



P.O. Box 119  
GJOA HAVEN, NU X0B 1J0  
TEL: (867) 360-6338  
FAX: (867) 360-6369

ᓄᓇᓂᓪ ᐃᓕᓕᓂᓪ ᑲᑎᓕᓂᓪ  
NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

---

File No.: 3BM-CHE1013

October 4, 2010

Marjory Dobson  
Senior Administrative Officer  
Hamlet of Chesterfield Inlet  
P.O. Box 10  
Chesterfield Inlet, Nunavut  
X0C 0B0  
Email: [sao\\_hamlet@qiniq.com](mailto:sao_hamlet@qiniq.com)

**RE: NWB Licence No. 3BM-CHE1013**

Dear Ms. Dobson,

Please find attached the renewal Licence No. 3BM-CHE1013 issued to the Hamlet of Chesterfield Inlet by the Nunavut Water Board (NWB) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*. The terms and conditions of the attached Licence related to water use and waste disposal are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee may be in contravention of the *Nunavut Land Claims Agreement* (NLCA) and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRTA). However, the expiry or cancellation of a licence does not relieve the Licensee from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least three (3) months prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment, however a minimum of sixty (60) days is required from the time of acceptance by

the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and acknowledged by the Manager of Licensing.

The NWB strongly recommends that the Licensee consult the comments<sup>1</sup> received from interested persons on issues identified during the review process. This information is attached for your consideration.

Sincerely,

A handwritten signature in dark ink, appearing to read 'T. Kabloona', with a long horizontal flourish extending to the right.

Thomas Kabloona  
Nunavut Water Board  
Chair

TK/tla/pb

Enclosure: Licence No. 3BM-CHE1013  
Comments INAC, EC, GN-DoE and GN-CLEY

cc: Kivalliq Distribution List

---

<sup>1</sup> GN-DoE dated June 15, 2009; GN-CLEY dated May 29, 2009; INAC dated June 10, 2009 & July 14, 2010; and EC, June 15, 2009 & July 14, 2010.



P.O. Box 119  
Gjoa Haven, NU X0B 1J0  
Tel: (867) 360-6338  
Fax: (867) 360-6369

ᓄᓇᓂᓪ ᐃᓕᓕᓂᓪ ᑲᓂᓕᓂᓪ  
NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

---

## DECISION

### LICENCE NUMBER: 3BM-CHE1013

This is the decision of the Nunavut Water Board (NWB) with respect to an application received September 9, 2008, as revised February 24, 2009 and with additional information submitted June 3, 2010, for the renewal of a Licence made by the:

### HAMLET OF CHESTERFIELD INLET

to allow for the use of water and disposal of waste for the Hamlet of Chesterfield Inlet, located within the Kivalliq Region of Nunavut. With respect to this application, the NWB gave notice to the public that the Hamlet had filed an application for a water licence amendment and renewal.

### DECISION

After having been satisfied that the application was exempt from the requirement for screening by the Nunavut Impact Review Board in accordance with S. 12.3.2 of the *Nunavut Land Claims Agreement* (NLCA), the NWB decided that the application could proceed through the regulatory process. After reviewing the full submission of the Applicant and written comments expressed by interested parties, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *NLCA* and of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA), decided to waive the requirement to hold a public hearing and determined that:

**Licence Number NWB3CHE0308 be renewed and issued as 3BM-CHE01013 subject to the terms and conditions contained therein. (Motion #: 2010-15-L15)**

SIGNED this 1st day of October, 2010 at Gjoa Haven, NU.

---

Thomas Kabloona  
Nunavut Water Board  
Chair

## TABLE OF CONTENTS

<b>DECISION.....</b>	<b>i</b>
<b>TABLE OF CONTENTS .....</b>	<b>ii</b>
<b>I. BACKGROUND .....</b>	<b>1</b>
<b>II. PROCEDURAL HISTORY .....</b>	<b>1</b>
<b>III. ISSUES.....</b>	<b>3</b>
TERM OF LICENCE.....	3
ANNUAL REPORT .....	4
OPERATIONAL PLANS .....	5
WATER USE .....	5
SEWAGE .....	6
SOLID WASTE .....	7
MODIFICATIONS AND CONSTRUCTION .....	7
ABANDONMENT, RESTORATION AND CLOSURE .....	8
MONITORING PROGRAM .....	8
<b>WATER LICENCE .....</b>	<b>10</b>
<b>PART A: SCOPE AND DEFINITIONS .....</b>	<b>11</b>
1. SCOPE .....	11
2. DEFINITIONS .....	11
3. ENFORCEMENT .....	14
<b>PART B: GENERAL CONDITIONS .....</b>	<b>14</b>
<b>PART C: CONDITIONS APPLYING TO WATER USE .....</b>	<b>16</b>
<b>PART D: CONDITIONS APPLYING TO WASTE DISPOSAL.....</b>	<b>16</b>
<b>PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION</b>	<b>18</b>
<b>PART F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE.....</b>	<b>18</b>
<b>PART G: CONDITIONS APPLYING TO ABANDONMENT, RESTORATION AND CLOSURE .....</b>	<b>19</b>
<b>PART H: CONDITIONS APPLYING TO THE MONITORING PROGRAM.....</b>	<b>20</b>

## **I. BACKGROUND**

The Hamlet of Chesterfield Inlet (Licensee or Hamlet) is located within the Kivalliq Region of Nunavut, at general latitude 63°20'N and general longitude 90°42'W, on the western shore of Hudson Bay.

