Indian and Northern Affairs Canada
www.inac.gc.ca

Affaires indiennes et du Nord Canada
www.ainc.gc.ca

Nunavut District Office
P.O. Box 100
Iqaluit, NU
X0A 0H0

Tel.: (867) 975-4298
Fax.:(867) 979-6445

NWB3CAM

INTERNAL	
PC	JP
LA	
OM	
TA	
BS	
ST	Copy
ED	
CEO	
BRD	
EXT.	

November 29, 2002

NWB3-CAM0207

Elwood Johnson
Senior Administrative Officer (SAO)
Hamlet of Cambridge Bay
P.O. Box 16
Cambridge Bay, NU X0B 0C0

RE: August 21, 2002 Municipal Water Use Inspection - Report

The Water Resources Officer (WRO), appreciates the assistance provided during the tour of the Hamlet's water use and waste disposal facilities. Enclosed for your records is a copy of the Municipal Water Use Inspection Report, performed on August 21, 2002. 2002. As of September 1, 2002 the Municipality of Cambridge Bay has held a Water Licence as required under *Nunavut Land Claims Agreement, Nunavut Waters and Nunavut Surface Rights Tribunal Act*. During the inspection the following observations were noted.

☐ **Water Supply:** The Water Intake Facility located on Water Lake is operating properly although it appeared rather cluttered and unclean (Photo 1 & 2). The generator room was very hot during the inspection this may be due to poor ventilation. The soil around the fuel oil over flow drums, located on the exterior of the Water Lake Intake Facility is stained with spilled fuel. It is recommenced that the contaminated soil be removed to the Land Farm. It is recommended that spill equipment be made available at the Water Intake Facility. The Water Treatment Plant/ Resiviour located in town is clean. Enclosed chemical analysis of Water Lake at (SNP) CAM-1 indicate that Nitrate + Nitrite (<0.008 mg/L vs 3.2 mg/L), Colour (10 TCU vs 15 TCU) and pH (7.91 vs 6.5-8.5) are within the *Municipal Wastewater Effluent Quality Guidelines.*

☐ **Sewage Disposal:** The Sewage Lagoon has sufficient freeboard (Photo 4). The Sewage Truck Discharge structure worked well at reducing erosion during truck discharges at the Sewage Lagoon. Sewage lagoon effluent enters a wetland that flows around the Solid Waste Disposal Facility. The effluent then flows through the toe of the Bulky Metal Waste Dump prior to entering the ocean (Photo 5).

Enclosed analysis of sewage effluent taken at (SNP) CAM-3 indicate that Total Suspended Solids (52 mg/L vs 100 mg/L), pH (8.43 vs 6.5 - 9.0) and Oil and Grease (5.3 mg/L vs 100 mg/L) are within the *Municipal Wastewater Effluent Quality Guidelines.*

☐ **Solid Waste Disposal**: The tipping face at the dump is kept to a minimum . The Solid Waste Disposal Facility is not fenced, yet little wind blown refuse is located around the facility. Burning and burial of refuse appeared to be commonly practiced at the dump (Photo 7). No leachate effluent was seen omitting from the toe of the Solid Waste Disposal Facility.

☐ **Bulky Metal Waste Disposal Site:** The Bulky Metal Dump has effluent from the Sewage Lagoon flowing through the area (Photo 5). There was little segregation of wastes at the metal dump with bulky metal and construction waste mixed (Photo 8). The only noted segregation of waste was that of waste oil, that was placed on pallets. No waste battery storage area was observed. Some form of spill protection should be provided to assist in reducing contamination from spilled oil and battery acid (Photo 6).

☐ **Non-Compliance of Act or Licence**: Failure to provide 1997, 1998, 1999 & 2000 Annual Reports. The Operational & Maintenance plan for the municipal waste disposal facilities has yet to be submitted.

