



Updated 4 March 2005

I. GENERAL

1. Date:
2. Applicant: **Hamlet of Resolute Bay, Resolute Bay, Nunavut**

Contacts:

Name of Contact: Josh Hunter
Position: Senior Administrative Officer
Telephone: 867-252-3616
Fax: 867-252-3749

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 #

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
 - 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
 - j. Outline drainage basin
 - k. Traditional use areas outlined on site map and areas around the community used for recreation, camping, fishing, etc.
 - l. 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.

III. WATER SUPPLY

Water Source

1. Type of source:

☐ Lake
☐ River
☐ Well
☐ Other

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

Primary Source: **Char Lake**

Secondary Source: **Strip Lake (airport buildings & South Camp)**

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

Not applicable to Hamlet of Resolute Bay. Water Source and Water Treatment and Distribution Infrastructure operated by the Government of Nunavut.

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?
What type of liner?
When was it installed?

Water Treatment

1. Indicate the quality of the water.

Summer:	<input type="checkbox"/> good	<input type="checkbox"/> fair	<input type="checkbox"/> poor
Fall:	<input type="checkbox"/> good	<input type="checkbox"/> fair	<input type="checkbox"/> poor
Winter:	<input type="checkbox"/> good	<input type="checkbox"/> fair	<input type="checkbox"/> poor
Spring:	<input type="checkbox"/> good	<input type="checkbox"/> fair	<input type="checkbox"/> poor

2. Describe.

Not applicable to Hamlet of Resolute Bay. Water Source and Water Treatment and Distribution Infrastructure operated by the Government of Nunavut.

3. Type of water treatment.

☐ Filtration and chlorination
☐ Chlorination only
☐ None
☐ Other

Description:

Not applicable to Hamlet of Resolute Bay. Water Source and Water Treatment and Distribution Infrastructure operated by the Government of Nunavut.

Water Use And Distribution

1. Volume of water use:

Distribution	Estimated number of people on the system A	Estimated average water consumption (Litres/capita/day) B	Total water consumption (Litres/day) A x B
PIPED			
TRUCKED			
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.

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

Not applicable to Hamlet of Resolute Bay. Water Source and Water Treatment and Distribution Infrastructure operated by the Government of Nunavut.

Lagoon (if applicable)

1. Have 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).

Not applicable to Hamlet of Resolute Bay. Water Source and Water Treatment and Distribution Infrastructure operated by the Government of Nunavut.

2. Are sludges produced?

If yes, describe how the sludges are disposed of

Not applicable to Hamlet of Resolute Bay. Water Source and Water Treatment and Distribution Infrastructure operated by the Government of Nunavut.

Wetland (if applicable)

1. Describe the Wetland wastewater treatment system.

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

General Condition of the sewage treatment facilities

1. General conditions
 - 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.

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

V. SOLID WASTE DISPOSAL

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

A one-person crew using a Ford model F-350 truck collects solid waste daily. Garbage is placed in 205 L drums prior to pick-up.

Bulky wastes are the responsibility of the individual. In August of each year the Hamlet organizes a clean-up day.

2. Is the solid waste site fenced?

☐ Yes ☒ No

3. Is the fence adequate?

☒ Yes ☐ No **At the new solid waste site.**

If no, describe

Waste Reduction

1. Does the municipality burn garbage?

☒ Yes ☐ No

If yes, describe how and when this is done.

Burning at the site is practiced every day and the site is covered and compacted monthly despite the absence of abundant cover material.

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

☒ Yes ☐ No

If yes, describe

We have had brief management discussions on this subject but nothing is pending at this time.

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.

We send our waste oil to Narwhal for their use in their waste-oil furnace.

Bulky Scrap Metal Waste Disposal Area

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

☒ Yes ☐ No

Bulky wastes are stored at a separate site (300 m²)

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 storage area?

☒ Yes ☐ No

If yes, describe:

- a. Location – **We store batteries at the Hamlet garage for furtherance down south via the summer sea-lift.**

- b. Structure
- c. Operation and maintenance

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 community feels that the current waste disposal area is too close to the high tide line.

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.

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

Abandonment and Restoration

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

Identification

- 1. 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: **July, 2003**

☒ Community Government and Transportation

Date: **February, 2004**

☐ Other:

Date: _____

See attached 2003 INAC Inspection Report

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? **See Attached spill reports.**

Monitoring Program

1. Is water sampling and analysis done?

☒ Yes ☐ No

If Yes, answer questions a through e

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

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

**Done annually by government bodies. Indian and Northern Affairs Inspector
Community Government and Transportation**

- c. Who is responsible for water sampling?

Name: Paul Diamond

Position: Settlement Maintainer/Supervisor

Telephone: (867) 252-3655

Fax: (867) 252-3622

Level of training: **Water and Sewerage Certification Level I**

- d. Recognized laboratory performing analysis of samples.

Name: Government of Nunavut

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.

The community feels that the current waste disposal area is too close to the high tide line.

VIII. PUBLIC HEALTH

Help may be obtained from the Regional Environmental Health Officer if you have difficulty with this section.

1. Date:
2. Municipality: Iqaluit, NU
3. Contact: Philip Reeve
Telephone: (867)-975-4800
Fax: (867)-975-4830
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 ☒ Yes

If Yes, answer questions (a) to (e)

- a. Briefly describe the sampling methodology.
Same as Section 1-B page 13.

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

c. Who is responsible for sampling?

Name: Paul Diamond

Position: Settlement Maintainer

Telephone #: 867-252-3655

Fax #: 867-252-3622

Level of training: **Water and Sewerage Certification Level I**

d. Recognized laboratory performing analysis of samples.

Name: GN

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: **4 March 2005**

2. Municipality: **Hamlet of Resolute Bay**

3. Contact: **Josh Hunter**

Telephone # **(867) 252-3616**

Fax # **(867) 252-3749**

4. Population (according Hamlet Government: **240**

5. Estimated growth rate over next 5 years: **8.6%**

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:

Please see previously submitted study proposals and reports.

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

Please see previously submitted study proposals and reports.

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.

Please see previously submitted study proposals and reports.

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:
 - a. Details of pond size and elevation:

- b. Details of all retaining structures:
 - c. Details of the drainage basin, and existing and proposed drainage modifications:
 - d. Details of all decant, siphon mechanisms etc., 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 control structures:
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:
 - 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):
 - 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?
- 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:

What is the average elevation of the drainage basin?

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.)

Cornwallis Island is in the Innuition Region. Most of the land has been worn to a peneplained surface. There is a general slope toward the coast, with high bluffs up to 260 m in the southeast and lower elevations toward the north end of the Island. The shores of Resolute Bay are low and composed of Palaeozoic limestones and shales. The land surface slopes gradually from the shore in a series of gravel ridges, which appear to be raised beach lines. Rising to an elevation of 195 m, Signal Hill, a prominent landmark, is situated at the north end of the bay.

Bedrock is typically 1.5 to 9.5 m below the surface. Aggregate materials above the bedrock consist of gravel-sized frost-shattered material, cobbles averaging 20 cm in diameter and fines, which are mainly non-plastic.

The depth of the permafrost active layer varies between 0.5 m and 1 m. The ice constant varies between 10% and 25% by volume.

Vegetation is limited to lichens, mosses and grasses. Grasses tend to grow in wetter areas near lakes and streams.

3. Channel characteristics:

Is the course of any channel changed?

☐ Yes ☐ No

If yes, describe measures to maintain streambed 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?

36 m³/day from Char Lake

3.63 m³/day from Strip Lake trucked to South Camp. Water used for the delivery is taken from the piped system at the airport.

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 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?

3. Does the proposed dam create a reservoir in a natural watercourse?

If yes, what is the storage capacity and surface area of the reservoir?

4. Will the dam or dyke affect fish migration or movement?

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:
2. What is the capacity of the water storage facility:
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:
3. Based on current population projections, the facility will meet the needs of the

community until the year:

4. Average depth of the wastewater lagoon
5. What is the design freeboard:
6. Indicate the retention time of the sewage while in the treatment facility days:.
7. Indicate the estimated rate of discharge of wastewater:
8. Indicate the location of the discharge point
9. Is the discharge:
☐ seasonal
☐ continuous

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. Include excerpt from MACA Capital Plan if available.

Solid Waste Disposal

1. Indicate the capacity of the disposal area: **120 m²**
2. The *average* depth of the solid waste disposal site **6 m**
3. The current 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? **No.**
5. Indicate the volume of water that may enter these areas from any source(s) and attach all pertinent details of the diversions. **N/A**

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. 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.