Water and waste infrastructure in the Hamlet serves a population of approximately 377 people and consists of a water supply system, wetland treatment area for sewage and a landfill.

Freshwater for the Hamlet is pumped from First Lake into a 30,000 m<sup>3</sup> reservoir via an overland pipeline. First Lake is located approximately 3 km southwest of the Hamlet while the reservoir is situated immediately west of the Hamlet. The reservoir is filled annually over a seven-day period during the summer.

The Hamlet has been disposing of its sewage into a tundra wetland at a location approximately 2.5 km west of the community since 1993. The wetland consists of one dumping station, four ponds, with several other intermittent ponds, some small streams, and open, boggy wet tundra areas with overland flow occurring in between. All of these components together comprise the tundra wetland. The sewage drains from a single discharge point into a small pond (Pond 1). It then flows through the wetland before entering the ocean at Finger Bay on Hudson Bay. The distance between the discharge point and the sea is approximately 800 metres. Previous measurements indicated the tundra wetland covered an area of approximately 165,000 square meters. However, measurements in 2008 indicate the tundra wetland may only have an effective area of approximately 104,000 square meters (10.4 ha).

Solid waste is collected on a scheduled basis and transported by truck to the current solid waste disposal facility. The hazardous waste storage area is located within the current solid waste facility. Bulky waste is segregated from the solid waste and stored approximately 200 m outside the landfill site.

There is one abandoned sewage treatment facility in Chesterfield Inlet and a previously decommissioned landfill.

## **II. PROCEDURAL HISTORY**

On September 9, 2008 the Nunavut Water Board (NWB) received an application from the Hamlet to renew its municipal water Licence. The NWB wrote to the Hamlet on October 15, 2008 indicating that the application was substantially deficient and highlighted additional information required prior to proceeding with the renewal.

At the time, the NWB also noted that the application as submitted included a proposed road to Josephine Lake. On January 14, 2009 the NWB wrote to the Hamlet indicating that the proposed road should be processed separately from the municipal water Licence renewal application. The NWB assigned the proposed road development to Josephine Lake file number 8BW-CHI. However, on December 16, 2009 the NWB received notice from the Hamlet that the application was withdrawn. File 8BW-CHI was formally cancelled by the NWB on January 11, 2010.

On February 24, 2009 additional information for the Hamlet's municipal water Licence renewal was submitted to the NWB by Nunami Stantec on behalf on the Hamlet. Additional information included:

- Water Licence Application Form (renewal);
- Water Licence Application Supplementary Questionnaire for Municipalities;
- Application Summary in English and Inuktitut;
- Figure A. Location of municipal water and waste facilities;
- Schematic Design Report, Tundra Wetland Sewage Treatment System Design Chesterfield Inlet.

Following a review of the information, the NWB distributed the renewal application to interested parties for review and comment on May 14, 2009. In its distribution letter, the NWB also advised the Hamlet that an administrative compliance of the Licensee's file found that several plans, reports and requirements of Licence NWB3CHE0308 had not been filed or met. The NWB requested that the Hamlet provide a plan to address the issues identified in the assessment. The plan was to be provided before the end of the review period so that interested parties could consider the plan prior to the comment deadline. However, by June 15 2009, the end of the comment period, the requested plan had not been provided. Comments were submitted by Environment Canada (EC), Indian and Northern Affairs Canada (INAC), Government of Nunavut Department of Environment (GN-DoE), and Government of Nunavut Department of Culture, Language, Elders and Youth.

As a result of the plan not being provided, the NWB received the following comments:

The Hamlet was required, as part of the expired license, to submit operational and maintenance plans for the Sewage and Solid Waste facilities, as well as a spill contingency plan to deal with fuel spills, storage and transportation of wastes, etc. A search of the NWB website revealed that no such plans have been submitted by the Hamlet. The Board should consider the submission of these plans prior to renewing this license (INAC Pg. 3)

And

DOE has reviewed the NWB's April 20, 2009 compliance assessment report and agrees with the NWB's report that outlining a number of unresolved issues and information needed to properly review the water licence application from the Hamlet is missing (GN-DoE Pg. 1).

The issues identified by parties were forwarded to the Hamlet on July 10, 2009. In its letter, the NWB requested that the plan be provided and that the Hamlet address the concerns raised by parties during the review of the renewal application.

Following several attempts made by the NWB to contact the Hamlet, the NWB was notified by Nunami Stantec on February 17, 2010 that it was again retained by the Government of Nunavut Department of Community and Government Services to address the issues with the renewal application on behalf of the Hamlet. An anticipated timeframe for the submission of a response was estimated to be April 30, 2010.

On June 3, 2010 the NWB was provided with additional information submitted by Nunami Stantec, on behalf of the Hamlet, to address the outstanding issues. The submission included:

- Annual Reports for 2007, 2008 and 2009;
- An Operations and Maintenance (O&M) Manual for Water, Sewage and Solid Waste Systems;
- A Spill Contingency Plan (Section 6.2 of the O&M Manual); and
- An Abandonment and Restoration Plan (Appendix D of the O&M Manual).

As considerable time had past since parties had last reviewed the application information, the NWB provided an additional thirty (30) days for review and comment. On or before the July 14, 2010 comment deadline, the NWB had received additional comments from EC and INAC.

Based upon the results of the detailed assessment, including consideration of any potential accidents, malfunctions, or impacts to water that the overall project might have in the area, the Board has decided to renew Licence No.NWB3CHE0308, and has issued Licence 3BM-CHE1013.

### **III. ISSUES**

#### Term of Licence

In accordance with Section 45 of the *Act*, the NWB may issue a licence for a term not exceeding twenty-five years. In determining an appropriate term of a water licence, the Board considers a number of factors, including the results of INAC site inspections and the compliance record of the Applicant.

INAC noted that the Hamlet applied for a water licence renewal for a period of ten (10) years. However, INAC recommended to the Board that a renewal of five (5) years would be more appropriate to determine compliance with the water licence requirements. EC also supported a shorter licence term for this renewal in order for the Hamlet to fulfill licence requirements and address compliance issues.

The Board agrees that a shorter licence term is appropriate in this case. However, the NWB is concerned with the amount of time it took the Hamlet to respond and address the issues identified in the Inspector's Reports and those that arose with the renewal application during the review period. The NWB further notes the overview of compliance issues that are described in the 2009 Inspector's Report.

The NWB does acknowledge that the plans prepared by Nunami Stantec and submitted as additional information for the renewal application do address most compliance issues. However at this time, there is no assurance that the plans will be implemented and that the Hamlet will take the corrective actions required to comply with all Licence conditions, including those related to monitoring and reporting. In addition, the current lack of sewage treatment infrastructure is a significant issue that the NWB must see resolved over the short term of the renewal Licence.

Therefore, in such cases where compliance issues have been a concern, the NWB has issued municipal licences for a term of two (2) years. However, given that considerable work is required to upgrade the wetland treatment area and that important monitoring needs to be undertaken to assess its performance, the NWB finds that a three (3) year Licence term is best in this case. The three-year Licence term is intended to provide the Licensee time to take immediate action towards implementing plans and achieving full compliance with all Licence requirements for its existing facilities and to carry out the required system up-grades. Upon submission of an application to renew this Licence, the Board fully expects the Hamlet to be in compliance with the Licence.

### Annual Report

Annual Reports were not submitted for most years of the previous licence term. Nunami Stantec provided Annual Reports for 2007, 2008 and 2009 as additional information. However, the annual report was incomplete with INAC noting the absence of monitoring data that should have been collected by the Hamlet.

The NWB would like to emphasize the requirement to produce an Annual Report for submission, not later than March 31<sup>st</sup> of the year following the calendar year being reported. The requirement to produce Annual Reports is to ensure that the NWB has an accurate and timely annual update of municipal activities during a calendar year. This information is maintained on the Public Registry and is available to interested parties upon request. A "*Standardized Form*



*for Annual Reporting*” is available for use from the NWB file transfer protocol (ftp) site under the Public Registry link below, or through the NWB Website at [www.nunavutwaterboard.org](http://www.nunavutwaterboard.org).

Link = <ftp://nunavutwaterboard.org/ADMINISTRATION/Standardized%20Forms/>

### Operational Plans

The Hamlet was required, as a condition of the previous licence, to submit operational and maintenance plans for the Sewage and Solid Waste facilities, as well as a spill contingency plan to deal with fuel spills, storage and transportation of wastes, etc. In its initial comments, INAC noted that no such plans had been submitted by the Hamlet during the previous Licence term. At the NWB’s request, the following plans were submitted during the review period:

- An Operations and Maintenance (O&M) Manual for Water, Sewage and Solid Waste Systems; and
- A Spill Contingency Plan (Section 6.2 of the O&M Manual).

The O&M Manual, inclusive of the Spill Contingency Plan, has been approved by the NWB with this licence renewal. However, please note that the correct contact information to be included in the Spill Contingency Plan for INAC personnel is Peter Kusugak – INAC Manager of Field Operations, phone: 867-975-4295, fax 867 975-6445. INAC recommended that the proponent add the INAC contact information in the reporting procedure of the spill plan and the NWB agrees.

With respect to the O&M Manual, EC noted that any changes to Water and Waste Disposal Facilities would require corresponding updates to the O&M manual. The Licensee is reminded of its responsibility, in accordance with Part B, Item 1(g) of the Licence, to ensure that the O&M Manual is updated as needed to reflect operational or technological changes, including changes to reflect Licence conditions. Plan revisions are to be submitted to the NWB with the Annual Report.