If there are any concerns or questions in regards to this inspection please contact me at (867) 975 4298 or bodykevichc@inac.gc.ca

Sincerely,

Constantine Bodykevich
Water Resources Officer (WRO)
INAC, Nunavut District

cc. -Nunavut Water Board, Gjoa Haven (Jim Wall)
-CG&T, Rankin Inlet (Don Forsyth)
- Keewatin Health & Social Services, Rankin Inlet (Robert Phillips)
- EC Environmental Protection, Yellowknife (Anne Wilson)
- INAC Water Management, Iqaluit (Michelle Mc Christie)

MUNICIPAL WATER USE INSPECTION REPORT

Date: August 21, 2002 **Licensee Rep. (Name/Title):** Elwood Johnson/ SAO

Licensee: Hamlet of Cambridge Bay **Licence No.: NWB3-CAM0207**

WATER SUPPLY

Source(s): Water Lake/Reservoir **Quantity used:** 225213

Owner:/Operator: Hamlet of Cambridge Bay

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Intake Facilities: A **Storage Structure:** A **Treatment Systems:** A **Chemical Storage:** A

Flow Meas. Device: A **Conveyance Lines:** NA **Pumping Stations:** A

Comments: Water Supply Facilities located on Water Lake although in good operational condition was unclean. Intake Facility fuel oil over flow containment drums show signs of spillage. Maintenance required to correct condition of Intake Facility generator room excessive heat. Chlorination system functioning at Water Intake Facility.

WASTE DISPOSAL

Sewage: **Sewage Treatment System** (Prim./Sec/Ter.): Secondary; discharge in wetland to ocean.

Natural Water Body: X **Continuous Discharge** (land or water): water

Seasonal Discharge: X **Wetlands Treatment:** considerable **Trench:**

Solid Waste: **Owner/Operator:** Hamlet of Cambridge Bay

Landfill: **Burn & Landfill:** X **Other:**

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Discharge Quality: Sampled **Decant Structure:** NA **Erosion:** A

Discharge Meas. Device: NIL **Dyke Inspection:** NA **Seepages:** A

Dams, Dykes: NA **Freeboard:** NA **Spills:** NIL

Construction: NA **O&M Plan:** U **A&R Plan:** U

Periods of Discharge: A **Effluent Discharge Rate:** Not Measured

Comments: Sewage Lagoon effluent passes through a wetland that flows through the bulky metal disposal area prior to discharging to the ocean. Some concern with effluent flowing through the metal dump. Soil Waste Disposal Facility well kept despite no fencing. No effluent seepage was observed emitting from the Solid Waste Disposal Facility. Waste at the at bulky metal dump not well segregated.

FUEL STORAGE

Owner/Operator:

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Berms & Liners: NI **Water within Berms:** NI **Evidence of Leaks:** NI

Drainage Pipes: NI **Pump Station & Catchment Berm:** NI

Pipeline Condition: NI **Not Applicable:** NI **Condition of Tanks:** NI

SURVEILLANCE NETWORK PROGRAM (SNP)

Samples Collected **Hamlet:** NIL

INAC: CAM-1 potable water, (CAM-2 & CAM-3) sewage lagoon dump seepage

Signs Posted **SNP:** NIL **Warning:** NIL

Records & Reporting: No Annual Report for 1997, 1998, 1999 & 2000 or Operational & Management plan.

Geotechnical Inspection: Not Applicable

Non-Compliance of Act or Licence: At the time of inspection the Hamlet of Cambridge Bay Water Licence N4L3-1532 had expired. Annual Reports and Operational & Maintenance plan for waste disposal facilities still outstanding.

Constantine Bodykevich
Inspector's Name

Inspector's Signature

Global Positioning System Coordinates for Municipality of Cambridge Bay

Cambridge Bay-01	
Cambridge Bay Pot Water-01	N69.08182 W105.03508
Cambridge Bay-02	
Cambridge Bay Metal Dump-02	N69.07253 W105.01243
Cambridge Bay-03	
Cambridge Bay Sewage Lagoon-03	N69.07371 W105.01578
Cambridge Bay-04	
Cambridge Bay Sewage Sample-04	N69.07249 W105.01386

Cambridge Bay Inspection Pictures 2002

Photo # 1 Water Intake Facility at Water Lake.

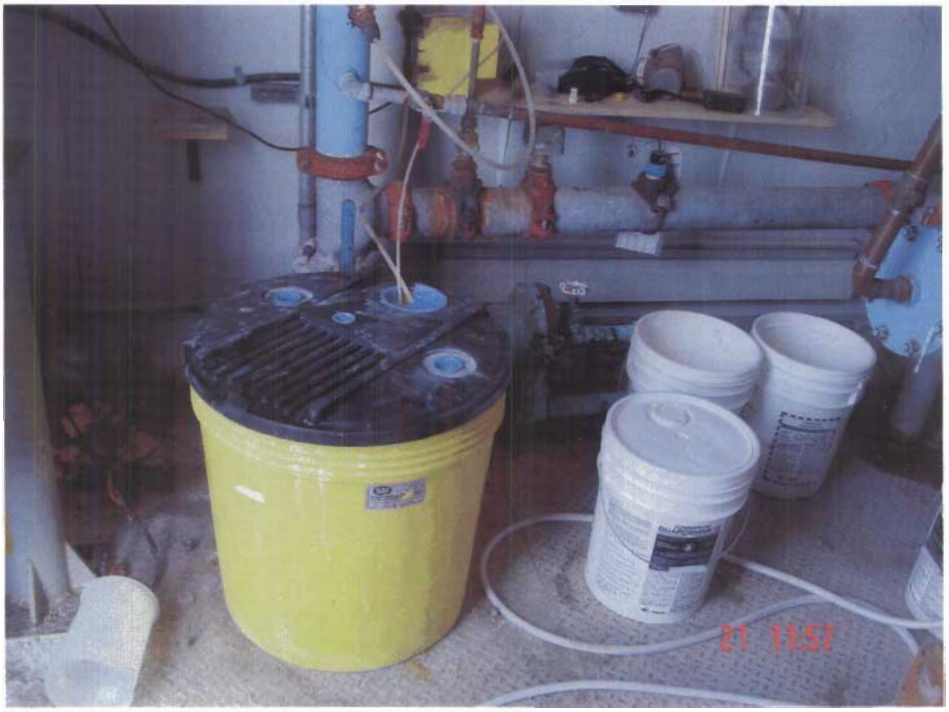


Photo # 2 Chlorination system at Water Intake Facility.

Photo # 3 Over flow for fuel oil at Water Intake Facility, staining of fuel noted around drums.

Photo # 4 Truck at sewage truck discharge structure component of Sewage Lagoon.

Photo # 5 Bulky metal waste containment area. Note that there is sewage effluent flowing through bulky metal materials.

Photo # 6 Waste oil drums at bulky metal dump.

Photo # 7 Tipping face at Solid Waste Disposal Facility. Note burning of refuse occurs on a frequent basis reducing wind blown refuge despite lack of fencing.

Photo # 8 Bulky metal waste with hazardous materials not segregated.

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788
Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office

Attn: Constantine Bodykevi

Sample ID: Camp. Bay CAM-1

Taiga Sample ID: 222513

Client Project:

Sample Type: potable

Received Date: 26-Aug-02

Location:

Sampling Date: 02-Aug-19

Report Status: Final

Approved by:

Test Parameter	Result	Units	Detection Limit	Analysis Date	Data Qualifier
Physicals					
Alkalinity	94.6	mg/L	0.3	16-Sep-02	
Colour	10		5	16-Sep-02	
Conductivity, Specific	276	µS/cm	0.3	16-Sep-02	
pH	7.91	pH units	0.05	16-Sep-02	
Solids, Total Dissolved	202	mg/L	10	14-Sep-02	
Solids, Total Suspended	4	mg/L	3	14-Sep-02	
Turbidity		NTU		17-Sep-02	14
Nutrients					
Ammonia as N	0.006	mg/L	0.005	02-Sep-02	
Nitrate+Nitrite as N	< 0.008	mg/L	0.008	05-Sep-02	
Organic Carbon, Total	4.6	mg/L	0.5	07-Oct-02	
Phosphorous, Dissolved	0.056	mg/L	0.004	04-Sep-02	
Phosphorous, Total	0.065	mg/L	0.004	04-Sep-02	
Major Ions					
Calcium	19.2	mg/L	0.05	29-Aug-02	

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788
Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office **Attn:** Constantine Bodykevi

