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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: 3BM-IGL0911

July 10, 2009

Brian Flemming, SAO
Hamlet of Igloolik
Baffin Region
P.O. Box 30
Igloolik, NU X0A 0L0
Email: Igloolik@magma.ca

RE: NWB Licence No. 3BM-IGL0911

Dear Mr. Flemming;

Please find attached Licence No. 3BM-IGL0911 issued to the Hamlet of Igloolik 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 will be in contravention of the *Nunavut Land Claims Agreement* (NLCA) and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA). However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least three 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 thirty (30) days is required from 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 received from interested persons on issues identified. The NWB notes that, among others, INAC submitted comments on the open burning of plastics, and other household materials reminding the Licensee of the GN Position paper “Municipal Solid Wastes Suitable for Open Burning”. This information is attached for your consideration.¹

Sincerely,



Thomas Kabloona
Nunavut Water Board
Chair

TK/dc/dh/pb

Enclosure: Licence No. 3BM-IGL0911
Comments CLEY, GN-DOE, INAC, EC

cc: Bhabesh Roy, broy@gov.nu.ca
Qikiqtani Distribution List

¹ Government of Nunavut Department of Environment (GN-DoE), January 8, 2009; Indian and Northern Affairs Canada (INAC), January 9, 2009; Environment Canada (EC), January 9, 2009; Government of Nunavut Department of Culture, Language, Elders and Youth (GN-CLEY), January 9, 2009



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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

DECISION

LICENCE NUMBER: 3BM-IGL0911

This is the decision of the Nunavut Water Board (NWB) with respect to an application for a Licence renewal received on August 5, 2008, made by:

HAMLET OF IGLOOLIK

to allow for the use of water and disposal of waste for the Hamlet of Igloolik, located within the Qikiqtani region of Nunavut. With respect to this application, the NWB gave notice to the public on December 9, 2008 that the Hamlet had filed an application for a water licence 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 3BM-IGL0911 be issued subject to the terms and conditions contained therein. (Motion #: 2009-05-L12)

SIGNED this 10th day of July 2009 at Gjoa Haven, NU.

Thomas Kabloona
Nunavut Water Board
Chair

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I. INTRODUCTION

The Hamlet of Igloolik has an estimated population of approximately 1,600 and is located at the coordinates of 69°23'N latitude and 81°46'W longitude, on Igloolik Island in the northwest region of the Foxe Basin within the Qikiqtani Region of Nunavut. Igloolik is located within a zone of continuous permafrost and the island is composed of a dolomitic conglomerate, with sand stone, dolostone and siltstone. The island is at a very low elevation with numerous ponds and an extensive tidal foreshore.

Existing water use and Waste Disposal Facilities include a freshwater intake pump, reservoir, truck fill station, a three cell sewage exfiltration lagoon system with a wetland, an older fourth sewage cell constructed prior to the three cell lagoon system, domestic landfill and metallic waste landfill.

II. PROCEDURAL HISTORY

The original Licence NWB3IGL9803 was issued by the Board on October 21, 1998 following a public hearing in Igloolik and was valid until September 1, 2003. On February 5, 2003, an application for renewal of Licence NWB3IGL8903 was received, prepared by Ferguson Simek Clark Environmental Consultants (Yellowknife) on behalf of the Hamlet of Igloolik. The NWB issued Licence 3BM-IGL0308 on September 1, 2003, to the Hamlet of Igloolik allowing for the use of water and disposal of waste.

The current municipal Water Licence expired on August 31, 2008. The Government of Nunavut Department of Community and Government Services (GN-CGS), on behalf of the Hamlet, submitted an application for water licence renewal to the NWB, which was received on August 6, 2008. Following a preliminary review of the application, the NWB submitted a letter to the GN-CGS on August 25, 2008 requesting additional information and clarification on several issues. A response was received on September 2, 2009 and the NWB concluded then, that the application met the requirements of section 48(1) of the *Nunavut Waters and Surface Rights Tribunal Act* (the Act) and advised the Applicant and distribution list accordingly on December 9, 2008.

