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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

**Water Licence Application
Supplementary Questionnaire
For Municipalities**

I. GENERAL

1. Date: AUGUST 31, 2007
2. Applicant: HAMLET OF CAMBRIDGE BAY
Municipality and Region
3. Contacts: DERRICK ANDERSON
Name of Contact
ACTING SENIOR ADMINISTRATIVE OFFICER
Position
1 857 983 2337 1 857 983 2193
Telephone # Fax # Email
4. Community Status: ☒ Village ☐ Town ☐ City
☒ Hamlet ☐ Settlement Corporation
5. Indicate the status of the municipality's license on the date of the application.
☒ New Application
☒ Renewal Water License # NWB3CAM0207

II. ATTACHMENTS

1. Attach current or up-to-date detailed map(s) showing the locations of the:
- ☒ a. Raw water intake;
 - ☒ b. Water storage and treatment facilities;
 - ☒ c. Fuel and chemical storage;
 - ☒ d. Sewage treatment facilities (lagoon, honey bag pit, wetland);
 - ☒ e. Wastewater treatment area and discharge outlets;
 - ☒ f. Solid waste disposal areas and drainage patterns;
 - ☒ g. Hazardous waste disposal area;
 - ☒ h. Transportation access routes;
 - ☒ i. Existing water bodies/courses and any changes to these water bodies/courses that have or may occur as a result of water use or waste disposal facilities, locations of environmental monitoring sites. (Outline drainage basin);
 - ☐ j. Traditional use areas outlined on site map and areas around the community used for recreation, camping, fishing, etc.
 - ☒ k. Abandoned and/or restored water treatment, sewage, and solid waste disposal facilities.

Are maps attached? ☒ Yes ☐ No

If no, please indicate when they will be available.

SEE REPORT ENTITLED
HAMLET OF CAMBRIDGE BAY
BACKGROUND REPORT FOR
WATER LICENCE RENEWAL
AUGUST 2007

Indicate which organization has provided the various maps or diagrams.

III. WATER SUPPLY

Water Source

1. Type of source: ☒ Lake ☐ River ☐ Well ☐ Other _____
2. Name of water source and alternative, if any.
WATER SUPPLY LAKE NONE
Primary Source Secondary Source
3. Usual break-up & freeze-up periods: JUNE OCTOBER
Break-up Freeze-up

Water Intake

1. Please provide short descriptions for the following:
 - a. Freshwater intake facility
SEE BACKGROUND REPORT 3.1
 - b. Operating capacity of pump used
SEE BACKGROUND REPORT 3.1
 - c. Intake screen size
SEE BACKGROUND REPORT 3.1

Water Storage

1. Type of water storage facility. (Check where applicable)
☐ Reservoir/Pond ☒ Storage tank ☐ none
☐ Other _____ Description: _____
2. If "reservoir" checked:
Is the reservoir lined? ☒ Yes ☐ No
What type of liner? _____ When was it installed? _____

Water Treatment

1. Indicate the quality of the water.

Summer: ☒ good ☐ fair ☐ poor
 Fall: ☒ good ☐ fair ☐ poor
 Winter: ☒ good ☐ fair ☐ poor
 Spring: ☒ good ☐ fair ☐ poor

2. Describe.

SEE BACKGROUND REPORT 3.1

3. Type of water treatment.

☐ Filtration and chlorination
☒ Chlorination only
☐ None
☐ Other _____
 Description

Water Use And Distribution

1. Volume of water use:

Distribution	Estimated number of people on the system A	Estimated average water consumption (Liters/capita/day) B	Total water consumption (Day/day) A x B
PIPED	—	—	—
TRUCKED	1500	160	240 MJ/DAY
TOTAL			

General Condition of the water supply facilities

1. General condition of the:

- a. Water supply facility
☒ satisfactory ☐ Unsatisfactory

If unsatisfactory, explain.

- b. Storage facility
☒ satisfactory ___ Unsatisfactory

If unsatisfactory, explain.

- c. Distribution system
☒ satisfactory ___ Unsatisfactory

If unsatisfactory, explain.

Modifications

1. Are there any changes *planned* for the water supply system?
☒ No ___ Yes

If yes, please attach a copy of the plan, or describe changes. Provide information on the implementation schedule.