Finally, INAC noted from the 2007 and 2009 Annual Reports that spills had occurred. However the annual report failed to indicate the location of the spills. INAC requested that spill reporting include GPS coordinates of the spill location. This information should be provided at the time the spill is reported and in accordance with the approved Spill Contingency Plan, which includes the Spill Reporting Forms in Appendix H, the location and coordinates of spills must be reported.

### Water Use

The Hamlet of Chesterfield Inlet receives water from First Lake, which is pumped to a reservoir. Under the previous Licence, the Hamlet was authorized to withdraw 20,000 cubic metres of

water per year from First Lake. Based on the Annual Reports for 2007, 2008 and 2009, provided by Nunami Stantec, the NWB was able to determine that water use is within the limit set in the previous Licence.

There was no request to change the volume of water permitted and no comments or concerns were raised by parties with respect to water volume or source. The NWB has maintained the conditions for the source and volume of water previously authorized.

### Sewage

The lack of an engineered sewage treatment system was identified as a major issue by INAC in the Inspector's Reports. In its first written submission to the NWB, dated June 10, 2009 concerning the renewal application, INAC commented that the current method of sewage disposal and treatment is an unacceptable practice. INAC requested that an appropriate plan of action, with a firm timetable of implementation, be required to control solids and provide sewage retention.

Nunami Stantec was contracted by GN-CGS to undertake an evaluation of the capability of the existing tundra wetland to treat sewage and provided preliminary designs to upgrade the wetland area with two new holding cells to allow initial settling. Effluent will then exit through the holding cell berms at specified outlets to enter the tundra wetland, and specifically Pond 1. Flow then continues to travel through the wetland in the areas between bedrock outcrops. Two new flow diversion berms are proposed between the tundra wetland and Finger Bay. The two diversion berms would also channel the flow to create a new compliance point at the end of the wetland.

Nunami Stantec also noted an old decommissioned dump site adjacent to the wetland area. Both this old dump site and the current fenced solid waste disposal facility are located adjacent to the wetland. Concern was expressed that materials and/or leachate from former and existing solid waste sites may be entering the downstream portion of the wetland and negatively affecting the quality of the Effluent. Nunami Stantec proposed that a third berm be constructed within the solid waste disposal facility.

INAC and EC noted the planned upgrades in their submission and did not object to the plans. However, INAC recommended the following:

INAC recommends that the Hamlet submit to the Board, a Surveillance Network Program (SNP) for water quality monitoring at the holding cells and other relevant sites down gradient from the holding cells to verify that the holding cells and wetland treatment area are working as they were intended. This program should also include, but not be limited to, maps and GPS coordinates of the SNP water sampling sites (raw water, sewage effluent and landfill leachate)... INAC also recommends that the Hamlet ensure that the water bodies included in the wetland treatment area are not fish bearing.

EC provided similar advice by recommending that monitoring should be carried out at various points in the wetland. EC further recommended that a Sludge Management Plan be submitted for approval for the new holding cells. Nunami Stantec acknowledged the requirement to manage sludge noting that the sludge must be sampled and tested to ensure the disposal method selected is appropriate, safe and environmentally responsible. The requirement for a sludge management plan including options for disposal will be required prior to the removal and disposal of sludge from the retention cells.

Having considered the information provided by Nunami Stantec on behalf of the Hamlet, and the recommendations made by parties, the NWB has approved the upgrades to the Sewage Disposal Facility subject to the conditions of Part D, Item 4 and Part H, Item 6 of the Licence.

### Solid Waste

There were a number of issues identified with solid waste disposal in the Hamlet. Supporting information submitted with the application identified the occurrence of an old solid waste dump site and that it should be examined to determine the impact on the tundra wetland in terms of leachate generation.

INAC also identified the need for the Hamlet to become more diligent in its solid waste segregation practices at the existing landfill facility. INAC recommended that, to ensure public safety and limit contamination to the environment, the hazardous wastes and the bulky waste areas, should be completely fenced and have acceptable storage facilities for each waste. EC recommended that water that has accumulated within the hazardous waste storage area should be treated as hazardous waste and the decanting of snow or water from the area should proceed only if the discharge meets the requirements of Section 36(3) of the *Fisheries Act*.

INAC recommended that there be no open burning of plastics, wood treated with preservatives, electrical wire, Styrofoam, asbestos or painted wood to prevent the deposition into any surrounding waters of waste or toxic materials generated due to incomplete combustion and/or leachate from contaminated ash residues.

The NWB appreciates the recommendation made by parties and believes they are important for proper waste management and the preservation of water quality in the area. The NWB has incorporated the recommendations into Licence conditions.

### Modifications and Construction

For the construction of new, or modifications to existing licensed facilities, the NWB generally requires that final design reports, accompanied by stamped and signed “for construction drawings” be provided to the NWB for review and approval prior to the undertaking. This

provides assurance to the Board and interested persons that the proper engineering practices will be in place through all phases of construction and operation. In accordance with Part E, Item 1, construction design drawings stamped and signed by a qualified Engineer, will be required for the wetland system upgrades at least sixty (60) days prior to construction.