Sample ID: Camp. Bay : CAM-1 **Taiga Sample ID: 222513**

Chloride	26.7	mg/L	0.2	06-Sep-02
Hardness as CaCO3	109	mg/L	0.17	29-Aug-02
Magnesium	14.9	mg/L	0.02	29-Aug-02
Silica, Reactive	0.17	mg/L	0.02	12-Sep-02

Data Qualifier Descriptions:

14 Insufficient sample to perform analysis

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788
Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: camp bay sewage CAM-3 **Taiga Sample ID:** 222514

Client Project: Sample Type: sewage Received Date: 26-Aug-02

Location: Sampling Date: 19-Aug-02

Report Status: Preliminary *Approved by:* _____

Test Parameter	Result	Units	Detection Limit	Analysis Date	Data Qualifier
Physicals					
Alkalinity	249	mg/L	0.3	16-Sep-02	
Colour	300		5	16-Sep-02	
Conductivity, Specific	808	µS/cm	0.3	16-Sep-02	
pH	8.43	pH units	0.05	16-Sep-02	
Solids, Total Dissolved	536	mg/L	10	14-Sep-02	
Solids, Total Suspended	52	mg/L	3	14-Sep-02	
Turbidity	22.1	NTU	0.1	17-Sep-02	
Nutrients					
Ammonia as N	0.652	mg/L	0.005	02-Sep-02	
Nitrate+Nitrite as N	0.035	mg/L	0.008	05-Sep-02	
Organic Carbon, Total	21	mg/L	0.5	07-Oct-02	
Phosphorous, Dissolved	1.17	mg/L	0.004	04-Sep-02	
Phosphorous, Total	1.94	mg/L	0.004	04-Sep-02	
Major Ions					
Calcium	32.7	mg/L	0.05	29-Aug-02	

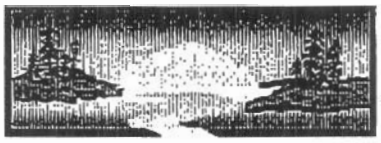
Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788
Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: camp bay sewage CAM-3 **Taiga Sample ID:** 222514

	Chloride	114	mg/L	0.2	06-Sep-02
	Hardness as CaCO3	214	mg/L	0.17	29-Aug-02
	Magnesium	32.2	mg/L	0.02	29-Aug-02
	Silica, Reactive	8.50	mg/L	0.02	12-Sep-02
Organic					
	Oil and Grease	5.3	mg/L	0.2	29-Aug-02
Metals, Total					
	Aluminum	192	µg/L	30	30-Aug-02
	Antimony	1.7	µg/L	0.5	30-Aug-02
	Arsenic	1.8	µg/L	1.0	24-Oct-02
	Barium	56	µg/L	1	30-Aug-02
	Beryllium	<2	µg/L	2	30-Aug-02
	Cadmium	<0.3	µg/L	0.3	30-Aug-02
	Cesium	<0.4	µg/L	0.4	30-Aug-02
	Chromium	<3	µg/L	3	30-Aug-02
	Cobalt	<1	µg/L	1	30-Aug-02
	Copper	6	µg/L	2	30-Aug-02
	Iron	1000	µg/L	30	25-Oct-02
	Lead	3	µg/L	1	30-Aug-02
	Lithium	8	µg/L	3	30-Aug-02
	Manganese	39	µg/L	1	30-Aug-02
	Molybdenum	2	µg/L	1	30-Aug-02
	Nickel	3	µg/L	1	30-Aug-02



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788
Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND Nunavut District Office *Attn:* Constantine Bodykevi

Sample ID: camp bay sewage CAM-3 **Taiga Sample ID:** 222514

Rubidium	9.3	µg/L	0.5	30-Aug-02
Selenium	<10	µg/L	10	30-Aug-02
Silver	<0.3	µg/L	0.3	30-Aug-02
Strontium	63	µg/L	1	30-Aug-02
Thallium	<0.4	µg/L	0.4	30-Aug-02
Titanium	7	µg/L	3	30-Aug-02
Uranium	0.4	µg/L	0.3	30-Aug-02
Vanadium	<1	µg/L	1	30-Aug-02
Zinc	13	µg/L	10	30-Aug-02

Data Qualifier Descriptions: