

## ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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**YEAR BEING REPORTED: 2022**

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water License No. 3BM-CAM2030 issued to the Municipality of Cambridge Bay.

- a) **Tabular summaries of all data generated under the “Monitoring Program”;**
- b) **Monthly and annual quantities in cubic metres of fresh Water obtained at the Water Supply Facility and/or for all purposes under the licence;**
- c) **Monthly and annual quantities in cubic metres of all Waste discharged;**

Attached are quantities of water used as reported by the Municipality and the estimated discharge of sewage waste based on quantities used.

<b>Month Reported</b>	<b>Quantity of Water Obtained from all sources (L)</b>	<b>Quantity of Sewage Waste Discharged (Estimated, m<sup>3</sup>)</b>
<b>January</b>	6,243,704.75	Same
<b>February</b>	6,552,437.32	Same
<b>March</b>	7,215,713.05	Same
<b>April</b>	6,781,906.95	Same
<b>May</b>	6,883,091.77	Same
<b>June</b>	6,652,985.36	Same
<b>July</b>	6,533,103.10	Same
<b>August</b>	7,254,178.94	Same
<b>September</b>	6,487,334.09	Same
<b>October</b>	7,021,421.68	Same
<b>November</b>	6,896,744.39	Same
<b>December</b>	6,246,539.92	Same
<b>ANNUAL TOTAL</b>	<b>80,769,161.32</b>	<b>Same</b>

Note: Monthly sewage discharge volume is considered as equal to the monthly water consumption volume.

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**d) A summary of any open burning undertaken under Part D, Item 10, including quantity and details of the waste being burned, along with photographic evidence of site cleanup;**

- Open burning was limited to days when westerly winds prevailed.

**e) Summary of modifications and/or major maintenance work carried out on the Water Supply Facility and Waste Disposal Facilities, including all associated structures;**

- There were no modifications and/or major maintenance work carried out on the Water Supply Facility and Waste Disposal Facilities in 2022.

**f) A list of unauthorized discharges and summary of follow-up action taken;**

- See Appendix C for unauthorized discharges. All follow up actions are being managed by the agencies identified in the table.

**g) A summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;**

- There was no abandonment and restoration work completed during 2022. There is no abandonment and restoration work anticipated for 2023.

**h) Any Addendum with updates or revisions for manuals and plans (including *Operations and Maintenance Manuals/Plans*) as required by changes in operation and/or technology;**

- There were no addendums with updates or revisions for manuals and plans in 2022.

**i) A summary of any studies or reports requested by the Board that relate to the use of Water and Waste disposal or restoration, and a brief description of any future studies planned;**

- There were no reports requested for 2022 and there are no future studies currently planned.

**j) Any other details on Water or Waste deposit requested by the Board by November 1 of the year being reported.**

- There were no other details on Water or Waste deposit requested by the Board by November 2022.

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## ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL

- June samples of CAM-6 exceeded parameters for pH. Samples taken prior to the beginning of decant represent snow melt run-off and remaining organics from the previous year rather than decanted wastewater effluent from 2022 so these samples are not representative of treatment.
- Effluent quality limits for CAM-6 are met after decanting.
- June 30 2022, additional sampling was requested for the leak by the Solid Waste Site Fence and both the small and large Hazardous Waste Berms by CIRNAC Inspector Jonathan Mesher. The Laboratory Certificate of Analysis is included in Appendix B.

## FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

- 2020 CIRNAC Municipal Inspection, the Inspector noted 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. The fuel tank at the intake pumphouse will be replaced with a new double walled tank and will be installed within a lined berm an appropriate distance from the water source. Work was completed summer 2022.
- 2021 Solid Waste Inspection, the Inspector noted the licensee is to provide a plan to sort, package and ship hazardous materials out in the next sealift season to an approved facility. Within a few months time, the Hamlet will have a Waste Management Strategy report and be in a better position to address the Landfill and Hazardous Waste site clean up. Information was not provided to CGS at the time of reporting
- 2022 CIRNAC Inspection, the Inspector noted erosion leading out of the lagoon near the Solid Waste Site fence. The Municipality filled in the eroded area with new material.
- 2022 CIRNAC Inspection, the Inspector noted batteries needing to be stored in double containment. Information was not provided to CGS at the time of reporting
- 2022 CIRNAC Inspection, the Inspector noted Hazardous Waste Materials stored outside the berms. Information was not provided to CGS at the time of reporting

## List of Appendices

**Appendix A: CAM-6 Effluent Quality Limits – 1 page**

**Appendix B: Laboratory Certificate of Analysis**

- **Certificate of Analysis 06/30/2022 - 8 pages**

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- Certificate of Analysis 07/28/2022 - 8 pages
- Certificate of Analysis 07/28/2022 - 12 pages
- Certificate of Analysis 08/17/2022 - 8 pages

Appendix C: Hazardous Materials Spill Database, Cambridge Bay 2022 – 1 page

Appendix D: Cambridge Bay 2022 Sampling Summary – 1 page

Appendix E: CIRNAC Inspection – 1 page

### Appendix A: CAM-6 Effluent Quality Limits

#### 3BM-CAM2030 Cambridge Bay Monitoring Program Results 2022 for Effluent Quality

Parameters	Maximum concentration of Any Grab Sample	CAM-6		
		June 30	July 28	August 17
CBOD	100 mg/L	-	4	19
Total Suspended Solids	120 mg/L	20	6	54
Fecal Coliforms	1x10 <sup>6</sup> CFU/100mL	-	<10	590
Oil + Grease	No visible sheen	Non-Visible	Non-Visible	Non-Visible
pH	between 6 and 9	9.61	7.84	8.55

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FOR THE MUNICIPALITY OF CAMBRIDGE BAY**

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**Appendix B: Laboratory Certificate of Analysis**

# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

**Taiga Batch No.:**  
*221287*

## - FINAL REPORT -

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**Prepared For:** Hamlet of Cambridge Bay

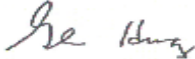
**Address:** P.O. Box 16  
Cambridge Bay, NU  
X0B 0C0

**Attn:** Wiz Mohammed

**Facsimile:** (867) 983-2186

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**Final report has been reviewed and approved by:**



\_\_\_\_\_  
**Glen Hudy**  
**Quality Assurance Officer**

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**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:** July-19-22  
**Print Date:** July-19-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
221287

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-4**

Taiga Sample ID: **001**

**Client Project:**  
**Sample Type:** Sewage  
**Received Date:** 04-Jul-22  
**Sampling Date:** 30-Jun-22  
**Sampling Time:** 9:00  
**Location:** Cambridge Bay Sewage & Waste  
**Report Status:** Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b><u>Cations by ICP-MS</u></b>						
Calcium	149	0.1	mg/L	07-Jul-22	TEL035	
Hardness	592	0.7	mg/L	07-Jul-22	TEL035	
Magnesium	53.5	0.1	mg/L	07-Jul-22	TEL035	
Potassium	39.7	0.1	mg/L	07-Jul-22	TEL035	
Sodium	89.1	0.1	mg/L	07-Jul-22	TEL035	
<b><u>Inorganics - Nutrients</u></b>						
Biochemical Oxygen Demand		2	mg/L		TEL019	105
CBOD		2	mg/L		TEL019	105
Organic Carbon, Total	34.2	0.5	mg/L	07-Jul-22	TEL033	
<b><u>Inorganics - Physicals</u></b>						
Alkalinity, Total (as CaCO <sub>3</sub> )	138	0.4	mg/L	04-Jul-22	TEL060	
Conductivity, Specific (@25C)	1550	0.4	µS/cm	04-Jul-22	TEL059	
pH	7.91		pH units	04-Jul-22	TEL058	
Solids, Total Suspended	8	3	mg/L	07-Jul-22	TEL008	

**Microbiology**

ReportDate: July-19-22  
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Taiga Batch No.:  
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## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-4**

