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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: 3BM-PAN0810

August 13, 2008

Mr. Ron Mongeau
Senior Administrative Officer
Hamlet of Pangnirtung
Box 253
Pangnirtung, NU
X0A 0R0
Email: pang_sao@qiniq.com
BRoy@gov.nu.ca

RE: NWB Licence No. 3BM-PAN0810

Dear Mr. Mongeau:

Please find attached Licence No. 3BM-PAN0810 issued to the Hamlet of Pangnirtung 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* (NWNSTRTA). 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. An application for amendment will be required for the construction of the proposed new solid waste disposal facility. 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 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. This information is attached for your consideration.

Sincerely,

A handwritten signature in dark ink, appearing to read 'T. Kabloona', with a stylized, flowing script.

Thomas Kabloona
A/Chief Executive Officer

TK/tla/sl

Enclosure: Licence No. 3BM-PAN0810
Comments from EC, GN-DoE and INAC

cc: Qikiqtani Distribution List



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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

DECISION

LICENCE NUMBER: 3BM-PAN0810

This is the decision of the Nunavut Water Board (NWB) with respect to an application for a Licence renewal originally received November 20, 2007, made by:

HAMLET OF PANGNIRTUNG

to allow for the use of water and disposal of waste for the Hamlet of Pangnirtung, located within the Qikiqtani 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 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* (NWSRTA), decided to waive the requirement to hold a public hearing and determined that:

Licence Number 3BM-PAN0810 be issued subject to the terms and conditions contained therein. (Motion #: 2008-1404-L16)

SIGNED this 8th day of August, 2008 at Gjoa Haven, NU.

Thomas Kabloona
Acting Chief Executive Officer

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I. BACKGROUND

The Hamlet of Pangnirtung has a population of approximately 1,700 people and is located at the coordinates of 62°10'N latitude and 92°36'W longitude, on the eastern shore of Baffin Island within the Qikiqtani region of Nunavut.

Water for municipal use is pumped from the Duval River. Existing waste disposal facilities include a Waste Water Treatment Plant (WWTP) built in 2003 that has been modified from a rotating biological contactor to an activated sludge system. Solid waste from the Hamlet is currently disposed of in a landfill located approximately 800 metres from the edge of the Hamlet. The existing solid waste site has been determined to be inappropriately sited due to ecological concerns, odour and windblown litter, poorly operated and maintained, and is nearing its life capacity.

II. PROCEDURAL HISTORY

The NWB issued a municipal water licence to the Hamlet of Pangnirtung on December 1, 2002, to allow for the use of water and disposal of waste. The municipal water licence expired on November 30, 2007. The Hamlet of Pangnirtung, in conjunction with the Government of Nunavut Department of Community and Government Services (CGS), submitted an application for water licence renewal to the NWB on November 20, 2007. Following a preliminary review of the application, the NWB concluded that it 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 January 8, 2008.

Information contained in the November 20, 2007 submission and distributed for review included:

- Application cover letter;
- Application summary in English and Inuktitut;
- NWB Licence renewal application;
- Pangnirtung Waste Water Treatment Plant: Comprehensive Performance Evaluation *Draft Final Report* Pangnirtung, NU, Dillon Consulting Limited, August 2007;
- Feasibility Study on Solid Waste Management in Pangnirtung, NU, Dillon Consulting Limited, September 2007; and
- Pangnirtung public meeting sign-in sheet.

The scope of the renewal application included water use, ongoing operation of the existing WWTP and operation of the existing Solid Waste Disposal Facility. In its application, the Licensee also advised the NWB of numerous short and long-term plans to improve the function of the WWTP and the proposed future construction of a new solid waste disposal facility.

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 January 8,

2008. This assessment process included the referral of the application to a variety of Federal, Territorial and local organizations for their review and comment.

No public concern was expressed during this review, therefore the NWB waived the requirement to hold a public hearing and proceeded with the application process.

The NWB received comments on the application from interested parties including Indian and Northern Affairs Canada (INAC), Environment Canada (EC), and the Government of Nunavut Department of Environment (GN-DOE) on or prior to February 15, 2008. The review identified a number of issues with the Application and the file in general that needed to be addressed by the Licensee prior to the NWB making a decision on the renewal of the Hamlet's water licence. Three issue areas were identified and included: 1) the proposed WWTP upgrades required to meet the regulated discharge parameters and a detailed timetable for their implementation; 2) the overall management and capacity of the existing landfill; and 3) compliance issues identified by the Inspector.

CGS and the Licensee provided a response to the concerns identified by the NWB on May 14 and 15, 2008 respectively. The response clarified the Hamlet's approach to implementing short-term measures to improve overall waste management practices.

On June 10, 2008 the NWB received correspondence from Dr. Isaac Sobol, Chief Medical Officer of Health (CMO) and Mr. Peter Kusugak, