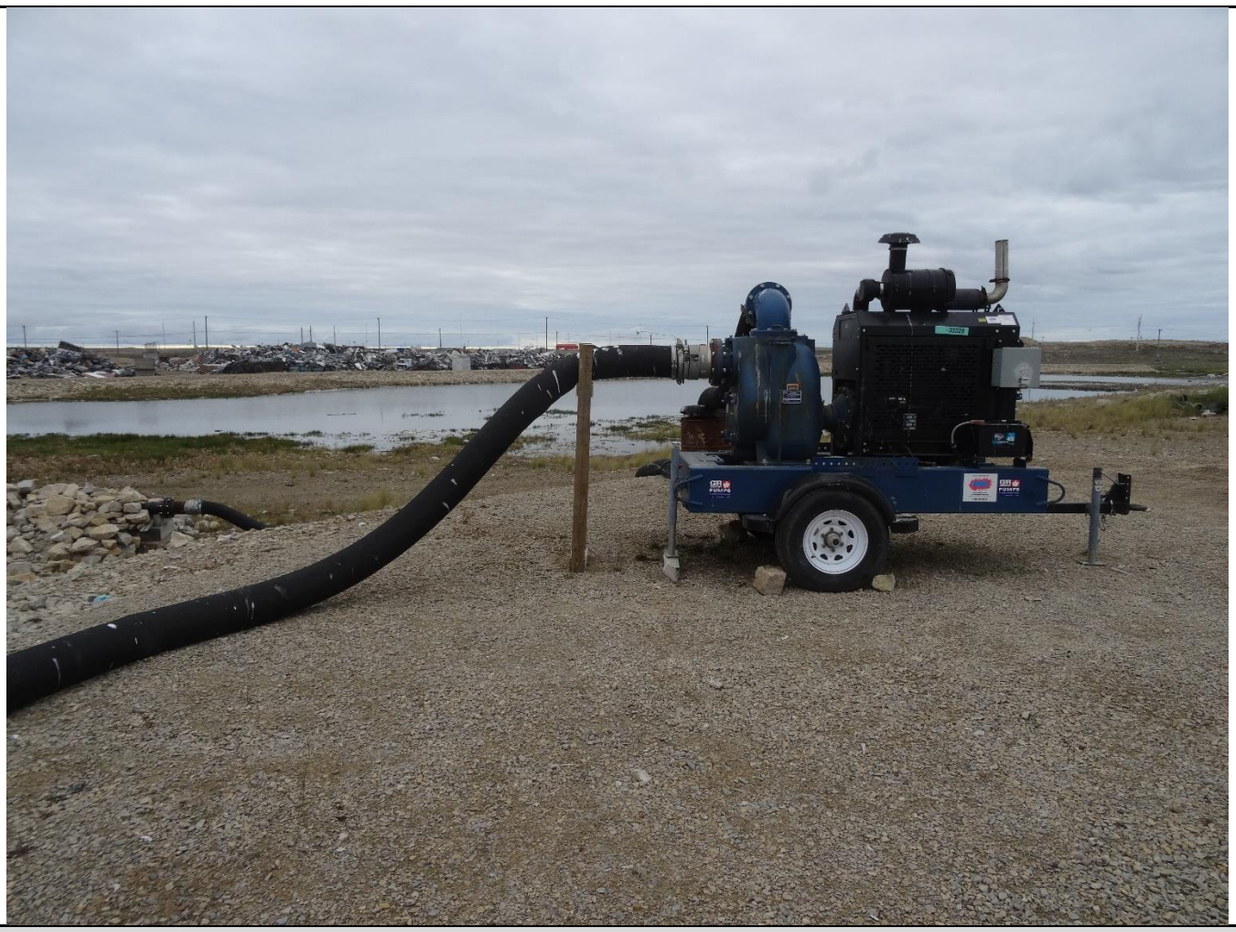
Photo 4



Description: Sample Station CAM-3 showing good signage and the Decant Area

Photo Log # DSC05887

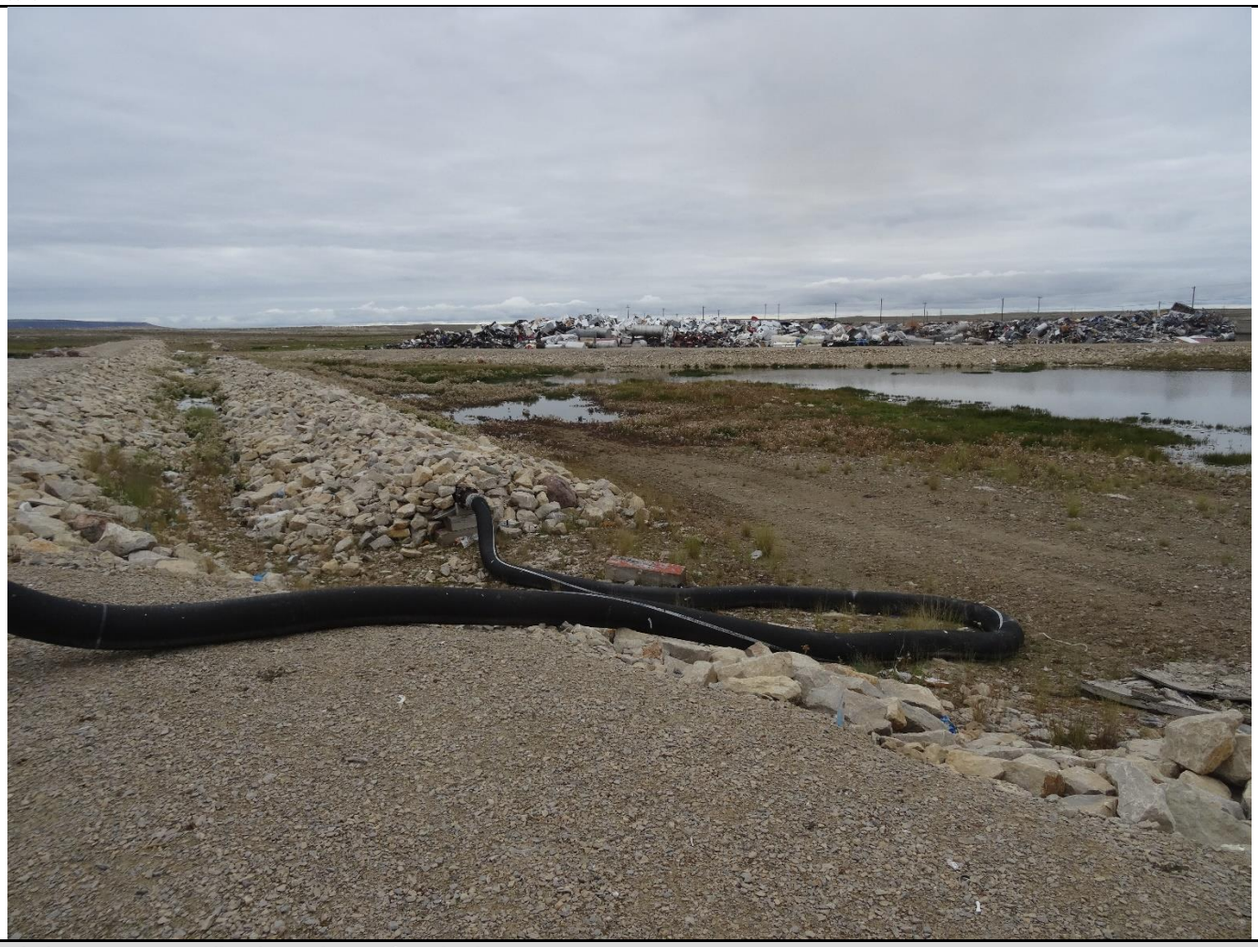
Photo 5



Description: Pump used in the Decant Process

Photo Log # DSC05890

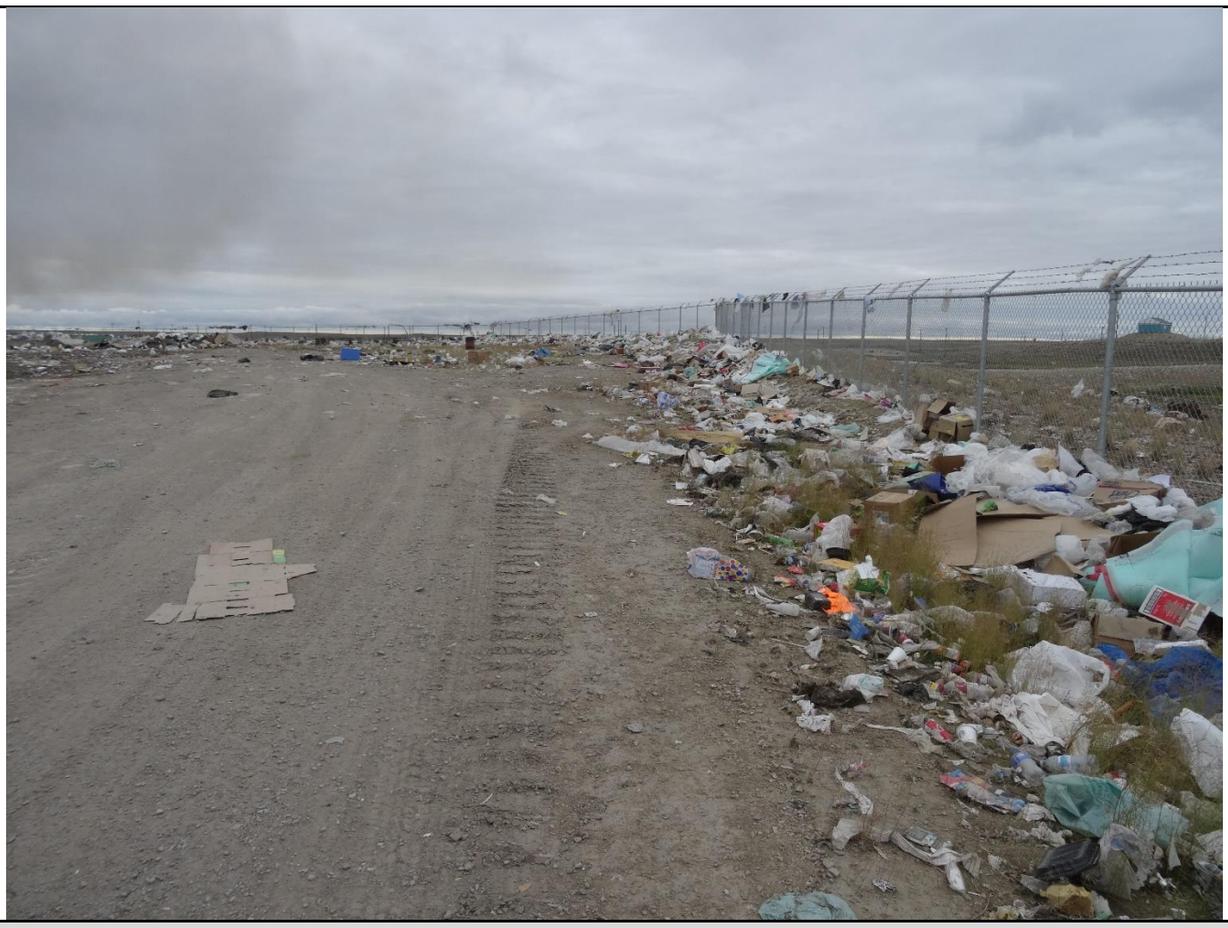
Photo 6



Description: Decant Area Filtration and start of Wetland

Photo Log # DSC05914

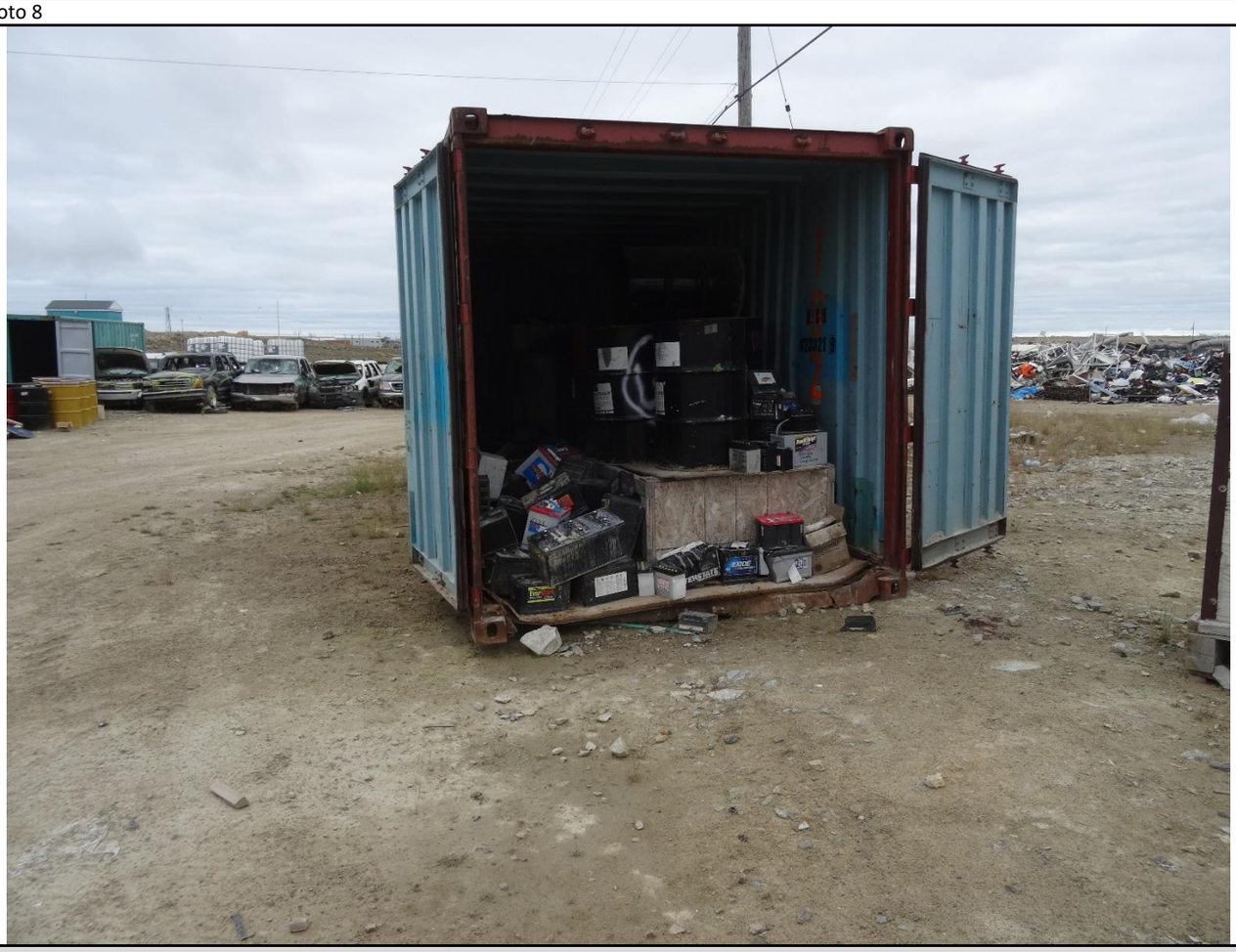
Photo 7



Description: Garbage Dump area showing Debris along Fencing

Photo Log # DSC05925

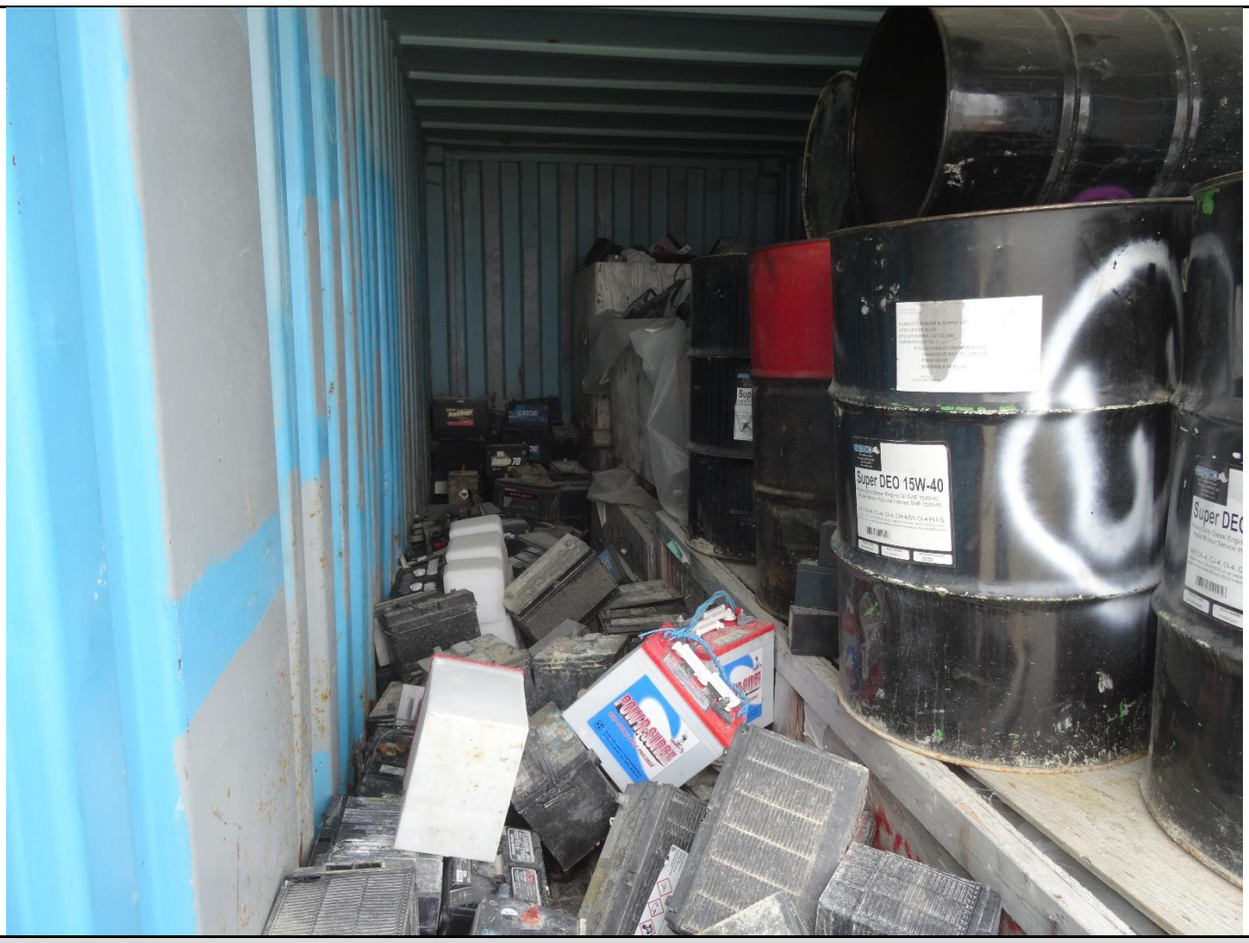
Photo 8



Description: Used Battery Storage within Sea Can – View 1

Photo Log # DSC05926

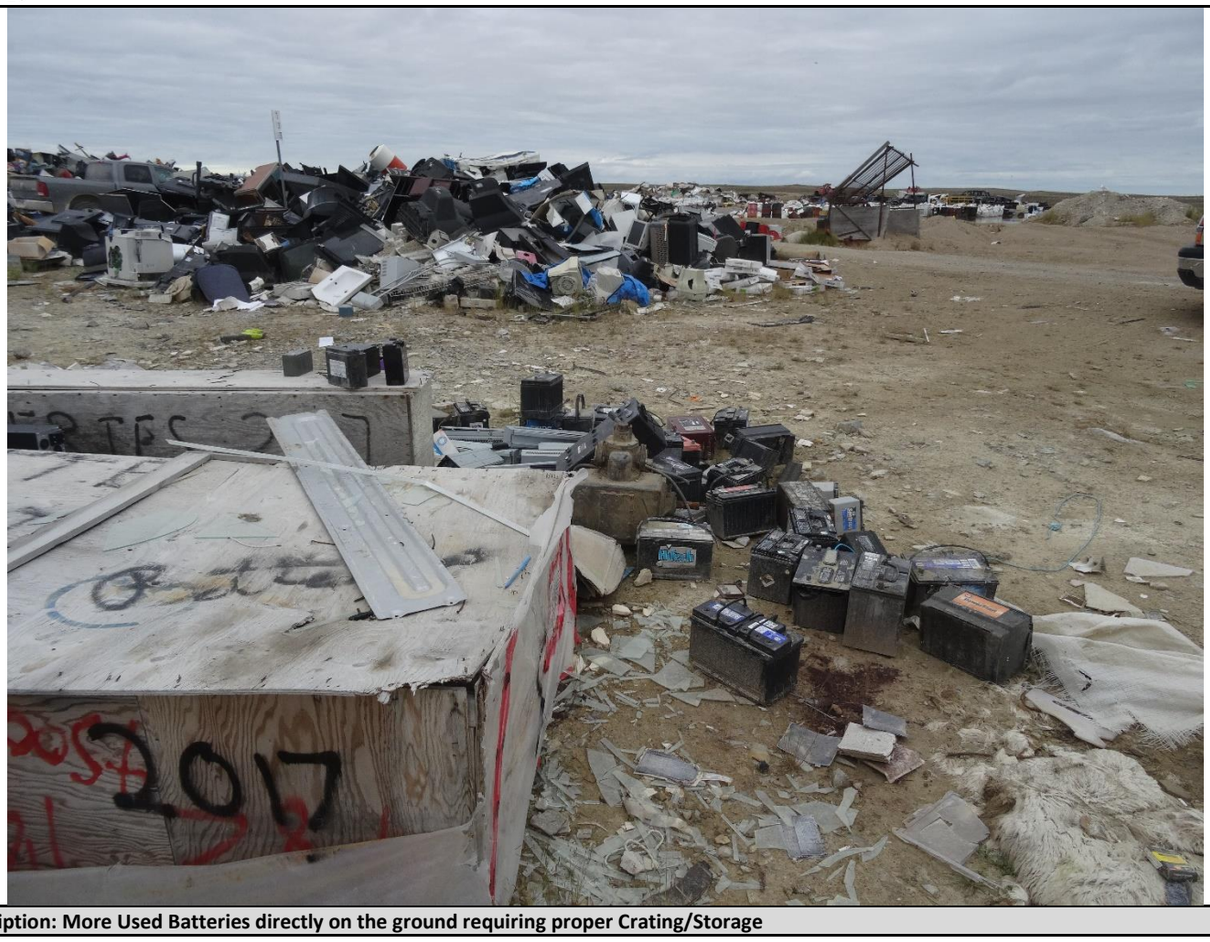
Photo 9



Description: Used Battery Storage within Sea Can – View 2