The NWB notes that access roads will be required to up-grade the wetland treatment area. However, as no plans for the road development were provided with the renewal application, an amendment must be applied for when the Licensee has sufficiently developed the route, and once engineered drawings for the access roads are available.

#### Abandonment, Restoration and Closure

The Licensee submitted an Abandonment and Restoration (A&R) Plan, prepared by Nunami Stantec, as Appendix C to the O&M Manual.

EC noted that the A&R Plan does not address the reclamation of hydrocarbon contaminated soils. Should there be a need for landfarming, the Licensee will be required to file a Licence amendment application with the Board.

Although an A&R Plan was provided, there are no current plans to abandon any of the existing water and waste disposal facilities operated by the Hamlet. Therefore, the NWB will keep the plan on file until such time as a particular facility requires decommissioning, at which point an update to the Plan with engineered closure drawings will be required.

The NWB has noted that there is an old sewage lagoon that is no longer in use. However, the A&R Plan does not address the facility's reclamation. The NWB has included in the Licence conditions, a requirement to provide a Plan for the abandonment and restoration of the old lagoon site, for review and approval by the Board.

Finally, the NWB also notes that an old landfill area has been decommissioned. The old landfill is located adjacent to the tundra wetland area used to treat sewage. Leachate from the site is entering the wetland and potentially affecting effluent quality. To address this issue the NWB is requiring that a geotechnical inspection be carried out of the old landfill and that the Licensee address any recommendations made by the geotechnical engineer.

#### Monitoring Program

INAC notes that the proponent failed to include in the Annual Reports for the years of 2007, 2008 and 2009 any monitoring data generated under Part H – Conditions Applying to the Monitoring Program. EC also noted that monitoring data has not been provided for the Hamlet's Sewage Treatment Facility. This is an area of non-compliance with the water Licence that the NWB anticipates will be improved upon over the three (3) year term of the renewed Licence.

The NWB expects that the Licensee will comply with the monitoring program requirements. In addition, as per INAC's recommendation, a monitoring program shall be established for the wetland treatment area to ensure that the holding cells and wetland treatment area are working as they are intended to.



## NUNAVUT WATER BOARD WATER LICENCE

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

### HAMLET OF CHESTERFIELD INLET

(Licensee)

P.O. BOX 10, CHESTERFIELD INLET, NUNAVUT X0B 0B0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water or dispose of waste for a period subject to restrictions and conditions contained within this Licence:

Licence Number/Type: 3BM-CHE1013 TYPE "B"

Water Management Area: NUNAVUT 06

Location: HAMLET OF CHESTERFIELD INLET, NUNAVUT

Classification: MUNICIPAL UNDERTAKING

Purpose: DIRECT WATER USE AND DEPOSIT OF WASTE

Quantity of Water use not  
to Exceed: TWENTY THOUSAND (20,000)  
CUBIC METRES PER YEAR

Date of Licence Issuance: OCTOBER 1, 2010

Expiry of Licence: SEPTEMBER 30, 2013

This Licence, issued and recorded at Gjoa Haven, Nunavut, includes and is subject to the annexed conditions.

Thomas Kabloona,  
Nunavut Water Board  
Chair

**PART A: SCOPE AND DEFINITIONS**

**1. Scope**

- a. This Licence allows for the use of water and the deposit of waste for municipal undertakings at the Hamlet of Chesterfield Inlet, Kivalliq Region, Nunavut (63°21' N; 90°42'W);
- b. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be subject to such requirements; and
- c. Compliance with the terms and conditions of this Licence does not absolve the Licensee from the responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

**2. Definitions**

In this Licence: **3BM-CHE1013**

**“Act”** means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

**“Amendment”** means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

**“Analyst”** means an Analyst designated by the Minister under Section 85 (1) of the *Act*;

**“Appurtenant undertaking”** means an undertaking in relation to which a use of waters or a deposit of waste is permitted by a licence issued by the Board;

**“Board”** means the Nunavut Water Board established under the *Nunavut Land Claims Agreement*;

**“Effluent”** means treated or untreated liquid waste material that is discharged into the environment from a structure such as the sewage lagoon, landfarm or a treatment plant;

**“Engineer”** means a professional engineer registered to practice in Nunavut in accordance with the *Engineering, Geological and Geophysical Act (Nunavut)* S.N.W.T. 1998, c.38, s.5;

**“Final Discharge Point”** in respect of an effluent, means an identifiable discharge point of a facility beyond which the operator of the facility no longer exercises control over the quality of the effluent. For Sewage, the Final Discharge Point is located at the end of the wetland at monitoring station CHE-4, where Effluent is channeled by two diversion berms.