The scope of the renewal application included ongoing operation and potential upgrading of the existing Sewage Disposal Facility and Landfill.

The Nunavut Water Board publicly posted notice of this application, in accordance with Section 55.1 of the Act and Article 13 of the *Nunavut Land Claims Agreement* (NLCA), on December 9, 2008. The assessment process included the referral of the application to a variety of Federal, Territorial and local organizations for their review and comment.

As no public concern was expressed, the NWB waived the requirement to hold a public hearing and proceeded with the application process.

During this referral period, the NWB received comments on the application from Indian and Northern Affairs Canada (INAC), Environment Canada (EC), Government of Nunavut Department of Environment (GN-DoE) and the Government of Nunavut Community Language Elders and Youth (GN-CLEY).

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 approved the application and has issued Licence 3BM-IGL0911.

III. ISSUES

Type of Licence

Based on Statistics Canada as a source, the 2006 census population of Igloolik was 1538.² Schedule VI³ of the *Regulations* indicates that a trigger level population of 2000 or more would be required for an application to be considered a Type A licence. Based on the 2001 - 2006 growth rate, the population of Igloolik should not exceed 2000 until after the expiry of the current Licence and therefore, the classification is to remain as a Municipal Type “B” licence. No concerns were raised by commenting parties pertaining to the classification of the Licence.

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, but not limited to; the results of INAC site inspections and the corresponding compliance record of the Applicant as well as intervener comments provided during the application review process. In addition, as part of the application, in a letter dated September 2, 2008 from Mr. Bhabesh Roy, Municipal Planning Engineer, Government of Nunavut, Baffin Region, the failure to provide submissions required by the previous Licence was acknowledged it was requested that a Licence term of ‘probably less than five years’ would be suitable to allow the Hamlet time to satisfy the conditions of the Licence.

In review of the comments received on the application, the NWB has noted that INAC refers to a 2008 inspection report. The NWB is not in receipt of a 2008 inspection report and has therefore not taken into consideration the contents of any such report or the information provided that refers to this report during the renewal process. The NWB has however, referred back to previous inspection reports and the review of the application information and technical review of the 2003 licence renewal, with the following as a summary.

² Statistics Canada 2006 Census <http://www12.statcan.ca/>

³ “any deposit of waste by means of a sewage collection or treatment system serving a population of 2000 or more.”

In the INAC submission, points of compliance were highlighted with respect to previous inspections and the 2003 renewal information.

The inspection of July 12, 2001 identified a number of issues that were brought forward into the 2003 approved water licence for the Hamlet. These were as follows:

- a. The Licensee failed to produce Annual Reports, as required by Part B, Item 1 of the license for the years 1998, 1999 and 2000;
- b. The Hamlet has failed to produce an Operations and Maintenance (O&M) Plan as required by Part G, Item 1 of NWB 3IGL9803; and
- c. The Hamlet has failed to comply with the Part D, Item 6 of the water licence, by failing to maintain the sewage lagoon in such a manner as to prevent structural failure.

A follow-up inspection was carried out on August 21, 2002, identifying the following items of concern:

- a. Sewage Disposal - Some operational issues with two of the sewage cells with respect to seepage and cell contents were required to be transferred to the third cell to provide adequate exfiltration through the system;
- b. Solid Waste Disposal – recommended fencing to maintain refuse within the disposal area; and
- c. General – posting of signs for the Hamlet facilities and the stations of the monitoring program were not in place. The Inspector indicated that assistance would be provided on the next visit to locate the proper sites.

From the 2003 Licence renewal review, INAC summarized issues of concern that were still outstanding with the application for renewal in 2008. These were as follows:

- a. That the Hamlet develop appropriate Operation and Maintenance Plans and Spill Contingency Plans relevant to sewage disposal operations;
- b. That the Hamlet develop appropriate Operation and Maintenance Plans and Spill Contingency Plans relevant to solid waste disposal operations; and
- c. That the Hamlet install proper perimeter fencing around the solid waste disposal area (to prevent the deposit of wind-blown wastes and to control unauthorized access).

A number of these issues remain outstanding, comprised mainly of the requirement for the submission of plans and filing of annual reports.

In the submission by GN-DoE, it was recommended that the renewal be granted for a short period of time, allowing the Hamlet to submit all the necessary information for review at a later date and prior to a renewal application.

In review of the information available during the renewal process, the NWB has determined that a Licence term of approximately two (2) years for the renewed Licence is appropriate. The decision for a short duration was based on issues with submitting information required by the Licence and is intended to send a clear message to the Hamlet and regulatory authorities that the Board will not passively encourage the Hamlet's failure to comply with the Licence conditions and associated legal requirements. The Board anticipates that the Hamlet will take immediate steps to come into full compliance with the Licence requirements for its existing facilities and submission of the required plans and annual reports in accordance with the Licence. Upon submission of an application by the Hamlet for renewal of the Licence in approximately twenty (20) months, the Board expects the Hamlet to be in full compliance with the licence. This short duration also permits the Board to increase its level of confidence that all water and waste disposal facilities are operating as they should.

Annual Report

The NWB has imposed on the Licensee, the requirement to produce an Annual Report. These Reports are for the purpose of ensuring that the NWB has an accurate 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 to be used by the Licensee and is available from the NWB file transfer protocol (FTP) site under the Public Registry link at the NWB Website. Additional information may be submitted as required.

(<ftp://nunavutwaterboard.org/ADMINISTRATION/Standardized%20Forms/>).

Operational Plans

Appropriate Plans need to be developed to the satisfaction of the NWB for the operation and maintenance of the facilities, the protection of the environment with regard to potential spills through day-to-day operations, and abandonment and restoration of various sites.

It has been noted that the Licensee has not submitted an Operations and Maintenance (O&M) Plan to the NWB as required under the previous licence. The renewed Licence has therefore, continued to include the requirement to provide an O&M Manual to the NWB within a set timeframe of issuance of the Licence.

In review of the application and the comments received from interested parties, comments were received with respect to the Hamlet's submission of O&M Plans.

INAC indicated that prior to issuing a renewal licence the NWB should require the licensee to submit any outstanding Operational Plans. This includes plans for Operation and Maintenance of the Solid Waste Management and Sewage Disposal Areas, Abandonment and Restoration and Spill Contingency. The requirement to submit

applicable design drawings is also important. Provided as an alternative, the requirement of such Plans could be submitted within three (3) months of the issuance of any renewal.

Environment Canada provided comments on the Operations and Maintenance Manual (or Plan) and that it should also be submitted for approval as a condition of the water licence.

GN-DoE had indicated that the information needed to properly review the water licence application from the Hamlet is missing. This includes, but is not limited to the following: spill contingency plan, operation and maintenance plans, designs and signed engineering drawings, and monitoring plans.

Taking into account the review of the application and comments received, the O&M Manual to be submitted is to include the following, in accordance with Part F, Item 1 of the Licence:

- a. *Updates to the Water Storage and Distribution Facility Operation and Maintenance (O&M) Plan;*
- b. *Sewage Disposal Facility Operation and Maintenance (O&M) Plan;*
- c. *Sewage Sludge Management Plan;*
- d. *Solid Waste Disposal Facility Operation and Maintenance (O&M) Plan;*
- e. *Spill Contingency Plan; and*
- f. *Monitoring Program Quality Assurance/Quality Control Plan.*

The purpose of the O&M Manual noted above is to assist Hamlet staff in carrying out the procedures relating to their water distribution and waste disposal facilities. The O&M Manual should demonstrate to the NWB that the Hamlet is capable of operating and maintaining the infrastructure related to water use and waste disposal to meet the requirements of the Licence. The O&M Manual should be based, at a minimum on the various NWB-approved guidelines available (i.e. *Guidelines for the Preparation of an Operations and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories*, Duong and Kent, 1996) and other regulatory guidelines as deemed appropriate.

Water Use

The Hamlet of Igloolik currently obtains its potable water from Airstrip Lake and South Lake to annually supply a reservoir with a capacity of 65,000 cubic metres. Water is withdrawn during the months of August and September with a maximum authorized water use quantity of 70,000 cubic metres annually. No concerns were raised by the parties in their written submissions as to the amount of water required by the Hamlet, the manner in which it is obtained or in the manner in which this water will be used. The NWB has renewed the terms and conditions associated with water use by the Hamlet accordingly.

Sewage

The Hamlet of Igloolik currently provides trucked sewage services for the Community's

residents, businesses and institutions. Comments relevant to sewage disposal operations in the Hamlet were provided by EC and INAC. Concerns were raised by the parties on the ability to conduct a proper review given the provided information and the potential for the sewage lagoons to fail.

The NWB has added a requirement for a geotechnical inspection of the facilities to be carried out on an annual basis by a qualified engineer. This condition is consistent with other water licences issued in Nunavut.

Finally, as part of the Sewage Disposal Facility O&M Plan, the NWB requires that the Licensee include procedures and frequencies of inspections to be carried out to verify when there is flow from the Sewage Disposal Facility. Visual inspections to verify flow from the Sewage Disposal Facility are required to ensure that the monitoring program under Part D, Item 2 of the Licence is initiated at the appropriate time and that the Inspector is notified upon its commencement.

Solid Waste

The development of an O&M Plan for the Solid Waste Disposal Facilities is required as part of the overall O&M Manual discussed above. The O&M Plan for the Solid Waste Disposal Facilities should set out procedures for the segregation, storage and eventual removal for disposal of hazardous wastes, including waste oil, and should also address procedures for the incineration of solid waste and runoff management.

Part D, Item 8 requires the control of wind-blown litter at the Solid Waste Disposal Facility. Comments were received regarding the solid waste disposal facility, and included a recommendation for the installation of a perimeter fence to prevent the airborne deposit of waste into water.

Abandonment and Restoration

To ensure that all existing end-of-life facilities are reclaimed in an appropriate manner, the NWB requires Licensees to submit an *Abandonment and Restoration Plan*. This Plan is to be submitted for approval of the Board in writing at least six (6) months prior to final closure of any licensed facility or, upon the submission of final design drawings for the construction of new facilities to replace existing ones. The requirements for the Plan are outlined in Part G, Item 1 of this Licence.



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 IGLOOLIK

(Licensee)

P.O. BOX 30, IGLOOLIK, NU X0A 0L0

(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-IGL0911 TYPE "B"

Water Management Area: NUNAVUT 04

Location: HAMLET OF IGLOOLIK,
QIKIQTANI REGION, NUNAVUT

Classification: MUNICIPAL UNDERTAKING

Purpose: DIRECT WATER USE AND DEPOSIT OF WASTE

Quantity of Water use not
to Exceed: SEVENTY THOUSAND (70,000)
CUBIC METRES ANNUALLY

Date of Licence Issuance: JULY 10, 2009

Expiry of Licence: JULY 31, 2011

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

This Licence allows for the use of water and the disposal of waste for municipal undertakings at the Hamlet of Igloolik, Qikiqtani Region, Nunavut (69°23'N and 81°46'W).

- a. 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
- b. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

In this Licence: **3BM-IGL0911**

“**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;

“**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;

“**Average Concentration**” means the arithmetic mean of the last four consecutive analytical results for composite or grab samples collected from the monitoring stations identified in Part H;

“**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 a settling pond 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;

“**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 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;

“**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 data on surface water and groundwater quality 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;

“Regulations” means the *Northwest Territories Water Regulations SOR/93-303 8 June, 1993*;

“Sewage” means all toilet wastes and greywater;

“Sewage Disposal Facilities” comprises the three cell exfiltration lagoon system and the previous single cell lagoon designed to contain sewage as described in the Igloolik Water License Application filed by the Applicant on February 5, 2003.

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

“Solid Waste Disposal Facilities” comprises the area and associated structures designed to contain solid waste (landfill site and bulky metal wastes area) as described in the Application for Water Licence filed by the Applicant on February 5, 2003;

“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 the Solid Waste Disposal Facilities, as described in the Application for Water Licence filed by the Applicant on February 5, 2003; and

“Water Supply Facilities” comprises the Hamlet reservoir and associated intake infrastructure at Airport Lake and South Lake, as described in the Application for Water Licence filed by the Applicant on February 5, 2003.

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 31st of the year following the calendar year reported which shall contain the following information:
 - a. an executive summary as required by Part B, Item 8;
 - b. tabular summaries of all data generated under the “Monitoring Program”;
 - b. the monthly and annual quantities in cubic metres of fresh water obtained at the Water Supply Facilities;
 - c. the monthly and annual quantities in cubic metres of each and all waste discharged;
 - d. a summary of modifications and/or major maintenance work carried out on the Water Supply Facilities and Sewage Disposal Facility and Solid Waste Facility, 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 1st of the year being reported.
2. The Licensee shall comply with the “Monitoring Program” 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.
4. Meters, devices or other such methods 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 identify the Water Supply Facilities, the Waste Disposal Facilities and the stations of the “Monitoring Program.” All signage postings shall be in the Official Languages of Nunavut.
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
 - (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 or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut.
9. The Licensee shall ensure that all document(s) 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 assignable as provided in Section 44 of the Act.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all fresh water from South Lake and Airport Lake using the Water Supply Facilities, to be stored in the Hamlet reservoir, or as otherwise approved by the Board in writing.
2. The annual quantity of water used for all purposes shall not exceed 70,000 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 Facility or as otherwise approved by the Board in writing.
2. The Licensee shall provide notice to an Inspector annually when flow is observed from the sewage disposal facility and upon commencing the monitoring program at Monitoring Program Station IGL-4.
3. All Effluent discharged from the Sewage Disposal Facility at Monitoring Program Station IGL-4 shall meet the following Effluent quality standards:

Parameter	Maximum Concentration of any Grab Sample
BOD ₅	120 mg/L
Total Suspended Solids	180 mg/L
Fecal Coliforms	1 x 10 ⁶ CFU/100 mL
Oil and grease	No visible sheen
pH	between 6 and 9

4. The Licensee shall maintain at all times, a freeboard of at least 1.0 metre, or as recommended by a qualified geotechnical engineer and as approved by the Board in writing, for all dams, dykes or other structures intended to contain, withhold, divert or retain water or wastes.
5. The Sewage Disposal Facility shall be maintained and operated in such a manner as to prevent structural failure.
6. 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.
7. The Licensee shall segregate and store all hazardous materials and/or hazardous waste within the Solid Waste Disposal Facilities in a manner as to prevent the deposit of deleterious substances into any water until such a time as proper disposal arrangements are made.
8. The Licensee shall implement measures to control wind-blown litter at the Solid Waste Disposal Facility.
9. The Licensee shall implement measures to ensure leachate or runoff from the Solid Waste Disposal Facilities does not enter water

PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION

1. The Licensee shall submit to the Board for written approval, construction design drawings stamped by a qualified engineer registered in Nunavut, 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 referred to in Part E, Item 2, have not been met may be carried out only with written approval from the Board. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.
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.
5. All 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 sediment and erosion control measures prior to and during all 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 Licensee shall submit to the Board for approval, within ninety (90) days of issuance of the Licence, an Operations and Maintenance Manual prepared where appropriate, in accordance with the *“Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories; 1996”*. The Manual shall take into consideration the comments received during the application review process and shall contain the following plans:
 - a. *Updates to the Water Distribution Facility Operation and Maintenance (O&M) Plan (for review);*
 - b. *Sewage Disposal Facility Operation and Maintenance (O&M) Plan;*
 - c. *Sewage Sludge Management Plan;*
 - d. *Solid Waste Disposal Facility Operation and Maintenance (O&M) Plan;*
 - e. *Spill Contingency Plan; and*
 - f. *Monitoring Program Quality Assurance/Quality Control Plan (QA/QC Plan).*
2. The Licensee shall review the O&M Manual referred to in Part F, Item 1 as required by changes in operation and/or technology and modify accordingly. Revisions are to be submitted in the form of an Addendum to be included with the Annual Report.
3. An inspection of all engineered facilities related to the management of water and waste shall be carried out annually in July or August by a Geotechnical Engineer. The engineer's report shall be submitted to the Board within sixty (60) days of the inspection, including a covering letter from the Licensee outlining an implementation plan addressing each of the 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 as approved under an approved Operation and Maintenance Manual for the Hamlet of Igloolik;
 - b. report the incident immediately via the 24-Hour Spill Reporting Line at (867) 920-8130 and to the INAC Manager of Field Operations at (867) 975-4295; and
 - c. submit to the Inspector, a detailed report on each occurrence, 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 AND RESTORATION

1. The Licensee shall submit to the Board for approval in writing, an *Abandonment and Restoration Plan* 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. Where applicable, the Plan shall include information on the following:
 - a. water intake facilities;
 - b. the water treatment and waste disposal sites and facilities;
 - c. petroleum and chemical storage areas;
 - d. any site affected by waste spills;
 - e. leachate prevention;
 - f. an implementation schedule;
 - g. maps delineating all disturbed areas, and site facilities;
 - h. consideration of altered drainage patterns;
 - i. type and source of cover materials;
 - j. future area use;
 - k. hazardous wastes; and
 - l. a proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment.
2. The Licensee shall complete the restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.
3. 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:

Monitoring Program Station Number	Description	Status
IGL-1	Raw water supply intake at South Lake and Airport Lake	Active (Volume)
IGL-2	Runoff from Solid Waste Disposal Facility	Active (Water Quality)
IGL-3	Raw Sewage at discharge point into the Sewage Disposal Facility	Not Active
IGL-4	Final control point from Sewage Disposal Facility	Active (Water Quality)
IGL-5	Final Effluent Discharge Point prior entering Foxe Basin	New (Water Quality)

2. The Licensee shall measure and record, in cubic metres, the monthly and annual quantities of water pumped at Monitoring Program Station IGL-1, for all purposes.
3. The Licensee shall sample at Monitoring Program Stations IGL-4 and IGL-5 upon providing notice to the inspector and every four weeks thereafter when flow is observed. Samples shall be analyzed for the following parameters:

Biochemical Oxygen Demand – BOD ₅	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
Total Mercury	Total Organic Carbon (TOC)
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	

4. The Licensee shall sample at Monitoring Program Station IGL-2 once annually during periods of runoff or seepage. Samples shall be analyzed for the parameters under Part H, Item 3.

5. The Licensee shall measure and record the annual quantities of sewage solids removed from the Sewage Disposal Facility. Details of the protocol for monitoring quantities of sewage sludge removed from the Sewage Disposal Facility shall be provided in the *Sewage Sludge Management Plan*, as part of the O&M Manual.
6. If, during the term of this Licence, additional Final Discharge Points are identified, the Licensee shall submit, along with the Annual Report, information including:
 - a. Plans, specifications, geographic coordinates and a general description of each Final Discharge Point; and
 - b. A description of how each Final Discharge Point is designed and maintained, if required.
7. 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.
8. All analyses shall be performed by a laboratory certified by the Canadian Association of Environmental Analytical Laboratories (CAEAL).
9. The Licensee shall submit to the Board upon approval by an analyst, for inclusion with the O&M Manual, required under Part F, Item 1(f), 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 7 and Part H, Item 8. 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.
10. The Licensee shall annually review the Quality Assurance/Quality Control Plan in Part H, Item 9 and modify the Plan as necessary. Proposed modifications shall be submitted to the accredited laboratory for approval.
11. The Licensee shall include all of the data and information required by the “Monitoring Program” in the Licensee's Annual Report, as required *per* Part B, Item 1, or as requested by an Inspector.
12. Modifications to the Monitoring Program may be made only upon written approval from the Board.