Taiga Sample ID: **001**

Coliforms, Fecal	1		CFU/100mL	TEL017	105
<b><u>Organics</u></b>					
Oil and Grease, visible	Non-visible			04-Jul-22	Visual Exam
<b><u>Subcontracted Inorganics</u></b>					
Chloride	114	1.0	mg/L	12-Jul-22	EPA300.1
NO <sub>2</sub> +NO <sub>3</sub> - N	0.236	0.0510	mg/L	12-Jul-22	EPA300.1
Sulphate	521	0.5	mg/L	12-Jul-22	EPA300.1
<b><u>Subcontracted Nutrients</u></b>					
Ammonia as Nitrogen	1.040	0.0250	mg/L	13-Jul-22	SM4500 NH3
<b><u>Trace Metals, Total</u></b>					
Aluminum	27.0	5	µg/L	09-Jul-22	TEL035
Arsenic	1.4	0.2	µg/L	09-Jul-22	TEL035
Cadmium	< 0.1	0.1	µg/L	09-Jul-22	TEL035
Chromium	0.5	0.1	µg/L	09-Jul-22	TEL035
Cobalt	1.4	0.1	µg/L	09-Jul-22	TEL035
Copper	21.3	0.2	µg/L	09-Jul-22	TEL035
Iron	1900	5	µg/L	09-Jul-22	TEL035
Lead	1.4	0.1	µg/L	09-Jul-22	TEL035
Manganese	46.5	0.1	µg/L	09-Jul-22	TEL035
Mercury	0.01	0.01	µg/L	09-Jul-22	TEL035
Nickel	12.7	0.1	µg/L	09-Jul-22	TEL035
Zinc	23.6	5	µg/L	09-Jul-22	TEL035

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 Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.:  
221287

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-5**

Taiga Sample ID: **002**

Client Project:  
 Sample Type: Sewage  
 Received Date: 04-Jul-22  
 Sampling Date: 30-Jun-22  
 Sampling Time: 9:00  
 Location: Cambridge Bay Sewage & Waste  
 Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<b><u>Cations by ICP-MS</u></b>						
Calcium	31.7	0.1	mg/L	07-Jul-22	TEL035	
Hardness	182	0.7	mg/L	07-Jul-22	TEL035	
Magnesium	25.0	0.1	mg/L	07-Jul-22	TEL035	
Potassium	10.9	0.1	mg/L	07-Jul-22	TEL035	
Sodium	58.7	0.1	mg/L	07-Jul-22	TEL035	
<b><u>Inorganics - Nutrients</u></b>						
Biochemical Oxygen Demand		2	mg/L		TEL019	105
CBOD		2	mg/L		TEL019	105
Organic Carbon, Total	50.0	0.5	mg/L	07-Jul-22	TEL033	
<b><u>Inorganics - Physicals</u></b>						
Alkalinity, Total (as CaCO3)	144	0.4	mg/L	04-Jul-22	TEL060	
Conductivity, Specific (@25C)	627	0.4	µS/cm	04-Jul-22	TEL059	
pH	10.1		pH units	04-Jul-22	TEL058	
Solids, Total Suspended	48	3	mg/L	07-Jul-22	TEL008	
<b><u>Microbiology</u></b>						
Coliforms, Fecal		1	CFU/100mL		TEL017	105

ReportDate: July-19-22  
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Taiga Batch No.:  
 221287

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-5**

Taiga Sample ID: **002**

**Organics**

Oil and Grease, visible	Non-visible			04-Jul-22	Visual Exam
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**Subcontracted Inorganics**

Chloride	98.1	0.1	mg/L	12-Jul-22	EPA300.1
NO2+NO3 - N	< 0.0051	0.0051	mg/L	12-Jul-22	EPA300.1
Sulphate	32.0	0.05	mg/L	12-Jul-22	EPA300.1

**Subcontracted Nutrients**

Ammonia as Nitrogen	0.5480	0.05	mg/L	13-Jul-22	SM4500 NH3
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**Trace Metals, Total**

Aluminum	51.1	5	µg/L	09-Jul-22	TEL035
Arsenic	1.6	0.2	µg/L	09-Jul-22	TEL035
Cadmium	< 0.1	0.1	µg/L	09-Jul-22	TEL035
Chromium	0.4	0.1	µg/L	09-Jul-22	TEL035
Cobalt	0.4	0.1	µg/L	09-Jul-22	TEL035
Copper	4.9	0.2	µg/L	09-Jul-22	TEL035
Iron	342	5	µg/L	09-Jul-22	TEL035
Lead	1.1	0.1	µg/L	09-Jul-22	TEL035
Manganese	54.7	0.1	µg/L	09-Jul-22	TEL035
Mercury	< 0.01	0.01	µg/L	09-Jul-22	TEL035
Nickel	2.0	0.1	µg/L	09-Jul-22	TEL035
Zinc	17.4	5	µg/L	09-Jul-22	TEL035

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY



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

Taiga Batch No.:  
**221287**

## - CERTIFICATE OF ANALYSIS -

Client Sample ID: **CAM-6**

Taiga Sample ID: **003**

**Client Project:**

**Sample Type:** Final Discharge  
**Received Date:** 04-Jul-22  
**Sampling Date:** 30-Jun-22  
**Sampling Time:** 9:00  
**Location:** Cambridge Bay Sewage & Waste  
**Report Status:** Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b><u>Cations by ICP-MS</u></b>						
Calcium	32.7	0.1	mg/L	07-Jul-22	TEL035	
Hardness	164	0.7	mg/L	07-Jul-22	TEL035	
Magnesium	20.1	0.1	mg/L	07-Jul-22	TEL035	
Potassium	9.1	0.1	mg/L	07-Jul-22	TEL035	
Sodium	48.9	0.1	mg/L	07-Jul-22	TEL035	
<b><u>Inorganics - Nutrients</u></b>						
Biochemical Oxygen Demand		2	mg/L		TEL019	105
CBOD		2	mg/L		TEL019	105
Organic Carbon, Total	37.4	0.5	mg/L	07-Jul-22	TEL033	
<b><u>Inorganics - Physicals</u></b>						
Alkalinity, Total (as CaCO <sub>3</sub> )	122	0.4	mg/L	04-Jul-22	TEL060	
Conductivity, Specific (@25C)	513	0.4	µS/cm	04-Jul-22	TEL059	
pH	9.61		pH units	04-Jul-22	TEL058	
Solids, Total Suspended	20	3	mg/L	07-Jul-22	TEL008	
<b><u>Microbiology</u></b>						
Coliforms, Fecal		1	CFU/100mL		TEL017	105

**ReportDate:** July-19-22  
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 4601-52nd Ave., Box 1320, Yellowknife, NT, X1A 2L9  
 Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.:  
**221287**

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-6**

Taiga Sample ID: **003**

**Organics**

Oil and Grease, visible	Non-visible			04-Jul-22	Visual Exam
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**Subcontracted Inorganics**

Chloride	74.5	0.1	mg/L	12-Jul-22	EPA300.1
NO <sub>2</sub> +NO <sub>3</sub> - N	< 0.0051	0.0051	mg/L	12-Jul-22	EPA300.1
Sulphate	26.5	0.05	mg/L	12-Jul-22	EPA300.1

**Subcontracted Nutrients**

Ammonia as Nitrogen	0.8900	0.05	mg/L	13-Jul-22	SM4500 NH3
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**Trace Metals, Total**

Aluminum	42.3	5	µg/L	09-Jul-22	TEL035
Arsenic	2.0	0.2	µg/L	09-Jul-22	TEL035
Cadmium	< 0.1	0.1	µg/L	09-Jul-22	TEL035
Chromium	0.3	0.1	µg/L	09-Jul-22	TEL035
Cobalt	0.5	0.1	µg/L	09-Jul-22	TEL035
Copper	3.8	0.2	µg/L	09-Jul-22	TEL035
Iron	527	5	µg/L	09-Jul-22	TEL035
Lead	1.3	0.1	µg/L	09-Jul-22	TEL035
Manganese	57.8	0.1	µg/L	09-Jul-22	TEL035
Mercury	< 0.01	0.01	µg/L	09-Jul-22	TEL035
Nickel	2.0	0.1	µg/L	09-Jul-22	TEL035
Zinc	32.8	5	µg/L	09-Jul-22	TEL035

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

**Taiga Batch No.:**  
**221287**

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## - CERTIFICATE OF ANALYSIS -

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**Client Sample ID: CAM-6**

**Taiga Sample ID: 003**

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## - DATA QUALIFIERS -

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*Data Qualifier Descriptions:*

**105** *Samples received past hold time; analysis not possible.*

\* 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

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

**Taiga Batch No.:**  
**221537**

- FINAL REPORT -

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**Prepared For:** Hamlet of Cambridge Bay

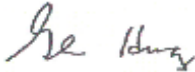
**Address:** P.O. Box 16  
Cambridge Bay, NU  
X0B 0C0

**Attn:** Wiz Mohammed

**Facsimile:** (867) 983-2186

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**Final report has been reviewed and approved by:**



**Glen Hudy**  
**Quality Assurance Officer**

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**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:** August-08-22  
**Print Date:** August-08-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
221537

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-4**

Taiga Sample ID: **001**

Client Project:  
 Sample Type: Sewage  
 Received Date: 29-Jul-22  
 Sampling Date: 28-Jul-22  
 Sampling Time: 9:25  
 Location: Cambridge Bay Sewage & Waste  
 Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b><u>Inorganics - Nutrients</u></b>						
Ammonia as Nitrogen	5.95	0.005	mg/L	03-Aug-22	TEL068	
Biochemical Oxygen Demand	4	2	mg/L	29-Jul-22	TEL019	
CBOD	3	2	mg/L	29-Jul-22	TEL019	
Organic Carbon, Total	35.6	0.5	mg/L	03-Aug-22	TEL033	
<b><u>Inorganics - Physicals</u></b>						
Alkalinity, Total (as CaCO <sub>3</sub> )	257	0.4	mg/L	02-Aug-22	TEL060	
Conductivity, Specific (@25C)	2500	0.4	µS/cm	02-Aug-22	TEL059	
pH	7.98		pH units	02-Aug-22	TEL058	
Solids, Total Suspended	10	3	mg/L	02-Aug-22	TEL008	
<b><u>Major Ions</u></b>						
Calcium	252	0.1	mg/L	05-Aug-22	TEL055	
Chloride	217	0.7	mg/L	03-Aug-22	TEL055	
Hardness	1030	0.7	mg/L	05-Aug-22	TEL055	
Magnesium	96.5	0.1	mg/L	05-Aug-22	TEL055	

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 Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.:  
**221537**

## - CERTIFICATE OF ANALYSIS -

---

Client Sample ID: **CAM-4**

Taiga Sample ID: **001**

Nitrate+Nitrite as Nitrogen	< 0.01	0.01	mg/L	03-Aug-22	TEL055
Potassium	69.7	0.1	mg/L	05-Aug-22	TEL055
Sodium	160	0.1	mg/L	05-Aug-22	TEL055
Sulphate	972	1	mg/L	03-Aug-22	TEL055
<b><u>Microbiology</u></b>					
Coliforms, Fecal	60	1	CFU/100mL	29-Jul-22	TEL017
<b><u>Organics</u></b>					
Oil and Grease, visible	Non-visible			29-Jul-22	Visual Exam
<b><u>Trace Metals, Total</u></b>					
Aluminum	27.1	0.6	µg/L	04-Aug-22	TEL035
Arsenic	1.5	0.2	µg/L	04-Aug-22	TEL035
Cadmium	< 0.0	0.04	µg/L	04-Aug-22	TEL035
Chromium	0.5	0.1	µg/L	04-Aug-22	TEL035
Cobalt	1.2	0.1	µg/L	04-Aug-22	TEL035
Copper	7.8	0.2	µg/L	04-Aug-22	TEL035
Iron	1240	5	µg/L	04-Aug-22	TEL035
Lead	1.2	0.1	µg/L	04-Aug-22	TEL035
Manganese	92.3	0.1	µg/L	04-Aug-22	TEL035
Mercury	0.01	0.01	µg/L	04-Aug-22	TEL035
Nickel	13.1	0.1	µg/L	04-Aug-22	TEL035
Zinc	11.8	0.4	µg/L	04-Aug-22	TEL035

ReportDate: August-08-22  
 Print Date: August-08-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
**221537**

- CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-5**

Taiga Sample ID: **002**

Client Project:  
 Sample Type: Sewage  
 Received Date: 29-Jul-22  
 Sampling Date: 28-Jul-22  
 Sampling Time: 9:05  
 Location: Cambridge Bay Sewage & Waste  
 Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b><u>Inorganics - Nutrients</u></b>						
Ammonia as Nitrogen	0.166	0.005	mg/L	03-Aug-22	TEL068	
Biochemical Oxygen Demand	5	2	mg/L	29-Jul-22	TEL019	
CBOD	10	2	mg/L	29-Jul-22	TEL019	
Organic Carbon, Total	35.3	0.5	mg/L	03-Aug-22	TEL033	
<b><u>Inorganics - Physicals</u></b>						
Alkalinity, Total (as CaCO <sub>3</sub> )	189	0.4	mg/L	02-Aug-22	TEL060	
Conductivity, Specific (@25C)	906	0.4	µS/cm	02-Aug-22	TEL059	
pH	9.71		pH units	02-Aug-22	TEL058	
Solids, Total Suspended	36	3	mg/L	02-Aug-22	TEL008	
<b><u>Major Ions</u></b>						
Calcium	43.0	0.1	mg/L	04-Aug-22	TEL055	
Chloride	150	0.7	mg/L	03-Aug-22	TEL055	
Hardness	269	0.7	mg/L	04-Aug-22	TEL055	
Magnesium	39.3	0.1	mg/L	04-Aug-22	TEL055	
Nitrate+Nitrite as Nitrogen	< 0.01	0.01	mg/L	03-Aug-22	TEL055	
Potassium	16.7	0.1	mg/L	04-Aug-22	TEL055	

ReportDate: August-08-22  
 Print Date: August-08-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
221537

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-5**

Taiga Sample ID: **002**

Sodium	92.0	0.1	mg/L	04-Aug-22	TEL055
Sulphate	67	1	mg/L	03-Aug-22	TEL055
<b><u>Microbiology</u></b>					
Coliforms, Fecal	20	10	CFU/100mL	29-Jul-22	TEL017
<b><u>Organics</u></b>					
Oil and Grease, visible	Non-visible			29-Jul-22	Visual Exam
<b><u>Trace Metals, Total</u></b>					
Aluminum	49.2	0.6	µg/L	04-Aug-22	TEL035
Arsenic	2.9	0.2	µg/L	04-Aug-22	TEL035
Cadmium	< 0.0	0.04	µg/L	04-Aug-22	TEL035
Chromium	0.3	0.1	µg/L	04-Aug-22	TEL035
Cobalt	0.7	0.1	µg/L	04-Aug-22	TEL035
Copper	5.1	0.2	µg/L	04-Aug-22	TEL035
Iron	437	5	µg/L	04-Aug-22	TEL035
Lead	1.1	0.1	µg/L	04-Aug-22	TEL035
Manganese	30.6	0.1	µg/L	04-Aug-22	TEL035
Mercury	0.01	0.01	µg/L	04-Aug-22	TEL035
Nickel	3.9	0.1	µg/L	04-Aug-22	TEL035
Zinc	6.8	0.4	µg/L	04-Aug-22	TEL035

ReportDate: August-08-22  
 Print Date: August-08-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
221537

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-6**

Taiga Sample ID: **003**

Client Project:  
 Sample Type: Sewage  
 Received Date: 29-Jul-22  
 Sampling Date: 28-Jul-22  
 Sampling Time: 9:00  
 Location: Cambridge Bay Sewage & Waste  
 Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b><u>Inorganics - Nutrients</u></b>						
Ammonia as Nitrogen	0.314	0.005	mg/L	03-Aug-22	TEL068	
Biochemical Oxygen Demand	< 2	2	mg/L	29-Jul-22	TEL019	
CBOD	4	2	mg/L	29-Jul-22	TEL019	
Organic Carbon, Total	31.9	0.5	mg/L	03-Aug-22	TEL033	
<b><u>Inorganics - Physicals</u></b>						
Alkalinity, Total (as CaCO <sub>3</sub> )	240	0.4	mg/L	02-Aug-22	TEL060	
Conductivity, Specific (@25C)	978	0.4	µS/cm	02-Aug-22	TEL059	
pH	7.84		pH units	02-Aug-22	TEL058	
Solids, Total Suspended	6	3	mg/L	02-Aug-22	TEL008	
<b><u>Major Ions</u></b>						
Calcium	59.2	0.1	mg/L	04-Aug-22	TEL055	
Chloride	132	0.7	mg/L	03-Aug-22	TEL055	
Hardness	312	0.7	mg/L	04-Aug-22	TEL055	
Magnesium	39.9	0.1	mg/L	04-Aug-22	TEL055	
Nitrate+Nitrite as Nitrogen	< 0.01	0.01	mg/L	03-Aug-22	TEL055	
Potassium	15.6	0.1	mg/L	04-Aug-22	TEL055	

ReportDate: August-08-22  
 Print Date: August-08-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
**221537**

- CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-6**

Taiga Sample ID: **003**

Sodium	81.0	0.1	mg/L	04-Aug-22	TEL055
Sulphate	59	1	mg/L	03-Aug-22	TEL055
<b><u>Microbiology</u></b>					
Coliforms, Fecal	< 10	10	CFU/100mL	29-Jul-22	TEL017
<b><u>Organics</u></b>					
Oil and Grease, visible	Non-visible			29-Jul-22	Visual Exam
<b><u>Trace Metals, Total</u></b>					
Aluminum	18.1	0.6	µg/L	04-Aug-22	TEL035
Arsenic	2.5	0.2	µg/L	04-Aug-22	TEL035
Cadmium	< 0.0	0.04	µg/L	04-Aug-22	TEL035
Chromium	0.3	0.1	µg/L	04-Aug-22	TEL035
Cobalt	0.7	0.1	µg/L	04-Aug-22	TEL035
Copper	2.1	0.2	µg/L	04-Aug-22	TEL035
Iron	1230	5	µg/L	04-Aug-22	TEL035
Lead	0.6	0.1	µg/L	04-Aug-22	TEL035
Manganese	173	0.1	µg/L	04-Aug-22	TEL035
Mercury	< 0.01	0.01	µg/L	04-Aug-22	TEL035
Nickel	4.3	0.1	µg/L	04-Aug-22	TEL035
Zinc	5.2	0.4	µg/L	04-Aug-22	TEL035

ReportDate: August-08-22  
 Print Date: August-08-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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## Taiga Environmental Laboratory

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

Taiga Batch No.:  
221537

### - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-6**

Taiga Sample ID: **003**

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\* 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: August-08-22  
Print Date: August-08-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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TAIGA LABS YK

09:00:23 08-09-2022

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

Taiga Batch No.:  
221536

## - FINAL REPORT -

Prepared For: Hamlet of Cambridge Bay

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

Attn: Wiz Mohammed

Facsimile: (867) 983-2186

Final report has been reviewed and approved by:

Glen Hady  
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.

Report Date: August-10-22  
Print Date: August-10-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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TAIGA LABS YK

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

**Taiga Batch No:**  
221536

## - CERTIFICATE OF ANALYSIS -

**Client Sample ID:** Solid Waste Entrance - Leak

**Taiga Sample ID:** 001

**Client Project:**  
**Sample Type:** Wastewater  
**Received Date:** 29-Jul-22  
**Sampling Date:** 28-Jul-22  
**Sampling Time:**  
**Location:** Cambridge Bay Solid Waste Site  
**Report Status:** Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b><u>Inorganics - Nutrients</u></b>						
Biochemical Oxygen Demand	5	2	mg/L	29-Jul-22	TEL019	
CBOD	7	2	mg/L	29-Jul-22	TEL019	
<b><u>Inorganics - Physicals</u></b>						
Conductivity, Specific (@25C)	4480	0.4	µS/cm	02-Aug-22	TEL059	
pH	7.86		pH units	02-Aug-22	TEL058	
Solids, Total Suspended	18	3	mg/L	03-Aug-22	TEL008	
<b><u>Major Ions</u></b>						
Hardness	1920	0.7	mg/L	05-Aug-22	TEL055	
<b><u>Organics</u></b>						
Benzene	< 2.0	2	ug/L	04-Aug-22	TEL075	
Ethylbenzene	< 2.0	2	ug/L	04-Aug-22	TEL075	
P2: C10-C16	< 0.2	0.2	mg/L	04-Aug-22	TEL067	
P3: C16-C34	< 0.2	0.2	mg/L	04-Aug-22	TEL067	
P4: C34-C50	< 0.2	0.2	mg/L	04-Aug-22	TEL067	
Hydrocarbons, Total Extractable	< 0.2	0.2	mg/L	04-Aug-22	TEL067	

**Report Date:** August-10-22  
**Print Date:** August-10-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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TAIGA LABS YK

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08-09-2022

3/12



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

Taiga Batch No.:  
221536

## - CERTIFICATE OF ANALYSIS -

<b>Client Sample ID:</b> Solid Waste Entrance - Leak				<b>Taiga Sample ID:</b> 001
Hydrocarbons, Volatile	< 0.3	0.3	mg/L	04-Aug-22 TEL076
Oil and Grease, Visible	Non-visible			29-Jul-22 Visual Exam
Toluene	< 2.0	2	ug/L	04-Aug-22 TEL075
Xylenes	< 2.0	2	ug/L	04-Aug-22 TEL075
<u>Subcontracted Organics</u>				
1-methylnaphthalene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
2-methylnaphthalene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Acenaphthene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Acenaphthylene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Acridine	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Anthracene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Benzo(a)anthracene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Benzo(a)pyrene	< 0.0050	0.005	ug/L	06-Aug-22 EPA3510
Benzo(b+j+k)fluoranthene	< 0.015	0.015	ug/L	06-Aug-22 EPA3510
Benzo(b)fluoranthene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Benzo(g,h,i)perylene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Benzo(k)fluoranthene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Chrysene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Dibenzo(a,h)anthracene	< 0.0050	0.005	ug/L	06-Aug-22 EPA3510
Fluoranthene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Fluorane	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Halocetic Acids, Total		0.0054	mg/L	EPA 552
Indeno(1,2,3-cd)pyrene	< 0.010	0.01	ug/L	06-Aug-22 EPA3510
Naphthalene	< 0.050	0.05	ug/L	06-Aug-22 EPA3510
Phenanthrene	< 0.020	0.02	ug/L	06-Aug-22 EPA3510

Report Date: August-10-22  
Print Date: August-10-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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TAIGA LABS YK

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

Taiga Batch No.:  
221536

## - CERTIFICATE OF ANALYSIS -

Client Sample ID:	Solid Waste Entrance - Leak		Taiga Sample ID: 001		
Phenols, Total	0.0044	0.001	µg/L	06-Aug-22	AB ENV.06637
Pyrene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510
Quinoline	< 0.100	0.1	µg/L	06-Aug-22	EPA3510 <span style="float: right;">236</span>
<u>Trace Metals, Total</u>					
Aluminium	23.1	0.6	µg/L	04-Aug-22	TEL035
Antimony	10.6	0.1	µg/L	04-Aug-22	TEL035
Arsenic	3.0	0.2	µg/L	04-Aug-22	TEL035
Barium	53.8	0.1	µg/L	04-Aug-22	TEL035
Beryllium	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Bismuth	< 0.2	0.2	µg/L	04-Aug-22	TEL035
Boron	3870	0.9	µg/L	04-Aug-22	TEL035
Cadmium	0.1	0.04	µg/L	04-Aug-22	TEL035
Cesium	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Chromium	0.9	0.1	µg/L	04-Aug-22	TEL035
Cobalt	4.4	0.1	µg/L	04-Aug-22	TEL035
Copper	26.0	0.2	µg/L	04-Aug-22	TEL035
Iron	1920	5	µg/L	04-Aug-22	TEL035
Lead	2.0	0.1	µg/L	04-Aug-22	TEL035
Lithium	78.6	0.2	µg/L	04-Aug-22	TEL035
Manganese	547	0.1	µg/L	04-Aug-22	TEL035
Mercury	0.04	0.01	µg/L	04-Aug-22	TEL035
Molybdenum	2.6	0.1	µg/L	04-Aug-22	TEL035
Nickel	22.2	0.1	µg/L	04-Aug-22	TEL035
Rubidium	34.2	0.1	µg/L	04-Aug-22	TEL035
Selenium	0.5	0.3	µg/L	04-Aug-22	TEL035

Report Date: August-10-22  
Print Date: August-28-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

8676692718

TAIGA LABS YK

09:03:14 08-09-2022

5/12



**Taiga Environmental Laboratory**  
 4601-52nd Ave., Box 1320, Yellowknife, NT, X1A 2L9  
 Tel: (867)-967-9235 Fax: (867)-920-8740

Taiga Batch No.:  
221536

## - CERTIFICATE OF ANALYSIS -

<b>Client Sample ID:</b> Solid Waste Entrance - Leak		<b>Taiga Sample ID:</b> 001	
Silver	< 0.1	0.1	µg/L
Strontium	1340	0.1	µg/L
Thallium	< 0.1	0.1	µg/L
Tin	0.2	0.1	µg/L
Titanium	1.3	0.1	µg/L
Uranium	2.6	0.1	µg/L
Vanadium	0.8	0.1	µg/L
Zinc	62.4	0.4	µg/L

Report Date: August-10-22  
 Print Date: August-10-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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TAIGA LABORATORY

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**Taiga Environmental Laboratory**  
4601-52nd Ave., Box 1320, Yellowknife, NT, X1A 2L9  
Tel: (867)-767-9235 Fax: (867)-920-9740

Taiga Batch No.:  
221536

## - CERTIFICATE OF ANALYSIS -

**Client Sample ID:** Hazardous Waste Beam - Large

**Taiga Sample ID:** 002

**Client Project:**  
**Sample Type:** Hazardous Wastewater  
**Received Date:** 29-Jul-22  
**Sampling Dates:** 28-Jul-22  
**Sampling Time:**  
**Location:** Cambridge Bay Solid Waste Site  
**Report Status:** Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b>Organics</b>						
Benzene	< 2.0	2	ug/L	04-Aug-22	TEL075	
Ethylbenzene	< 2.0	2	ug/L	04-Aug-22	TEL075	
E2: C10-C16	< 0.2	0.2	mg/L	04-Aug-22	TEL067	
F3: C16-C34	6.9	0.2	mg/L	04-Aug-22	TEL067	
F4: C34-C50	1.0	0.2	mg/L	04-Aug-22	TEL067	
Hydrocarbons, Total Extractable	8.1	0.2	mg/L	04-Aug-22	TEL067	
Hydrocarbons, Volatile	< 0.3	0.3	mg/L	04-Aug-22	TEL076	
Toluene	< 2.0	2	ug/L	04-Aug-22	TEL075	
Xylenes	< 2.0	2	ug/L	04-Aug-22	TEL075	
<b>Subcontracted Organics</b>						
1-methylnaphthalene	< 0.010	0.01	ug/L	06-Aug-22	EPA3510	
2-methylnaphthalene	< 0.050	0.05	ug/L	06-Aug-22	EPA3510	236
Acenaphthene	< 0.120	0.12	ug/L	06-Aug-22	EPA3510	236
Acenaphthylene	< 0.030	0.03	ug/L	06-Aug-22	EPA3510	236
Acridine	< 0.210	0.21	ug/L	06-Aug-22	EPA3510	236
Anthracene	< 0.020	0.02	ug/L	06-Aug-22	EPA3510	236

**Report Date:** August-10-22  
**Print Date:** August-10-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

6676692718

TAIGA LABS YK

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

Taiga Batch No.:  
**221536**

## - CERTIFICATE OF ANALYSIS -

Client Sample ID:	Hazardous Waste Berm - Large		Taiga Sample ID: 002			
Benzo(a)anthracene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510	
Benzo(a)pyrene	< 0.020	0.02	µg/L	06-Aug-22	EPA3510	237
Benzo(b+j+k)fluoranthene	< 0.032	0.032	µg/L	06-Aug-22	EPA3510	
Benzo(b)fluoranthene	< 0.030	0.03	µg/L	06-Aug-22	EPA3510	237
Benzo(g,h,i)perylene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510	
Benzo(k)fluoranthene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510	
Chrysene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510	
Dibenzo(a,h)anthracene	< 0.0050	0.005	µg/L	06-Aug-22	EPA3510	
Fluoranthene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510	
Fluorene	< 0.020	0.02	µg/L	06-Aug-22	EPA3510	236
Indeno(1,2,3-cd)pyrene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510	
Naphthalene	< 0.050	0.05	µg/L	06-Aug-22	EPA3510	
Phenanthrene	< 0.020	0.02	µg/L	06-Aug-22	EPA3510	
Phenols, Total	0.0034	0.001	mg/L	08-Aug-22	AB ENV.06537	
Pyrene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510	
Quinoline	< 7.60	7.6	µg/L	06-Aug-22	EPA3510	236
<u>Trace Metals, Total</u>						
Aluminum	20.0	0.6	µg/L	04-Aug-22	TEL035	
Antimony	0.8	0.1	µg/L	04-Aug-22	TEL035	
Arsenic	2.5	0.2	µg/L	04-Aug-22	TEL035	
Barium	31.4	0.1	µg/L	04-Aug-22	TEL035	
Beryllium	< 0.1	0.1	µg/L	04-Aug-22	TEL035	
Bismuth	< 0.2	0.2	µg/L	04-Aug-22	TEL035	
Boron	67.9	0.9	µg/L	04-Aug-22	TEL035	
Cadmium	< 0.0	0.04	µg/L	04-Aug-22	TEL035	

Report Date: August-10-22  
Print Date: August-18-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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08-09-2022

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**Taiga Environmental Laboratory**  
4601-52nd Ave., Box 1320, Yellowknife, NT, X1A 2L9  
Tel: (867)-967-9235 Fax: (867)-920-8740

Taiga Batch No.:  
221536

## - CERTIFICATE OF ANALYSIS -

Client Sample ID:	Hazardous Waste Berm - Large		Taiga Sample ID: 012		
Cesium	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Chromium	0.2	0.1	µg/L	04-Aug-22	TEL035
Cobalt	0.6	0.1	µg/L	04-Aug-22	TEL035
Copper	3.8	0.2	µg/L	04-Aug-22	TEL035
Iron	1060	5	µg/L	04-Aug-22	TEL035
Lead	2.6	0.1	µg/L	04-Aug-22	TEL035
Lithium	7.8	0.2	µg/L	04-Aug-22	TEL035
Manganese	18.5	0.1	µg/L	04-Aug-22	TEL035
Mercury	< 0.01	0.01	µg/L	04-Aug-22	TEL035
Molybdenum	14.0	0.1	µg/L	04-Aug-22	TEL035
Nickel	1.7	0.1	µg/L	04-Aug-22	TEL035
Rubidium	1.0	0.1	µg/L	04-Aug-22	TEL035
Selenium	< 0.3	0.3	µg/L	04-Aug-22	TEL035
Silver	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Strontium	37.0	0.1	µg/L	04-Aug-22	TEL035
Thallium	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Tin	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Titanium	0.7	0.1	µg/L	04-Aug-22	TEL035
Uranium	0.3	0.1	µg/L	04-Aug-22	TEL035
Vanadium	0.8	0.1	µg/L	04-Aug-22	TEL035
Zinc	38.6	0.4	µg/L	04-Aug-22	TEL035

Report Date: August-10-22  
Print Date: August-10-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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TAIGA LABS YK

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

Taiga Batch No.:  
221536

## - CERTIFICATE OF ANALYSIS -

**Client Sample ID:** Hazardous Waste Berm - Small

**Taiga Sample ID:** 003

**Client Project:**

**Sample Type:** Hazardous Wastewater

**Received Date:** 29-Jul-22

**Sampling Date:** 28-Jul-22

**Sampling Time:**

**Location:** Cambridge Bay Solid Waste Site

**Report Status:** Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b>Organics</b>						
Benzene	< 2.0	2	ug/L	04-Aug-22	TEL075	
Ethylbenzene	< 2.0	2	ug/L	04-Aug-22	TEL075	
F2: C10-C16	< 0.2	0.2	mg/L	04-Aug-22	TEL067	
F3: C16-C34	< 0.2	0.2	mg/L	04-Aug-22	TEL067	
F4: C34-C50	< 0.2	0.2	mg/L	04-Aug-22	TEL067	
Hydrocarbons, Total Extractable	< 0.2	0.2	mg/L	04-Aug-22	TEL067	
Hydrocarbons, Volatile	< 0.3	0.3	mg/L	04-Aug-22	TEL076	
Toluene	< 2.0	2	ug/L	04-Aug-22	TEL075	
Xylenes	< 2.0	2	ug/L	04-Aug-22	TEL075	
<b>Subcontracted Organics</b>						
1-methylnaphthalene	< 0.010	0.01	ug/L	06-Aug-22	EPA3510	
2-methylnaphthalene	< 0.010	0.01	ug/L	06-Aug-22	EPA3510	
Acenaphthene	< 0.010	0.01	ug/L	06-Aug-22	EPA3510	
Acenaphthylene	< 0.010	0.01	ug/L	06-Aug-22	EPA3510	
Acridine	< 0.010	0.01	ug/L	06-Aug-22	EPA3510	
Anthracene	< 0.010	0.01	ug/L	06-Aug-22	EPA3510	

**Report Date:** August-10-22

**Print Date:** August-10-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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**Taiga Environmental Laboratory**  
4601-52nd Ave., Box 1320, Yellowknife, NT, X1A 2L9  
Tel: (867)-767-9235 Fax: (867)-920-3740

Taiga Batch No.:  
221536

## - CERTIFICATE OF ANALYSIS -

Client Sample ID:	Hazardous Waste Term - Small		Taiga Sample ID: 003		
Nonzo(n)anthracene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510
Benzo(a)pyrene	< 0.0050	0.005	µg/L	06-Aug-22	EPA3510
Benzo(b+j+k)fluoranthene	< 0.015	0.015	µg/L	06-Aug-22	EPA3510
Benzo(b)fluoranthene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510
Benzo(g,h,i)perylene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510
Benzo(k)fluoranthene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510
Chrysene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510
Dibenzo(a,h)anthracene	< 0.0050	0.005	µg/L	06-Aug-22	EPA3510
Fluoranthene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510
Fluorene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510
Indeno(1,2,3-cd)pyrene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510
Naphthalene	< 0.050	0.05	µg/L	06-Aug-22	EPA3510
Phenanthrene	< 0.020	0.02	µg/L	06-Aug-22	EPA3510
Phenols, Total	0.0016	0.001	mg/L	08-Aug-22	AB ENY,06837
Pyrene	< 0.010	0.01	µg/L	06-Aug-22	EPA3510
Quinoline	< 0.140	0.14	µg/L	06-Aug-22	EPA3510      236
<b><u>Trace Metals, Total</u></b>					
Aluminum	79.0	0.6	µg/L	04-Aug-22	TEL035
Antimony	9.8	0.1	µg/L	04-Aug-22	TEL035
Arsenic	3.2	0.2	µg/L	04-Aug-22	TEL035
Barium	38.6	0.1	µg/L	04-Aug-22	TEL035
Beryllium	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Bismuth	< 0.2	0.2	µg/L	04-Aug-22	TEL035
Boron	62.7	0.9	µg/L	04-Aug-22	TEL035
Calcium	< 0.0	0.04	µg/L	04-Aug-22	TEL035

Report Date: August-10-22  
Print Date: August-10-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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**Taiga Environmental Laboratory**  
4001-52nd Ave., Box 1320, Yellowknife, NT, X1A 2L9  
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No:  
221536

## - CERTIFICATE OF ANALYSIS -

Client Sample ID:	Hazardous Waste Borm - Small		Taiga Sample ID: 003		
Cesium	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Chromium	0.3	0.1	µg/L	04-Aug-22	TEL035
Cobalt	0.5	0.1	µg/L	04-Aug-22	TEL035
Copper	4.9	0.2	µg/L	04-Aug-22	TEL035
Iron	517	5	µg/L	04-Aug-22	TEL035
Lead	2.2	0.1	µg/L	04-Aug-22	TEL035
Lithium	1.8	0.2	µg/L	04-Aug-22	TEL035
Manganese	39.8	0.1	µg/L	04-Aug-22	TEL035
Mercury	0.01	0.01	µg/L	04-Aug-22	TEL035
Molybdenum	2.0	0.1	µg/L	04-Aug-22	TEL035
Nickel	1.6	0.1	µg/L	04-Aug-22	TEL035
Rubidium	1.2	0.1	µg/L	04-Aug-22	TEL035
Selenium	< 0.3	0.3	µg/L	04-Aug-22	TEL035
Silver	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Strontium	37.2	0.1	µg/L	04-Aug-22	TEL035
Thallium	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Tin	< 0.1	0.1	µg/L	04-Aug-22	TEL035
Titanium	2.1	0.1	µg/L	04-Aug-22	TEL035
Uranium	0.3	0.1	µg/L	04-Aug-22	TEL035
Vanadium	0.5	0.1	µg/L	04-Aug-22	TEL035
Zinc	28.8	0.4	µg/L	04-Aug-22	TEL035

Report Date: August-10-22  
Print Date: August-10-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
221536

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: Hazardous Waste Berm - Small

Taiga Sample ID: 003

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## - DATA QUALIFIERS -

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### Data Qualifier Descriptions:

- |     |   |
|-----|---|
| 16  | Test requested but no sample bottle received  |
| 236 | Detection Limit Raised: Chromatographic Interference due to co-elution.   |
| 237 | Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria. |

\* 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

Report Date: August-10-22  
Print Date: August-10-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
221692

## - FINAL REPORT -

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**Prepared For:** Hamlet of Cambridge Bay

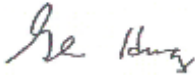
**Address:** P.O. Box 16  
Cambridge Bay, NU  
X0B 0C0

**Attn:** Wiz Mohammed

**Facsimile:** (867) 983-2186

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**Final report has been reviewed and approved by:**



**Glen Hudy**  
Quality Assurance Officer

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### 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:** August-26-22  
**Print Date:** August-26-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
**221692**

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-4**

Taiga Sample ID: **001**

Client Project:  
Sample Type: Sewage  
Received Date: 18-Aug-22  
Sampling Date: 17-Aug-22  
Sampling Time: 9:05  
  
Location: Cambridge Bay Sewage & Waste  
Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b><u>Cations by ICP-MS</u></b>						
Calcium	311	1.1	mg/L	22-Aug-22	TEL035	
Hardness	1290	7.7	mg/L	22-Aug-22	TEL035	
Magnesium	133	1.1	mg/L	22-Aug-22	TEL035	
Potassium	93.0	1.1	mg/L	22-Aug-22	TEL035	
Sodium	225	1.1	mg/L	22-Aug-22	TEL035	
<b><u>Inorganics - Nutrients</u></b>						
Ammonia as Nitrogen	6.23	0.005	mg/L	22-Aug-22	TEL068	
Biochemical Oxygen Demand	3	2	mg/L	18-Aug-22	TEL019	81
CBOD	5	2	mg/L	18-Aug-22	TEL019	81
Organic Carbon, Total	41.9	0.5	mg/L	23-Aug-22	TEL033	
<b><u>Inorganics - Physicals</u></b>						
Alkalinity, Total (as CaCO <sub>3</sub> )	268	0.4	mg/L	18-Aug-22	TEL060	
Conductivity, Specific (@25C)	3190	0.4	µS/cm	18-Aug-22	TEL059	
pH	7.90		pH units	18-Aug-22	TEL058	

ReportDate: August-26-22  
Print Date: August-26-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
**221692**

## - CERTIFICATE OF ANALYSIS -

Client Sample ID: **CAM-4**

Taiga Sample ID: **001**

Solids, Total Suspended	40	3	mg/L	19-Aug-22	TEL008
<b><u>Major Ions</u></b>					
Chloride	295	0.7	mg/L	19-Aug-22	TEL055
Nitrate+Nitrite as Nitrogen	< 0.01	0.01	mg/L	19-Aug-22	TEL055
Sulphate	1230	1	mg/L	19-Aug-22	TEL055
<b><u>Microbiology</u></b>					
Coliforms, Fecal	34	1	CFU/100mL	18-Aug-22	TEL017
<b><u>Organics</u></b>					
Oil and Grease, visible	Non-visible			18-Aug-22	Visual Exam
<b><u>Trace Metals, Total</u></b>					
Aluminum	24.8	0.6	µg/L	23-Aug-22	TEL035
Arsenic	1.2	0.2	µg/L	23-Aug-22	TEL035
Cadmium	< 0.0	0.04	µg/L	23-Aug-22	TEL035
Chromium	0.6	0.1	µg/L	23-Aug-22	TEL035
Cobalt	1.2	0.1	µg/L	23-Aug-22	TEL035
Copper	8.4	0.2	µg/L	23-Aug-22	TEL035
Iron	1090	5	µg/L	23-Aug-22	TEL035
Lead	1.4	0.1	µg/L	23-Aug-22	TEL035
Manganese	117	0.1	µg/L	23-Aug-22	TEL035
Mercury	0.01	0.01	µg/L	23-Aug-22	TEL035
Nickel	14.8	0.1	µg/L	23-Aug-22	TEL035
Zinc	13.4	0.4	µg/L	23-Aug-22	TEL035

ReportDate: August-26-22  
 Print Date: August-26-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
221692

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-5**

Taiga Sample ID: **002**

**Client Project:**

Sample Type: Sewage  
 Received Date: 18-Aug-22  
 Sampling Date: 17-Aug-22  
 Sampling Time: 9:20

Location: Cambridge Bay Sewage & Waste

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b><u>Cations by ICP-MS</u></b>						
Calcium	44.0	0.1	mg/L	22-Aug-22	TEL035	
Hardness	248	0.7	mg/L	22-Aug-22	TEL035	
Magnesium	34.3	0.1	mg/L	22-Aug-22	TEL035	
Potassium	19.5	0.1	mg/L	22-Aug-22	TEL035	
Sodium	93.7	0.1	mg/L	22-Aug-22	TEL035	
<b><u>Inorganics - Nutrients</u></b>						
Ammonia as Nitrogen	1.90	0.005	mg/L	22-Aug-22	TEL068	
Biochemical Oxygen Demand	28	2	mg/L	18-Aug-22	TEL019	
CBOD	20	2	mg/L	18-Aug-22	TEL019	
Organic Carbon, Total	50.6	0.5	mg/L	23-Aug-22	TEL033	
<b><u>Inorganics - Physicals</u></b>						
Alkalinity, Total (as CaCO <sub>3</sub> )	209	0.4	mg/L	18-Aug-22	TEL060	
Conductivity, Specific (@25C)	939	0.4	µS/cm	18-Aug-22	TEL059	
pH	8.64		pH units	18-Aug-22	TEL058	
Solids, Total Suspended	58	3	mg/L	19-Aug-22	TEL008	

**Major Ions**

ReportDate: August-26-22  
 Print Date: August-26-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
**221692**

## - CERTIFICATE OF ANALYSIS -

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**Client Sample ID: CAM-5**

**Taiga Sample ID: 002**

Chloride	145	0.7	mg/L	19-Aug-22	TEL055
Nitrate+Nitrite as Nitrogen	1.96	0.01	mg/L	19-Aug-22	TEL055
Sulphate	25	1	mg/L	19-Aug-22	TEL055
<b><u>Microbiology</u></b>					
Coliforms, Fecal	290	10	CFU/100mL	18-Aug-22	TEL017
<b><u>Organics</u></b>					
Oil and Grease, visible		Non-visible		18-Aug-22	Visual Exam
<b><u>Trace Metals, Total</u></b>					
Aluminum	59.9	0.6	µg/L	23-Aug-22	TEL035
Arsenic	1.7	0.2	µg/L	23-Aug-22	TEL035
Cadmium	< 0.0	0.04	µg/L	23-Aug-22	TEL035
Chromium	0.5	0.1	µg/L	23-Aug-22	TEL035
Cobalt	0.6	0.1	µg/L	23-Aug-22	TEL035
Copper	13.2	0.2	µg/L	23-Aug-22	TEL035
Iron	1350	5	µg/L	23-Aug-22	TEL035
Lead	0.7	0.1	µg/L	23-Aug-22	TEL035
Manganese	66.1	0.1	µg/L	23-Aug-22	TEL035
Mercury	0.01	0.01	µg/L	23-Aug-22	TEL035
Nickel	2.5	0.1	µg/L	23-Aug-22	TEL035
Zinc	12.2	0.4	µg/L	23-Aug-22	TEL035

ReportDate: August-26-22  
 Print Date: August-26-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
**221692**

## - CERTIFICATE OF ANALYSIS -

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Client Sample ID: **CAM-6**

Taiga Sample ID: **003**

Client Project:  
 Sample Type: Final Discharge  
 Received Date: 18-Aug-22  
 Sampling Date: 17-Aug-22  
 Sampling Time: 9:30  
 Location: Cambridge Bay Sewage & Waste  
 Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<b><u>Cations by ICP-MS</u></b>						
Calcium	44.3	0.1	mg/L	22-Aug-22	TEL035	
Hardness	249	0.7	mg/L	22-Aug-22	TEL035	
Magnesium	34.2	0.1	mg/L	22-Aug-22	TEL035	
Potassium	19.2	0.1	mg/L	22-Aug-22	TEL035	
Sodium	94.1	0.1	mg/L	22-Aug-22	TEL035	
<b><u>Inorganics - Nutrients</u></b>						
Ammonia as Nitrogen	1.51	0.005	mg/L	22-Aug-22	TEL068	
Biochemical Oxygen Demand	26	2	mg/L	18-Aug-22	TEL019	
CBOD	19	2	mg/L	18-Aug-22	TEL019	
Organic Carbon, Total	68.1	0.5	mg/L	23-Aug-22	TEL033	
<b><u>Inorganics - Physicals</u></b>						
Alkalinity, Total (as CaCO <sub>3</sub> )	210	0.4	mg/L	18-Aug-22	TEL060	
Conductivity, Specific (@25C)	943	0.4	µS/cm	18-Aug-22	TEL059	
pH	8.55		pH units	18-Aug-22	TEL058	
Solids, Total Suspended	54	3	mg/L	19-Aug-22	TEL008	

**Major Ions**

ReportDate: August-26-22  
 Print Date: August-26-22

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# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY

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

Taiga Batch No.:  
**221692**

## - CERTIFICATE OF ANALYSIS -

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**Client Sample ID: CAM-6**

**Taiga Sample ID: 003**

Chloride	144	0.7	mg/L	19-Aug-22	TEL055
Nitrate+Nitrite as Nitrogen	1.91	0.01	mg/L	19-Aug-22	TEL055
Sulphate	24	1	mg/L	19-Aug-22	TEL055

**Microbiology**

Coliforms, Fecal	590	10	CFU/100mL	18-Aug-22	TEL017
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**Organics**

Oil and Grease, visible	Non-visible			18-Aug-22	Visual Exam
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**Trace Metals, Total**

Aluminum	52.5	0.6	µg/L	23-Aug-22	TEL035
Arsenic	1.8	0.2	µg/L	23-Aug-22	TEL035
Cadmium	< 0.0	0.04	µg/L	23-Aug-22	TEL035
Chromium	0.4	0.1	µg/L	23-Aug-22	TEL035
Cobalt	0.6	0.1	µg/L	23-Aug-22	TEL035
Copper	12.4	0.2	µg/L	23-Aug-22	TEL035
Iron	1310	5	µg/L	23-Aug-22	TEL035
Lead	0.8	0.1	µg/L	23-Aug-22	TEL035
Manganese	61.8	0.1	µg/L	23-Aug-22	TEL035
Mercury	0.01	0.01	µg/L	23-Aug-22	TEL035
Nickel	2.6	0.1	µg/L	23-Aug-22	TEL035
Zinc	11.6	0.4	µg/L	23-Aug-22	TEL035

ReportDate: August-26-22  
 Print Date: August-26-22

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

**Taiga Batch No.:**  
**221692**

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## - CERTIFICATE OF ANALYSIS -

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**Client Sample ID: CAM-6**

**Taiga Sample ID: 003**

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## - DATA QUALIFIERS -

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*Data Qualifier Descriptions:*

**81** *Results are inconclusive due to insufficient depletion of sample, minimum 2 mg/L required over 5 days.*

**\* 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:** August-26-22  
**Print Date:** August-26-22

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**Appendix C: Hazardous Materials Spill Database, Cambridge Bay 2022**

**No spills occurred in 2022 that were associated with licenced infrastructure.**

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FOR THE MUNICIPALITY OF CAMBRIDGE BAY**

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Appendix D: Cambridge Bay 2022 Sampling Summary

Parameter	Unit	CAM-4			CAM-5		
		June 30	July 28	August 17	June 30	July 28	August 17
CBOD	mg/L	-	3	5	-	10	20
TSS	mg/L	8	10	40	48	36	58
Fecal Coliforms	CFU/100ml	-	60	34	-	20	290
pH	pH	7.91	7.98	7.90	10.1	9.71	8.64
Conductivity	µS/cm	1550	2550	3190	627	906	939
Nitrate-Nitrite	mg/L						
Oil and Grease	Visible	Non-Visible	Non-Visible	Non-Visible	Non-Visible	Non-Visible	Non-Visible
Magnesium	mg/L	53.5	96.5	133	25.0	39.3	34.3
Calcium	mg/L	149	252	311	31.7	43.0	44.0
Sodium	mg/L	89.1	160	225	58.7	92.0	93.7
Potassium	mg/L	39.7	69.7	93.0	10.9	16.7	19.5
Chloride	mg/L	114	217	295	98.1	150	145
Sulphate	mg/L	521	972	1230	32.0	67	25
Total Hardness	mg/L	592	1030	1290	182	269	248
Total Alkalinity	mg/L	138	257	268	144	189	209
Ammonia Nitrogen	mg/L	1040	5.95	6.23	0.5480	0.166	1.90
Total Cadmium	µg/L	<0.1	<0.0	<0.0	<0.1	<0.0	<0.0
Total Cobalt	µg/L	1.4	1.2	1.2	0.4	0.7	0.6
Total Chromium	µg/L	0.5	0.5	0.6	0.4	0.3	0.5
Total Copper	µg/L	21.3	7.8	8.4	4.9	5.1	13.2
Total Aluminum	µg/L	27.0	27.1	24.8	51.1	49.2	59.9
Total Mercury	µg/L	0.01	0.01	0.01	<0.01	0.01	0.01
Total Zinc	µg/L	23.6	11.8	13.4	17.4	6.8	12.2
Total Iron	µg/L	1900	1240	1090	342	437	1350
Total Manganese	µg/L	46.5	92.3	117	54.7	30.6	66.1
Total Nickel	µg/L	12.7	13.1	14.8	2.0	3.9	2.5
Total Lead	µg/L	1.4	1.2	1.4	1.1	1.1	0.7
Total Arsenic	µg/L	1.4	1.5	1.2	1.6	2.9	1.7
Total Organic Carbon	mg/L	34.2	35.6	41.9	50.0	35.3	41.9

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Parameter	Unit	CAM-6		
		June 30	July 28	August 17
CBOD	mg/L	-	4	19
TSS	mg/L	20	6	54
Fecal Coliforms	CFU/100ml	-	<10	590
pH	pH	9.61	7.84	8.55
Conductivity	µS/cm	513	978	943
Nitrate-Nitrite	mg/L			
Oil and Grease	Visible	Non-Visible	Non-Visible	Non-Visible
Magnesium	mg/L	20.1	39.9	34.2
Calcium	mg/L	32.7	59.2	44.3
Sodium	mg/L	48.9	81.0	94.1
Potassium	mg/L	9.1	15.6	19.2
Chloride	mg/L	74.5	132	144
Sulphate	mg/L	26.5	59	24
Total Hardness	mg/L	164	312	249
Total Alkalinity	mg/L	122	240	210
Ammonia Nitrogen	mg/L	0.8900	0.314	1.51
Total Cadmium	µg/L	<0.1	<0.0	<0.0
Total Cobalt	µg/L	0.5	0.7	0.6
Total Chromium	µg/L	0.3	0.3	0.4
Total Copper	µg/L	3.8	2.1	12.4
Total Aluminum	µg/L	42.3	18.1	52.5
Total Mercury	µg/L	<0.01	<0.01	0.01
Total Zinc	µg/L	32.8	5.2	11.6
Total Iron	µg/L	527	1230	1310
Total Manganese	µg/L	57.8	173	61.8
Total Nickel	µg/L	2.0	4.3	2.6
Total Lead	µg/L	1.3	0.6	0.8
Total Arsenic	µg/L	2.0	2.5	1.8
Total Organic Carbon	mg/L	37.4	31.9	68.1

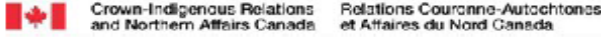
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## Appendix E: CIRNAC Inspection Report

The CIRNAC Municipal Inspection took place June 30 2022. In attendance was CIRNAC Inspector Jonathan Mesher, Municipal Engineer Elan Chalmers, Municipal Technical Officer Madeline Cole, and Hamlet Employee Rick Webster.

# ANNUAL REPORT FOR THE MUNICIPALITY OF CAMBRIDGE BAY



## WATER LICENCE INSPECTION FORM

Original  
 Follow-Up Report

Licensee <b>Hamlet of Cambridge Bay</b>	Licensee Representative <b>NA</b>
License No. / Expiry <b>3BM-CAM2030</b>	Representative's Title <b>NA</b>
Land / Other Authorizations ---	Land / Other Authorizations ---
Date of Inspection <b>June 30, 2022</b>	Inspector <b>Jonathan MESHER</b>
Activities Inspected	
<input type="checkbox"/> Camp <input type="checkbox"/> Drilling <input type="checkbox"/> Mining <input type="checkbox"/> Construction <input type="checkbox"/> Reclamation <input type="checkbox"/> Fuel Storage <input type="checkbox"/> Roads/Hauling <input type="checkbox"/> Other:	

Conditions:		A - Acceptable	C - Concern	U - Unacceptable	NA - Not Applicable	NI - Not Inspected
<b>Water Use</b>	Condition		Comment	Condition	Comment	Condition
Intake/Screen	NA			Water Management Structures	NA	Storage
Flow Measure. Device	NA			Culverts / Bridges	NA	Spills
Source:	NA			Drainage	NA	Spill Plan
Water Use:	NA			Erosion / Sediment	NA	
Recirculation ( y/n)	NA			Mitigation Measures	A	<b>Administrative</b>
				Reclamation Activities	NA	Records
				Materials Storage	NA	Reports
<b>Waste Disposal</b>				Signage		Plans
Waste Water	C					Notifications
Solid Waste	C			<b>Monitoring</b>		<b>Other</b>
Hazardous Waste	U			Sample Collection / Analysis	A	Follow-up from previous inspection
*The number in the comments field will correspond with specific comments provided below.						
Samples taken by Inspector:			Location(s):			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						

SECTION 1	<input checked="" type="checkbox"/> Comments	<input type="checkbox"/> Non-Compliance with Act or Licence	<input type="checkbox"/> Action Required
<b>Background:</b>			
<p>On June 30, 2022, I Jonathan Mesher conducted an inspection of the Waste storage facilities to ensure compliance with the terms and conditions of the Water licence 3BM-CAM2030. During the 2022 inspection all concerns noted in the September 2021 were still identified as a concern the following is the concerns noted in 2021 and 2022.</p> <p><b>1. Metal waste area.</b></p> <p>a) During the inspection there was various batteries stored inside wooden boxes and a sea can, there was also batteries scattered around the storage area outside of containment. PART D, item 11 of the licence 3BM-CAM2030 states; "The Licensee shall segregate and store all hazardous materials and/or hazardous Waste within the Solid Waste Disposal Facility in such a manner as to prevent the deposit of deleterious substances into any Water, until such a time that the materials have been removed for proper disposal at an approved facility." see photo 1 for the battery storage.</p> <p>b) During the inspection the Hazardous material containment cells appeared to be retaining water and it appeared that there was significant room in this containment. See photos 2 and 3 for the hazardous material berm.</p> <p>c) The inspector noted significant hazardous material outside on containment within the metal dump. See photos 4, 5 and 6 for the waste mentioned.</p> <p><b>2. Landfill.</b></p> <p>a) During the inspection there was signs of erosion near the landfill gate, the slope of the area indicates the water causing the erosion is originating from within the landfill. PART D item 2 of the licence 3BM-CAM2030 states; "The Licensee shall direct Effluent from the Solid Waste Disposal Facility to the Retention Sewage Lagoon as required." See photo 7 for the erosion noted.</p> <p>b) The inspector noted various types of non-burnable waste within the landfill such as; Styrofoam and plastics. PART D, item 9 states "The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood to prevent the deposition of waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding waters,</p>			



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 Crown-Indigenous Relations and Northern Affairs Canada / Relations Couronne-Autochtones et Affaires du Nord Canada

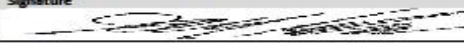
unless otherwise approved by the Board in writing.”

3. 2022 concern;  
a) While inspecting the metal waste dump the inspector noted a oil spill, the spill has since been remediated. See photo 9 for the oil spill noted.

**Section 2**     Comments     Non-Compliance with Act or Licence     Action Required

The licensee is to develop a plan by January 15, 2023 to ensure the following concerns are addressed, this plan shall include a timeline for implementation.


- 1) The licensee is to ensure all Hazardous waste is segregated and stored in a way to prevent waste from entering water, the inspector recommends storing all hazardous waste at the metal waste area within the berms on site.
- 2) The licensee is to provide a plan to sort, package and ship hazardous materials to an approved waste management facility due to inability to store the excess of hazardous materials.
- 3) The licensee is to ensure all effluent from the landfill is captured in the retention sewage lagoon as required in the licence.

<b>Inspector's Name</b> Jonathan MESHER	
<b>Signature</b> 	
<b>Date</b> September 27, 2022	

Water Resource Officer, Nunavut Region  
Crown Indigenous Relations and Northern Affairs Canada – CIRNAC  
Jonathan.mesher@canada.ca  
Office #: 867-222-0118  
Fax: 867 979-6445

Date	Camera	Inspector	Authorization
June 20, 2022	Sony Cyber-shot	J.Mesher	3BM-CAM
<b>Photo Log</b>			
Photo 1			
			
Description: batteries outside of containment			

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 Crown-Indigenous Relations and Northern Affairs Canada / Relations Couronne-Autochtones et Affaires du Nord Canada

Date	Camera	Inspector	Authorization
June 20, 2022	Sony Cyber-shot	J.Mesher	3BM-CAM

**Photo Log**

**Photo 2**



Description: containment cell with space for waste

Date	Camera	Inspector	Authorization
June 20, 2022	Sony Cyber-shot	J.Mesher	3BM-CAM

**Photo Log**

**Photo 3**



Description: second cell with room for Hazardous material containment

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**Crown-Indigenous Relations and Northern Affairs Canada** / **Relations Couronne-Autochtones et Affaires du Nord Canada**

Date	Camera	Inspector	Authorization
June 20, 2022	Sony Cyber-shot	J.Mesher	3BM-CAM

**Photo Log**

**Photo 4**



Description: various wastes outside of containment

Date	Camera	Inspector	Authorization
June 20, 2022	Sony Cyber-shot	J.Mesher	3BM-CAM

**Photo Log**

**Photo 5**



Description: barrels outside of containment



2022-KIT-JM007

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