**“Freeboard”** means the vertical distance between water line and the designed maximum operating height on the crest of a dam or dyke’s upstream slope;

**“Geotechnical Engineer”** means a professional engineer registered with the Association of Professional Engineers, Geologist and Geophysicists of Nunavut and whose principal field of specialization is with the engineering properties of earth materials in dealing with man-made structures and earthworks that will be built on a site. These can include shallow and deep foundations, retaining walls, dams, and embankments;

**“Grab Sample”** means a single water or wastewater sample taken at a time and place representative of the total discharge;

**“Greywater”** means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

**“Hazardous Waste”** means waste classified as “hazardous” by Nunavut Territorial or Federal legislation, or as “dangerous goods” under the *Transportation of Dangerous Goods Act*.

**“Inspector”** means an Inspector designated by the Minister under Section 85 (1) of the Act;

**“Licensee”** means the holder of this Licence;

**“Modification”** means an alteration to a physical work that introduces new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion, and changes to the operating system that are consistent with the terms of this Licence and do not require amendment,;



**“Monitoring Program”** means a monitoring program established to collect, analyze and report data on surface water and groundwater, Waste and Waste deposition, in order to assess impacts to the freshwater aquatic environment of an appurtenant undertaking;

**“Nunavut Land Claims Agreement” (NLCA)** means the *“Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada”*, including its preamble and schedules, and any amendments to that agreement made pursuant to it;

**“Sewage”** means all Toilet Wastes and Greywater;

**“Sewage Disposal Facilities”** comprises the wetland treatment area and engineered retention cells and diversion berms designed to contain and treat Sewage as described in the *Schematic Design Report, Tundra Wetland Sewage Treatment System Design*, January 9, 2009;

**“Sewage Sludge”** means the semi-solid sewage material which settles at the bottom of the retention cells;

**“Solid Waste Disposal Facilities”** comprises the area and associated structures designed to contain solid waste as described in the *Water, Sewage and Solid Waste Operation and Maintenance Manual, Chesterfield Inlet*, May 2010.

**“Toilet Wastes”** means all human excreta and associated products, but does not include Greywater;

**“Waste”** means, as defined in S.4 of the Act, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means;

**“Waste Disposal Facilities”** means all facilities designated for the disposal of waste, and includes the Sewage Disposal Facilities and Solid Waste Disposal Facilities; and

**“Water Supply Facilities”** comprises the intake infrastructure at First Lake and reservoir, as described in the *Water, Sewage and Solid Waste Operation and Maintenance Manual, Chesterfield Inlet*, May 2010;

**3. Enforcement**

- a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and
- c. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of waste by the Licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law;

**PART B: GENERAL CONDITIONS**

1. The Licensee shall file an Annual Report with the Board not later than March 31<sup>st</sup> of the year following the calendar year reported, which shall contain the following information:
  - a. tabular summaries of all data generated under the Monitoring Program;
  - b. the monthly and annual quantities in cubic metres of fresh water obtained from First Lake;
  - c. the monthly and annual quantities in cubic metres of all Effluent discharged;
  - d. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
  - e. a list of unauthorized discharges and summary of follow-up action taken;
  - f. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
  - g. Any addendum with updates or revisions for manuals and plans (i.e., *Operations and Maintenance Manual*) as required by changes in operation and/or technology;
  - h. a summary of any studies or reports requested by the Board that relate to water use and waste disposal or restoration, and a brief description of any future studies planned; and
  - i. any other details on water use or waste disposal requested by the Board by November 1<sup>st</sup> of the year being reported;
2. The Licensee shall comply with the Monitoring Program, Part H, described in this Licence, and any amendments to the Monitoring Program as may be made from time to time, pursuant to the conditions of this Licence.
3. The Monitoring Program and compliance dates specified in the Licence may be modified at the discretion of the Board in writing.

4. Meters, devices or other such methods as approved by the Board in writing, used for measuring the volumes of water used and waste discharged shall be installed, operated and maintained by the Licensee.
5. The Licensee shall maintain the necessary signs to appropriately identify the stations of the Monitoring Program. Signs are to be posted in the Official Languages of Nunavut, following confirmation of location by the Inspector.
6. The Licensee shall immediately report to the 24-Hour Spill Report Line (867-920-8130), any spills of Waste which are reported to or observed by the Licensee, within the municipal boundaries or in the areas of the Water Supply or Waste Disposal Facilities.
7. The Licensee shall ensure a copy of this Licence is maintained at the Municipal Office at all times. Any communication with respect to this Licence shall be made in writing to the attention of:
  - (a). **Manager of Licensing:**  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0  
Telephone: (867) 360-6338  
Fax: (867) 360-6369  
Email: [licensing@nunavutwaterboard.org](mailto:licensing@nunavutwaterboard.org)
  - (b). **Inspector Contact:**  
Water Resources Officer  
Nunavut District, Nunavut Region  
P.O. Box 100  
Iqaluit, NU X0A 0H0  
Telephone: (867) 975-4295  
Fax: (867) 979-6445
8. The Licensee shall submit one paper copy and one electronic copy of all reports, studies, and plans to the Board. Reports, plans or studies submitted to the Board by the Licensee shall include a detailed executive summary in both English and Inuktitut.
9. The Licensee shall ensure that all documents and correspondence submitted by the Licensee to the Board are received and acknowledged by the Manager of Licensing.
10. The Licensee shall, for all plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a plan if necessary

to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the plan.

11. The Licensee shall, for all plans submitted under this Licence, implement the plan as approved by the Board in writing.
12. Every plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and condition imposed upon approval of a plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a plan where appropriate.
13. This Licence is not assignable except as provided in Section 44 of the Act.

**PART C: CONDITIONS APPLYING TO WATER USE**

1. The Licensee shall obtain all fresh water from First Lake or as otherwise approved by the Board in writing.
2. The annual quantity of water used for all purposes shall not exceed twenty thousand (20,000) cubic metres.
3. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw water at a rate such that fish do not become impinged on the screen.
4. The Licensee shall not remove any material from below the ordinary high water mark of any water body unless otherwise approved by the Board in writing.
5. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
6. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into water.

**PART D: CONDITIONS APPLYING TO WASTE DISPOSAL**

1. The Licensee shall direct all Sewage to the Sewage Disposal Facilities.
2. The Licensee shall locate areas designated for waste disposal at a minimum distance of thirty one (31) metres from the ordinary high water mark of any water body such that the

quality, quantity or flow of water is not impaired, unless otherwise approved by the Board in writing.

3. All Effluent discharged from the Sewage Disposal Facilities at Monitoring Program Station CHE-4, shall not exceed the following Effluent quality limits:

<b>Parameter</b>	<b>Maximum Concentration of any Grab Sample</b>
BOD <sub>5</sub>	80 mg/L
Total Suspended Solids	100 mg/L
Fecal Coliforms	1 x 10 <sup>4</sup> CFU/100 mL
Oil and grease	No visible sheen
pH	between 6 and 9

4. The Licensee shall provide confirmation to the NWB, within ninety (90) days of Licence issuance, and following consultation with Fisheries and Oceans Canada, on the fish-bearing status of the wetland treatment area.
5. The Licensee shall maintain at all times, a freeboard of at least 1.0 metre, or as otherwise recommended by a Geotechnical Engineer and approved by the Board in writing, for all dams, dykes or other structures intended to contain, withhold, divert or retain water or wastes.
6. The Sewage Disposal Facilities shall be maintained and operated in such a manner as to prevent structural failure.
7. The Licensee shall provide at least ten (10) days notice in writing to an Inspector, of the intent to discharge effluent from the Sewage Disposal Facility.
8. The Licensee shall dispose of and permanently contain all solid wastes at the Solid Waste Disposal Facilities or as otherwise approved by the Board in writing.
9. The Licensee shall segregate and store all hazardous materials and hazardous waste within the Solid Waste Disposal Facilities in a manner to prevent the deposit of deleterious substances into water, until such a time that the materials can be removed for proper disposal at a licensed facility.
10. The Licensee shall implement measures to ensure leachate from the Solid Waste Disposal Facility and hazardous waste storage area do not enter water.

**PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION**

1. The Licensee shall submit to the Board for approval in writing, construction design drawings stamped and signed by a qualified Engineer, at least sixty (60) days prior to the construction of any dams, dykes or structures intended to contain, withhold, divert or retain water or wastes.
2. The Licensee may, without written approval from the Board, carry out modifications to the Water Supply and Waste Disposal Facilities provided that such modifications are consistent with the terms of this Licence and the following requirements are met:
  - a. the Licensee has notified the Board in writing of such proposed modifications at least sixty (60) days prior to beginning the modifications;
  - b. these modifications do not place the Licensee in contravention of the Licence or the Act;
  - c. the Board has not, during the sixty (60) days following notification of the proposed modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
  - d. the Board has not rejected the proposed modifications.
3. Modifications for which all of the conditions in Part E, Item 2 have not been met, may be carried out only with approval from the Board in writing.
4. The Licensee shall provide to the NWB for review, as-built plans and drawings, stamped and signed by an Engineer, within ninety (90) days of completion of construction and modifications or, if already constructed, as is the case for the Sewage Lagoon, within ninety (90) days of issuance of this Licence.
5. All construction and modification activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage.
6. The Licensee shall implement and maintain sediment and erosion control measures prior to and during activities carried out under this Part, to prevent the release of sediment and minimize erosion.

**PART F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE**

1. The Plan entitled 'Water, Sewage and Solid Waste Operations and Maintenance Manual, Chesterfield Inlet Nunavut' dated May, 2010 that was submitted as additional information with the Application, has been approved with this Licence.