Photo Log # DSC05927

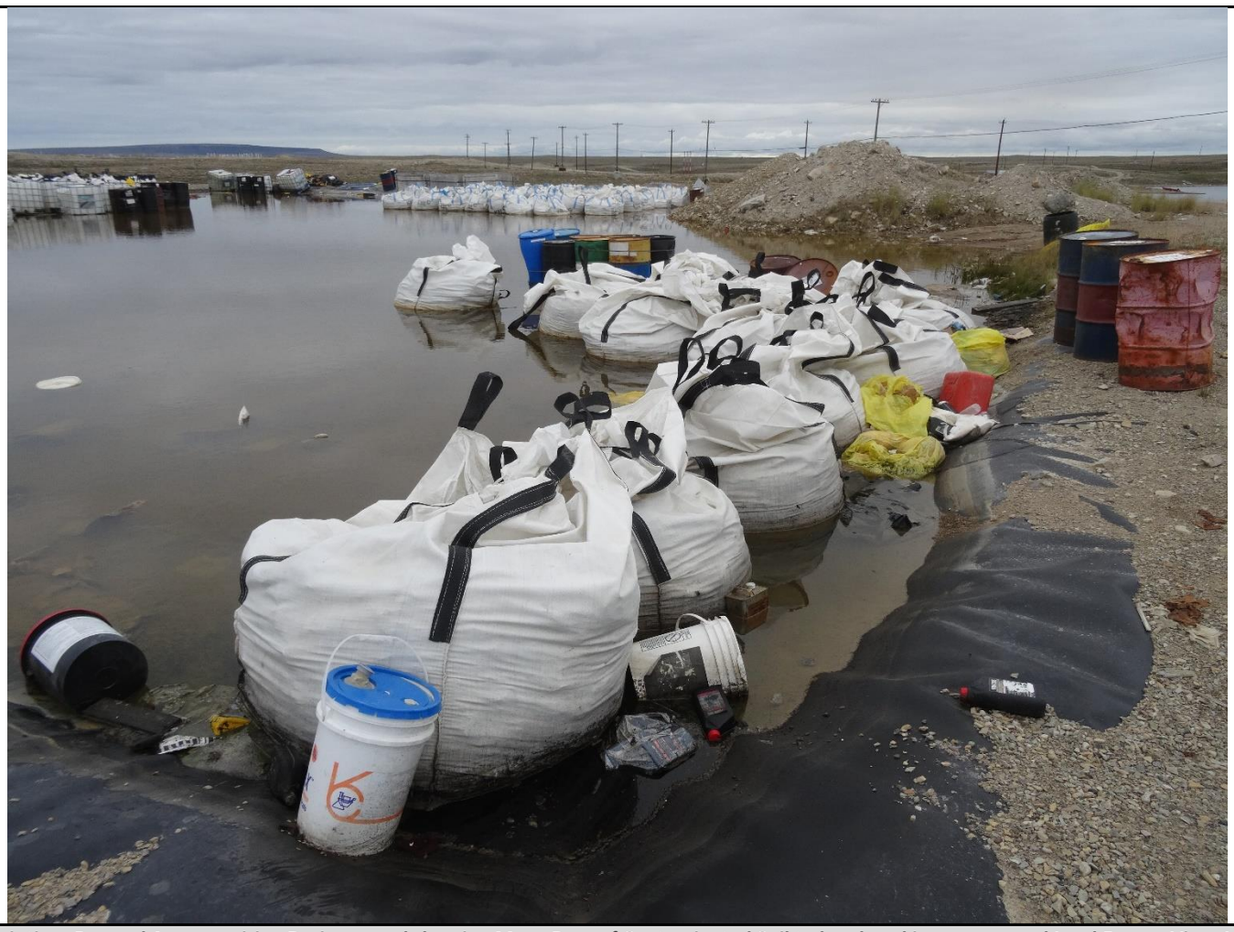
Photo 10



Description: More Used Batteries directly on the ground requiring proper Crating/Storage

Photo Log # DSC05939

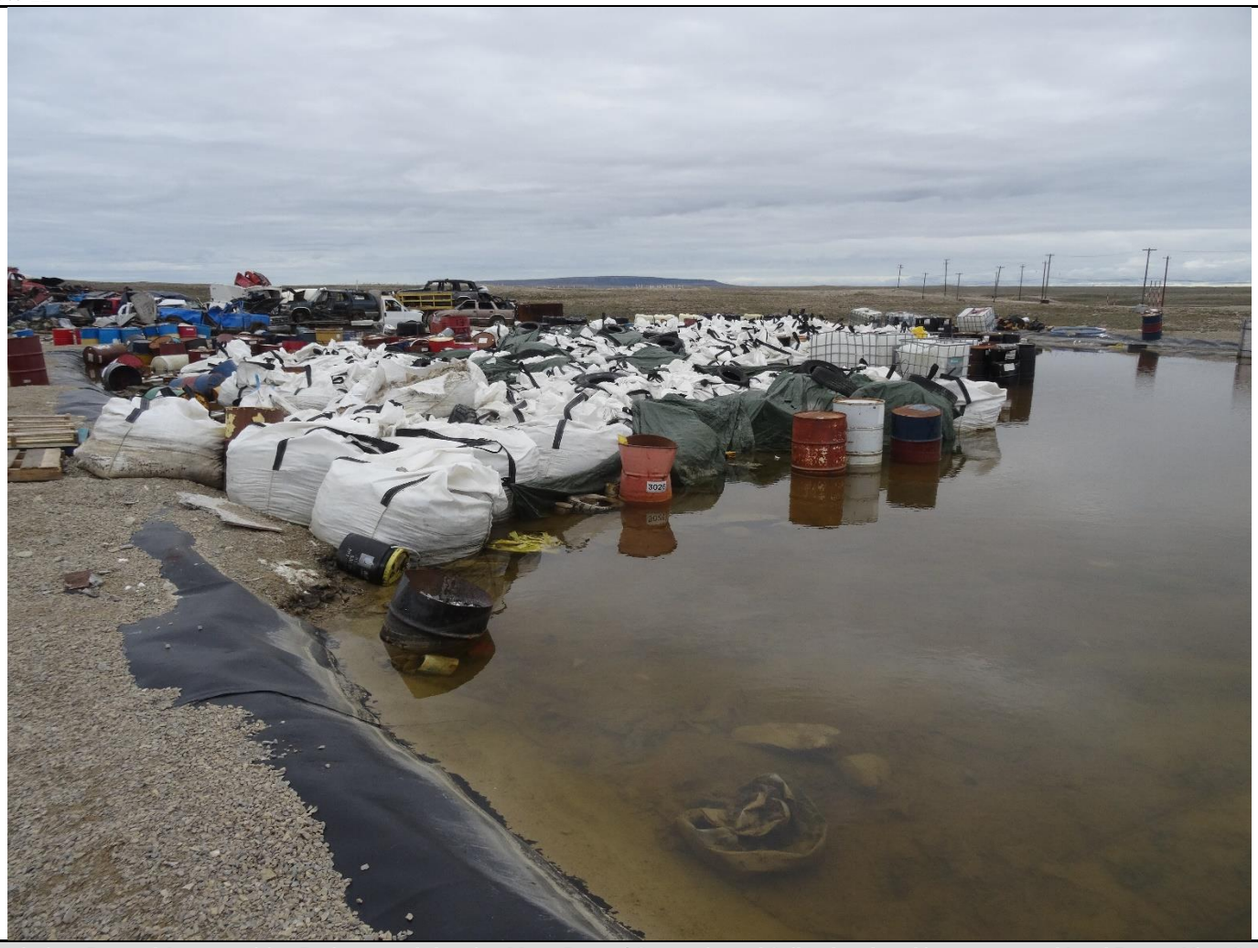
Photo 11



Description: Bermed Area requiring Drainage and showing Mega Bags of Contaminated Soil to be placed in an approved Land Farm – View 1

Photo Log # DSC05940

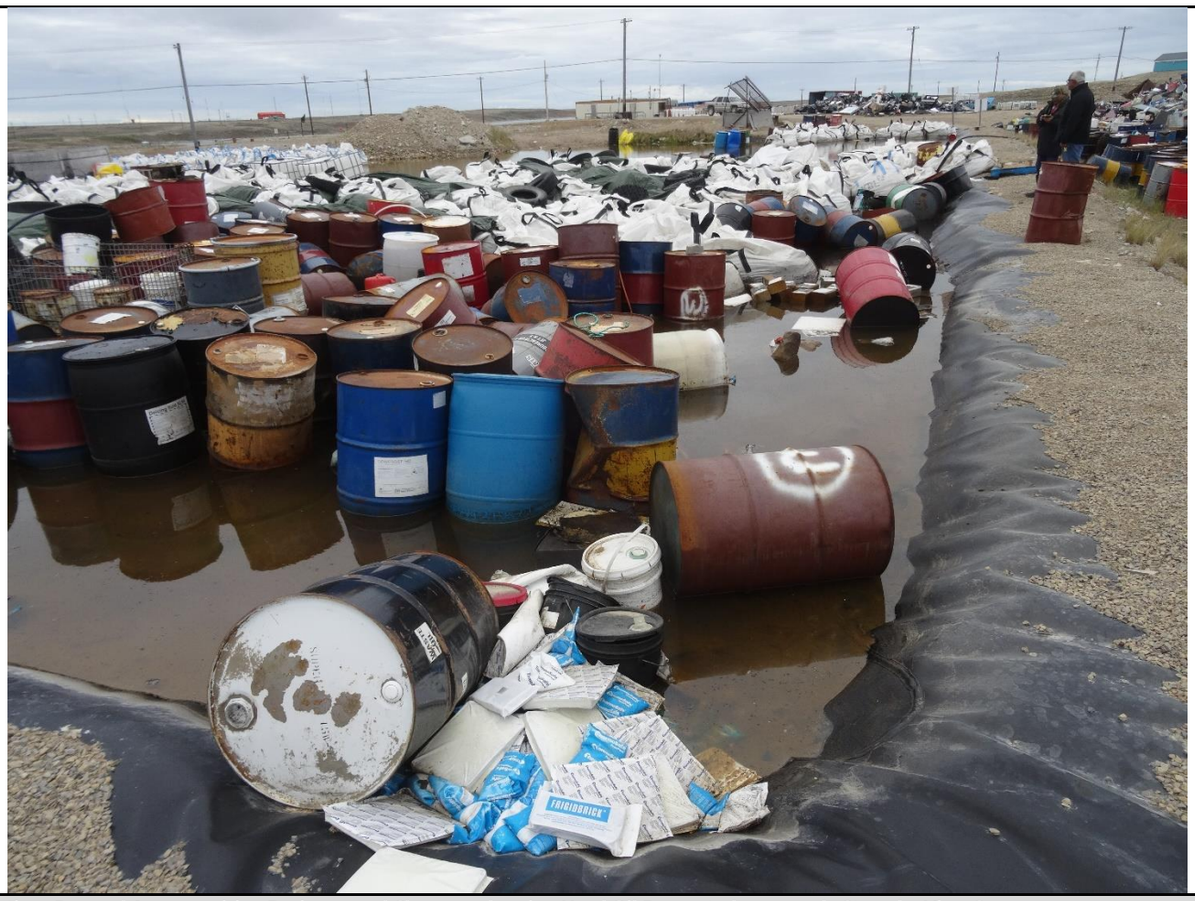
Photo 12



Description: Bermed Area requiring Drainage and showing Mega Bags of Contaminated Soil to be placed in an approved Land Farm – View 2

Photo Log # DSC05947

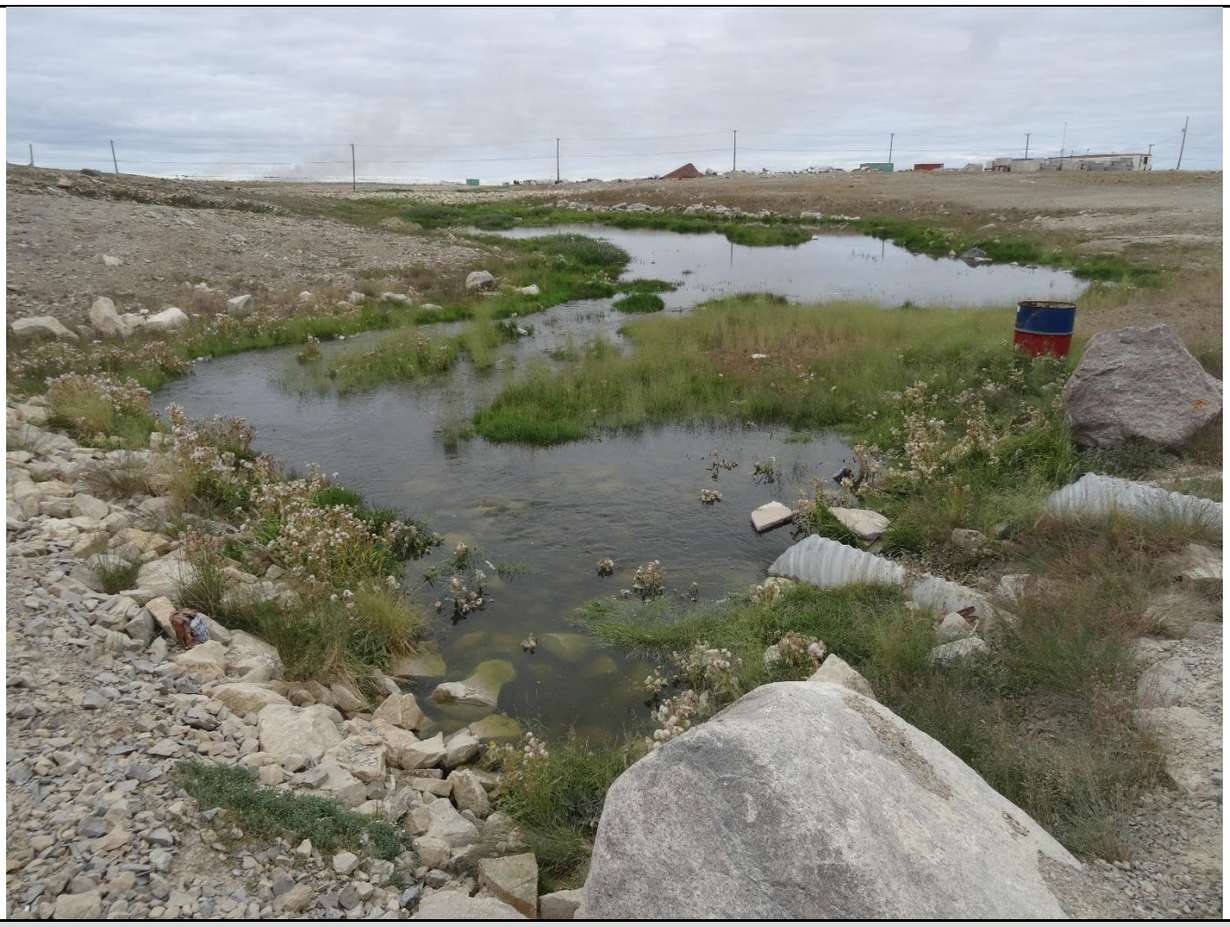
Photo 13



Description: Bermed Area requiring Drainage and Clean-up showing Used Oil Drums to be properly Stored – View 3

Photo Log # DSC05957

Photo 14



Description: Sample Station CAM-6 requiring Replacement Signage