2. Does the community believe changes needed to the water supply, storage or treatment facilities?
Describe. NO

Identification

Are there signs identifying drinking water sources presently used by the municipality?
☒ Yes ___ No

IV. SEWAGE DISPOSAL

1. What type(s) of sewage treatment does the community have?

- ☒ Lagoon
___ Mechanical system
___ Wetland
___ Honey bag
___ Combination/Other: Describe:

SEE BACKGROUND
REPORT 3.2

Lagoon (if applicable)

1. Has there been any operating problems with the lagoon? ☒ Yes ___ No
If yes, describe

SEE BACKGROUND REPORT 5.0

Mechanical System (if applicable)

1. Describe (type, specifications, operation and maintenance program for the mechanical wastewater treatment system).
2. Are sludge's produced ? ☐ Yes ☒ No
If yes, describe how the sludge's are disposed of:

Wetland (if applicable)

1. Describe the Wetland wastewater treatment system.

SEE BACKGROUND REPORT 6.0
PLANNED WETLAND

Honey Bag Pit

1. Does the municipality use a honey bag pit?
☐ Yes ☒ No
If yes, describe the location, drainage, and operation/maintenance of the site:

Commercial, Industrial and/or Hazardous Wastes

1. Are there any sources of commercial or industrial liquid waste being discharged or deposited to the wastewater treatment system that may affect the quality of the effluent or leachate produced? (The municipality should be aware that any commercial or industrial discharge has to be approved by the municipality)
☐ Yes ☒ No
If yes, indicate sources, types and quantities.

Sewage Discharge

1. Are fish, shellfish and other wildlife harvested in or near the discharge area?
☐ Yes ☒ No
If yes, indicate species harvested, and level of harvest.

General Condition of the sewage treatment facilities

1. General condition of the:
 - a. Sewage collection system ☐ Satisfactory ☒ Unsatisfactory
If unsatisfactory, explain

SEE BACKGROUND REPORT 6.0

- b. Discharge control system ☐ Satisfactory ☒ Unsatisfactory
If unsatisfactory, explain.

- c. Dams, diversion dykes, berms ☐ Satisfactory ☐ Unsatisfactory

N/A

If unsatisfactory, explain.

SEE BACKGROUND REPORT, 6.0
PLANNED BERMS

Modifications

1. Are there any changes *planned* in the sewage treatment facilities? ☐ No ☒ Yes
If yes, please attach a copy of the plan, or describe changes. Provide information on the implementation schedule. SEE BACKGROUND REPORT 6.0
2. Does the municipality or residents believe changes are needed to the sewage treatment facilities?
If yes Describe. YES SEE BACKGROUND REPORT 6.0

Abandonment and Restoration

1. List and describe abandoned or restored sewage treatment facilities.
Refer to original attachment maps.

NONE

Identification

Are there signs identifying past and present sewage disposal sites? ☒ Yes ☐ No

V. SOLID WASTE DISPOSAL

1. Briefly describe how solid wastes are collected and delivered to the disposal area.

SEE BACKGROUND REPORT 3.3

2. Is the solid waste site fenced? ☐ Yes ☒ No

3. Is the fence adequate? ☐ Yes ☐ No
If no, describe:

Waste Reduction

1. Does the municipality burn garbage?
☒ Yes ☐ No
If yes, describe how and when this is done.

BURNED PERIODICALLY

2. Has the municipality considered measures for waste reduction such as recycling or reuse?

☒ Yes ☐ No
If yes, describe

SEE BACKGROUND REPORT 4.5

Animal Carcasses Pit

1. Does the municipality have an area for the disposal of animal carcasses?

☐ Yes ☒ No
If yes, describe the location, drainage and operation/maintenance of the site

PART OF PLANNED IMPROVEMENTS

Waste Oil Pit

1. Describe the waste oil storage area.

NONE - PROPOSED AREA

Bulky Scrap Metal Waste Disposal Area

1. Does the municipality have a scrap metal or bulky waste disposal area?

☒ Yes ☐ No
If yes, briefly describe its location and operation plan.

SEE BACKGROUND REPORT
6.2

Commercial, Industrial and/or Hazardous Wastes Disposal Area

1. Are there any commercial or industrial waste being discharged or deposited in the solid waste disposal area? (The municipality should be aware that any discharge of commercial or industrial waste has to be approved by the municipality)

☒ Yes ☐ No
If yes, please indicate sources, types and quantity.

NOT AVAILABLE.

2. Will the municipality use a hazardous waste disposal area?

☒ Yes ☐ No
If yes, describe its:

PART OF PLANNED
IMPROVEMENTS

a. Location

b. Structure

c. Operation and maintenance (describe special handling/disposal methods for these wastes)

General Condition of the Solid Waste Disposal Area

1. Comment on the general conditions of the:

a. Solid waste disposal area

☐ Satisfactory ☒ Unsatisfactory
If unsatisfactory, explain.

SEE BACKGROUND REPORT 5.0

Modifications

1. Are there any changes planned for the solid waste disposal area?

☐ No ☒ Yes

If yes, attach a copy of the plan, or describe changes. Provide information on the implementation schedule.

SEE BACKGROUND REPORT 6.2

2. Are changes needed to the solid waste disposal area? Describe.

YES SEE BACKGROUND REPORT 6.2

Abandonment and Restoration

1. List and describe abandoned or restored solid waste facilities. Indicate their location on a map.

NONE

Identification

Are there signs identifying past and present solid waste disposal sites?

☒ Yes ☐ No

VI. INSPECTION AND MONITORING

1. When were municipal facilities inspected by?

☒ Indian and Northern Affairs Inspector Date: 2003/2004
☐ Municipal and Community Affairs Date: _____
☐ Other: _____ Date: _____

2. Is there a system in place for reporting spills?

☐ Yes ☒ No

If yes, describe.

SEE BACKGROUND REPORT 5.0

3. Is there a contingency plan for clean up of spills?

☐ Yes ☒ No

If yes, describe.

4. Have any spills occurred in the past five years?

☐ Yes ☒ No

If yes, describe and show on a map the locations of the spills. What action has been taken to clean the affected areas?

Monitoring Program

1. ~~X~~ Is water sampling and analysis done?

~~X~~ Yes ___ No

If Yes, answer the questions a to c

a. Briefly describe how samples are taken and sent to the laboratory.

GRAB SAMPLES

b. Briefly describe any monitoring done for wastewater effluent and leachate.

PERIODIC SAMPLING

c. Who is responsible for water sampling?

Name: - VARIOUS EMPLOYEES -

Position: PUBLIC WORKS EMPLOYEE

Telephone #: 983 2337

Fax #: 983 2193

Level of training: _____

d. Recognized laboratory performing analysis of samples.

Name: VARIOUS LABS

Address: _____

Telephone #: _____

Fax #: _____

e. Are any changes planned in the water quality-monitoring program? ___ Yes ~~X~~ No
If yes, describe.

VII. PUBLIC CONCERNS

1. What concerns does the municipality or residents have regarding the municipal water supply water supply or waste disposal facilities? List the concerns and describe what steps have been taken to address those concerns.

NONE

VIII. PUBLIC HEALTH *(Help may be obtained from the Regional Environmental Health Officer if you have difficulty with this section.)*

1. Date: 2007 08 31

2. Municipality: CAMBRIDGE BAY
3. Contact: (Environmental Health Officer Contact) JEREMY ROBERTS
- Telephone # 867 982 7610
- Fax #: 867 982 7640

4. Have there been any problems or health/environmental concerns with drinking water?
Yes ☒ No
If yes, describe:

5. Have there been any problems or health/environmental concerns with sewage disposal/treatment?
☒ Yes No
If yes, describe: SEE BACKGROUND REPORT 5.0

6. Have there been any problems or health/environmental concerns with solid waste disposal?
☒ Yes No
If yes, describe: SEE BACKGROUND REPORT 5.0

Monitoring Program

1. Does the Regional Health Board perform water quality sampling?
☒ Yes No
If Yes, answer questions (a) to (e)

- a. Briefly describe the sampling methodology.

GRAB SAMPLES

- b. Briefly describe any monitoring of wastewater effluent and leachate.

SEE BACKGROUND REPORT 5.0

- c. Who is responsible for sampling?

Name: VARIOUS CONSULTANTS

Position: _____

Telephone #: _____

Fax #: _____

Level of training: _____

- d. Recognized laboratory performing analysis of samples.

Name: VARIOUS LABS

Address:

Telephone #:

Fax #:

- e. Are any changes planned in the water quality-monitoring program?

☒ Yes ☐ No
If yes, describe.

AS PART OF PLANNED
IMPROVEMENTS. OSM
SEE BACKGROUND REPORT.

IX. TECHNICAL INFORMATION (Assistance may be obtained from the Regional Community Government (CG&T) office if you have difficulty with this section).

1. Date: 2007 07 31
2. Municipality: HAMLET OF CAMBRIDGE BAY
3. Contact: JOHN LIVINGSTON
- Telephone #: 807 983 4156
- Fax #: 807 983 4124
4. Population: 1500
5. Estimated growth rate over next 5 years: 150

6. Has any baseline data collection and evaluation been undertaken with respect to the physical, biological, and chemical characteristics of the main water bodies in the area?

☐ Yes ☒ No

If yes, provide a summary of program details or site title, authors, cities, and dates:

If no, are such studies being planned?

☒ No ☐ Yes (If yes, when and by whom):

7. Have Elders been consulted in the collection of baseline data on main water bodies in the area?

☒ No ☐ Yes

If yes, specify.

8. Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project?

☒ No ☐ Yes

If yes, provide details below.

If no, are such studies being planned?

~~X~~ No ___ Yes.

If yes, specify:

Attachments

1. Attach detailed plan or drawing(s) of the present *solid waste disposal area*.

Include the following information:

- ~~/~~ a. details of pond size and elevation;
- ~~/~~ b. details of all retaining structures (dimensions, materials of construction, etc.);
- ~~/~~ c. details of the drainage basin, and existing and proposed drainage modifications;
- ~~/~~ d. details of all decant, siphon mechanisms etc., including sewage treatment facilities;
- ~~/~~ e. details regarding direction and path of wastewater flow from the area;
- ~~/~~ f. distance from watercourses and fish bearing waters;
- ~~/~~ g. location and construction of liners;
- ~~/~~ h. leachate and groundwater collection systems; and
- ~~/~~ i. control structures.

SEE BACKGROUND REPORT

2. Attach detailed plan or drawing(s) of the present *sewage treatment system*. The drawing(s) should include the following:

- ~~/~~ a. details of all retaining structures (dimensions, materials of construction, etc.);
- ~~/~~ b. details of the drainage basin, and existing and proposed drainage modifications;
- ~~/~~ c. details regarding direction and path of wastewater flow from the area;
- ~~/~~ d. indications of the distance from watercourses and fish bearing waters;
- ~~/~~ e. all sources of seepage presently encountered near these areas, including volumes (m^3/day) and directions.
- ~~/~~ f. The volume of seepage flow (m^3/day); and
- ~~/~~ g. The direction of each flow.

SEE BACKGROUND REPORT

3. Are drawings for the solid waste disposal area and sewage treatment system attached?

~~X~~ Yes ___ No

If Yes, who has provided them?

SEE BACKGROUND REPORT
CONSULTANT - EARTH TECH CANADA

If no, indicate when they will be available.

Hydrology

1. Effects on surface water flow:

Are any stream channels altered?

___ Yes ☒ No

Is the natural storage or water level of any lake or pond changed?

___ Yes ☒ No

Are there changes in water flow downstream of the project?

___ Yes ☒ No

Is a storage reservoir created in a natural channel?

___ Yes ☒ No

If yes to any of the above, briefly describe the expected change in flow or storage:

2. Drainage Area:

What is the drainage area?

10 km² ESTIMATED

What is the average elevation of the drainage basin?

10 metres

ESTIMATED

Is the drainage basin outlined on an attached map?

___ Yes ☒ No

Describe the drainage basin characteristics, (vegetation, general soil type, lakes, swamps and permafrost areas, etc.)

SEE BACKGROUND REPORT, TABLE 1

3. Channel characteristics:

Is the course of any channel changed?

___ Yes ☒ No

If yes, describe measures to maintain stream bed and bank stability.

4. Will the cross-section of any watercourse be changed?

___ Yes ☒ No

If yes, describe the change and its effect on the flow capacity of the channel.

Water Supply

1. What is the rate of withdrawal from the source? 240 m³/day

2. Is water drawn from the source ___ intermittently

☒ continuously

3. If it is drawn intermittently, during what month(s) is it drawn? _____

4. For what period is it drawn (days/weeks/months)? _____

5. What is the rate of flow of source (if river) or size (if lake)? _____
6. At the intended rate of water usage, describe the effects on the river or lake from which water will be drawn. NONE

Water Intake

1. Please provide short descriptions of the following:

- a. freshwater intake facility

- b. operating capacity of the pumps

- c. intake screen size:

SEE BACKGROUND REPORT
SEE BACKGROUND REPORT
SEE BACKGROUND REPORT

Water Storage

1. Is a dam or dyke being used to store or alter the flow of water? Yes ☒ No
2. What are the dimensions of the dam or dyke?
 Length: _____ Width: _____ Height: _____
 U/S slope: _____ D/S slope: _____
3. Does the proposed dam create a reservoir in a natural watercourse?
Yes ☐ No ☐
 If yes, what is the storage capacity and surface area of the reservoir?
 _____ m³ _____ ha.
4. Will the dam or dyke affect fish migration or movement?
Yes ☐ No ☐
 If yes, describe all measures for compensation of fish habitat lost due to the dam or dyke, and mitigation for fish migration or movement.

Water Treatment

1. Indicate the capacity of the treatment facility. 240 M³/DAY L/min
2. What is the capacity of the water storage facility 260 M³ litres
3. Describe the method of water treatment (i.e., backwash, flocculation, sedimentation, chemicals used), and provide the results of the most recent bacteriological and chemical analysis. Attach a diagram, if possible.

NONE

4. Are there any changes planned in the water treatment facilities? ☒ No ☐ Yes
If yes, attach a copy of the plan or indicate changes and include an implementation schedule.
Include excerpt from MACA Capital Plan if available.

Sewage Disposal - **PLANNED IMPROVEMENTS 2008**

1. Indicate the level of sewage treatment:
☐ primary ☒ secondary ☐ tertiary
Pre-treatment (if applicable): ☐ screening ☐ maceration
Lagoons (if applicable): ☐ anaerobic ☐ aerobic ☒ facultative
2. Indicate the capacity of the sewage treatment facility 120,000 m³
3. Based on current population projections, the facility will meet the needs of the community until the year 2026
4. Average depth of the wastewater lagoon 2 m.
5. What is the design freeboard? 1 m.
6. Indicate the retention time of the sewage while in the treatment facility
365 days. **NOT KNOWN**
7. Indicate the estimated rate of discharge of wastewater L/sec.
8. Indicate the location of the discharge point **SEE BACKGROUND**
9. Is the discharge: ☒ seasonal ☐ continuous **REPORT**
If the discharge is seasonal, during what month(s) is it done? JULY/AUGUST
What is the duration of the discharge (days/weeks/months)? 8 WEEKS
10. Are there any changes planned in the sewage disposal facilities?
☐ No ☒ Yes
If yes, attach a copy of the plan or indicate changes and include an implementation schedule.

Include excerpt from MACA Capital Plan if available

Solid Waste Disposal - **PLANNED IMPROVEMENTS**

1. Indicate the capacity of the disposal area ± 40,000 m³

2. The *average* depth of the solid waste disposal site 2 m.
3. The current facility will meet community needs until the year 2016
4. Do any natural watercourse enter the solid waste disposal area? What methods are used to decrease the amount of runoff water entering these areas?
SEE BACKGROUND REPORT
5. Indicate the volume of water that may enter these areas from any source(s) and attach all pertinent details of the diversions.
SEE BACKGROUND REPORT
Source Volume
6. Please describe any diversions of watercourses: NONE
7. Are there any changes planned in the solid waste disposal facilities? No ☒ Yes
If yes, attach a copy of the plan or indicate changes and include an implementation schedule.
SEE BACKGROUND REPORT
- Other**
1. Describe any additional details on the existing municipal facilities which should be considered by the Nunavut Water Board during its review.