2. The Licensee shall submit to the Board for approval, at least three (3) months prior to the removal of sludge from the Sewage Disposal Facilities, a Sewage Sludge Management Plan with options for disposal based on sludge sampling characterization results.
3. An inspection of all engineered facilities related to the management of water and waste, including the decommissioned landfill, shall be carried out annually in July or August by a Geotechnical Engineer. The engineer's report shall be submitted to the Board for review, within sixty (60) days of the inspection, and is to include a cover letter from the Licensee outlining an implementation plan addressing the Geotechnical Engineer's recommendations.
4. The Licensee shall perform more frequent inspections of the engineered facilities at the request of an Inspector.
5. If, during the period of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:
  - a. employ the appropriate contingency measures within the Spill Contingency Plan, approved for the Hamlet of Chesterfield Inlet;
  - b. report the incident immediately via the 24-Hour Spill Reporting Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
  - c. submit to the Inspector, a detailed report, not later than thirty (30) days after initially reporting the event, that provides the necessary information on the location (including the GPS coordinates), initial response action, remediation/clean-up, status of response (ongoing, complete), proposed disposal options for dealing with contaminated materials and preventative measures to be implemented.

**PART G: CONDITIONS APPLYING TO ABANDONMENT, RESTORATION AND CLOSURE**

1. The Plan entitled *Abandonment and Restoration Plan for Water, Sewage and Solid Waste Facilities, Chesterfield Inlet Nunavut*, dated May 2010 that was submitted as additional information with the Application, has been approved with this Licence.
2. The Licensee shall submit to the Board for approval in writing, within six (6) months of Licence issuance, an *Abandonment and Restoration Plan* for the old sewage lagoon.
3. The Licensee shall submit to the Board for approval in writing, revised Abandonment and Restoration Plans containing engineered closure design drawings, at least six (6) months

prior to abandoning any facilities or upon submission of the final design drawings for the construction of new facilities to replace existing ones.

4. The Licensee shall complete the restoration work within the time schedule specified in the plan approved under this Part, or as subsequently revised and approved by the Board in writing.
5. All disturbed areas shall be stabilized and re-vegetated as required, upon completion of work and restored as practically as possible to a pre-disturbed state.

#### **PART H: CONDITIONS APPLYING TO THE MONITORING PROGRAM**

1. The Licensee shall maintain Monitoring Program Stations at the following locations:

<b>Station Number</b>	<b>Description</b>	<b>Status</b>
CHE-1	Raw water supply intake at First Lake	Active (Volume)
CHE-2	Runoff from the Solid Waste Disposal Facilities.	Active
CHE-3	Effluent from the sewage detention cells.	New
CHE-4	Final Discharge Point for Effluent from the wetland treatment area prior to Finger Bay.	Active

2. The Licensee shall measure and record, in cubic metres, the monthly and annual quantities of water pumped at Monitoring Program Station CHE-1, for all purposes.
3. The Licensee shall sample monthly at Monitoring Program Station CHE-2 and CHE-4, during periods of observed flow and annual discharges, to be analyzed for the following parameters:

Biochemical Oxygen Demand (BOD <sub>5</sub> )	Fecal Coliforms
Total Suspended Solids	pH
Conductivity	Nitrate-Nitrite
Oil and Grease (visual)	Total Phenols
Magnesium	Calcium
Sodium	Potassium
Chloride	Sulphate
Total Hardness	Total Alkalinity



Ammonia Nitrogen	Total Zinc
Total Cadmium	Total Iron
Total Cobalt	Total Manganese
Total Chromium	Total Nickel
Total Copper	Total Lead
Total Aluminum	Total Arsenic

4. The Licensee shall carry out inspections at Monitoring Program Station CHE-2 and CHE-4 weekly from May to August inclusive, to determine effluent or water flow in order to fulfill the monitoring requirements of Part H, Item 3. A record of inspections shall be retained and made available to an Inspector upon request.
5. The Licensee shall sample monthly at Monitoring Program Station CHE-3 during periods of flow to determine the quality of Effluent release from the detention cells prior to entering the wetland treatment area. Samples shall be analyzed for the parameters listed in Part D, Item 3.
6. The Licensee shall submit to the Board for approval, within sixty (60) days of Licence issuance, a detailed monitoring strategy for water quality monitoring at the holding cells and other relevant sites down gradient from the holding cells to verify that the holding cells and wetland treatment area are working as they are intended.
7. Additional monitoring stations, sampling and analysis may be requested by an Inspector.
8. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board in writing.
9. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025 for all required analyses. The accreditation shall be current and in good standing.
10. The Licensee shall submit to the Board upon approval by an Analyst, for inclusion with the O&M Manual, approved under Part F, Item 1, a Quality Assurance/Quality Control (QA/QC) Plan. The Plan shall include up to date sampling methods to all applicable standards, acceptable to an accredited laboratory as required by Part H, Item 8 and Part H, Item 9. The Plan shall include a covering letter from the accredited laboratory and Analyst, confirming acceptance of the Plan for analyses to be performed under this Licence.
11. The Licensee shall annually review the Quality Assurance/Quality Control Plan in Part H, Item 10 and modify it as necessary. Proposed modifications shall be submitted to the accredited laboratory for approval prior to submission to the Board.

12. The Licensee shall include all of the data and information required by the Monitoring Program complete with an interpretation and discussion of the results, in the Licensee's Annual Report, as required *per* Part B, Item 1, or as requested by an Inspector.
13. Modifications to the Monitoring Program may be made only upon written approval of the Board.