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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI

On file

**HAMLET OF
CORAL HARBOUR
Water Licence Application
Supplementary Questionnaire**

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APPROVED
DATE: 11/11/11
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I. GENERAL

1. Date: July 24th 2002
2. Applicant: Hamlet of Coral Harbour
Municipality and Region
3. Contacts: Jean Cobiel
Name of Contact
- Municipal Planning Engineer- Kivalliq Region
Position
- (867) 645-8114
Telephone # Fax #
4. Community Status: ☐ Village ☐ Town ☐ City
☐ Hamlet ☐ Settlement Corporation
5. Indicate the status of the municipality's licence on the date of the application:
☐ New Application
☒ Renewal - Water Licence #
☒ Amendment

ATTACHMENTS

1. Attach current or up-to-date detailed map(s) showing the locations of the: *only applicable where indicated.*
 - a. raw water intake;
 - b. water storage and treatment facilities;
 - c. fuel and chemical storage;
 - d. sewage treatment facilities (lagoon, honey bag pit, wetland); *Drawing CH-3*
 - e. wastewater treatment area and discharge outlets; *Drawing CH-3*
 - f. solid waste disposal areas and drainage patterns; *Drawing CH-3*
 - g. hazardous waste disposal area; *Drawing CH-3*
 - 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.

Indicate which organization has provided the various maps or diagrams.
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III. WATER SUPPLY

Water Source

1. Type of source: ☐ Lake ☐ River ☐ Well ☐ Other _____

2. Name of water source and alternative, if any.

3.

Primary Source

Secondary Source

3. Usual break-up & freeze-up period: _____
Break-up Freeze-up

Water Intake

1. Please provide short descriptions for the following:

a. Freshwater intake facility

b. Operating capacity of pumps used

c. Intake screen size

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?

1. Indicate the quality of the water.

2. Describe.

Description	
___	Filtration and chlorination
___	Chlorination only
___	None
___	Other _____

1. Volume of water use:

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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.

Identification

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

IV. PROPOSED SEWAGE DISPOSAL

1. What type(s) of sewage treatment does the community have?
 - ☐ Lagoon
 - ☐ Mechanical system
 - ☒ Wetland
 - ☐ Honey bag
 - ☐ Combination/Other: describe

Secondary discharge over natural wetland, to the ocean.

Lagoon (if applicable)

1. Has there been any operating problems with the lagoon?
 - ☐ Yes ☐ No

If yes, describe

Mechanical System (if applicable)

1. Describe (type, specifications, operation and maintenance program for the mechanical wastewater treatment system).
2. Are sludges produced ?
 - ☐ Yes ☐ No

If yes, describe how the sludges are disposed of:

Wetland(if applicable)

1. Describe the Wetland wastewater treatment system.

In the summer, the wastewater is treated overland through a natural wetland with an area of 10.5 ha. The wetland consists of 4 shallow ponds with an area of 7 hectares. The remaining 3.5 ha is covered by soils of 2-15 mm thickness. In the winter, the sewage accumulates in ice mounds for 8 months and duration of melt period is 60 days. The proposed upgrades will involve a rock wall for the sewage drop off site and a deflection berm to limit flow towards the solid waste facility.

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:

There is no demand for a honey bag disposal method as no residences in the community rely on honeybags. All buildings and homes rely on sewage pumpout. Honey bags are used for camping trips with are disposed off with the municipal waste as accepted by the Hamlet foreman.

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, shell fish 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.

- b. Discharge control system

☐ Satisfactory ☐ Unsatisfactory

If unsatisfactory, explain.

- c. Dams, diversion dykes, berms

☐ Satisfactory ☐ Unsatisfactory

If unsatisfactory, explain.

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.

Proposed upgrades will include the construction of a rock wall for sewage drop off site as well as a deflection berm to restrict flow into the solid waste facilities. Please see Drawings CH-3 to CH-5 for details.

2. Does the municipality or residents believe changes are needed to the sewage treatment facilities? Describe.

Abandonment and Restoration

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

Identification

Are there signs identifying past and present sewage disposal sites ?

☐ Yes ☒ No

Signage and signage locations are detailed in drawing CH-7.

V. PROPOSED SOLID WASTE DISPOSAL

1. Briefly describe how solid wastes are collected and delivered to the disposal area.
See original water licence application submitted by FSC.
2. Is the solid waste site fenced? ☐ Yes ☒ No
Proposed upgrades include the placement of fences around the perimeter of the access road and the expansion of the solid waste facility (Drawing CH-3).
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.
2. Has the municipality considered measures for waste reduction such as recycling or reuse?
☒ Yes ☐ No

If yes, describe

There are separate areas designated for hazardous wastes and reuseable material (Drawing CH-3).

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

Waste Oil Pit

1. Describe the waste oil storage 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.

The past bulky waste disposal area (consists mainly of old vehicles and tires) are located west of the existing solid waste facilities (Drawing CH-3) and are currently begin decommissioned. The new bulky waste disposal is located south east of the current solid waste facilities.

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.

2. Will the municipality use a hazardous waste disposal area?
☒ Yes ☐ No

If yes, describe its:

- a. Location
Within current solid waste disposal site. (See drawing CH-3).
- 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.

The proposed expansion will meet the requirements of the community until the new site is commissioned in 2007.

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.

The proposed changes include expansion to the solid waste facility. See the FSC report and Drawing CH-3.

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

The proposed plan to expand the solid waste site and install a fence will alleviate any changes that are required.

Abandonment and Restoration

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

The past bulky waste disposal area (consists mainly of old vehicles and tires) are located west of the existing solid waste facilities (Drawing CH-3) and are currently begin decommissioned. The new bulky waste disposal is located south east of the current solid waste facilities.

Identification

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

☐ Yes ☒ No

Signs will be installed as part of proposed amendment.

VI. INSPECTION AND MONITORING

1. When were municipal facilities inspected by:

☐ Indian and Northern Affairs Inspector

Date: _____

☐ Municipal and Community Affairs

Date: _____

☐ Other:

Date: _____

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

☐ Yes ☐ No

If yes, describe.

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. Is water sampling and analysis done ?
___ Yes ___ No

If Yes, answer the questions a to e

- a. Briefly describe how samples are taken and sent to the laboratory.
- b. Briefly describe any monitoring done for wastewater effluent and leachate.
- c. Who is responsible for water sampling ?
Name: _____
Position: _____
Telephone #: _____
Fax # : _____
Level of training: _____
- d. Recognized laboratory performing analysis of samples.
Name: _____
Address: _____
Telephone #: _____
Fax #: _____
- e. Are any changes planned in the water quality monitoring program?
___ Yes ___ No
If yes, describe.

VII. PUBLIC CONCERNS

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

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

1. Date:
2. Municipality:
3. Contact: (Environmental Health Officer Contact)

Telephone #: _____

Fax #: _____

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

6. Have there been any problems or health/environmental concerns with solid waste disposal?
____ Yes ____ No

If yes, describe

Monitoring Program

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

- a. Briefly describe the sampling methodology.

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

c. Who is responsible for sampling ?

Name:

Position:

Telephone #:

Fax # :

Level of training:

d. Recognized laboratory performing analysis of samples.

Name:

Address:

Telephone #:

Fax # :

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

☐ Yes ☐ No

If yes, describe.

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

1. Date:

2. Municipality:

3. Contact:
(Community Government and Transportation Representative)

Telephone #

Fax #

4. Population (according to most recent census results):

5. Estimated growth rate over next 5 years:

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:

Prepared by

Title

Completion Date

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.

Prepared by

Title

Completion Date

If no, are such studies being planned?

☐ No ☐ Yes.

If yes, specify:

Attachments

1. Attach detailed plan or drawing(s) of the present *solid waste disposal area*. Include the following information: ***Please refer to Drawings CH-3, CH-4 & CH-5***
 - 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.
2. Attach detailed plan or drawing(s) of the present *sewage treatment system*. The drawing(s) should include the following: ***Please refer to Drawings CH-3, CH-4 & CH-5***
 - 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.

3. Are drawings for the solid waste disposal area and sewage treatment system attached?
☒ Yes ☐ No

If Yes, who has provided them?

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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? _____ km²
What is the average elevation of the drainage basin? _____ metres
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.)

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? _____ 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.

Water Intake

1. Please provide short descriptions of the following:
 - a. freshwater intake facility
 - b. operating capacity of the pumps
 - c. intake screen size

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. _____ L/min
2. What is the capacity of the water storage facility. _____ m³
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.
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

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 7,300 m³ (*series of 4 shallow ponds that will provide wetland treatment*)
3. Based on current population projections, the facility will meet the needs of the community until
the year 2021.
4. Average depth of the wastewater treatment area 1 to 2.3 m.
5. What is the design freeboard? n/a m.
6. Indicate the retention time of the sewage while in the treatment facility
days. *The sewage accumulates in ice mounds for approximately 8 months following a 60-day melt period.*

7. Indicate the estimated rate of discharge of wastewater n/a L/sec.
8. Indicate the location of the discharge point at the sewage drop-off site (CH-3).
9. Is the discharge: seasonal continuous as required

If the discharge is seasonal, during what month(s) is it done? _____

What is the duration of the discharge (days/weeks/months) ? _____

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.

Proposed changes involve the reconstruction of a rock wall to allow operators to discharge sewage in three different directions depending on the wind direction. A deflection berm to prevent sewage from seeping into the sold waste facilities. (FSC 2002 and Dillon 2002 reports, Appendix A)

Include excerpt from MACA Capital Plan if available.

Solid Waste Disposal

1. Indicate the capacity of the disposal area 8,000 m³.
2. The *average* depth of the solid waste disposal site 1 m.
3. The current ***expanded*** facility will meet community needs until the year 2007.
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? *Containment berms will be constructed around the expansion of the site. Deflection berms will be constructed on north side to prevent seepage from neighbouring sewage facilities.*
5. Indicate the volume of water that may enter these areas from any source(s) and attach all pertinent details of the diversions.

Source

Volume

6. Please describe any diversions of watercourses:

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.

The proposed changes involve an expansion of the current site that will be enclosed by containment berms and will have an engineered discharge channel and culvert with a valve control. The site will also be fenced. (Drawings CH-3,4,5)

Include excerpt from MACA Capital Plan if available.

Other

1. Describe any additional details on the existing municipal facilities which should be considered by the Nunavut Water Board during its review.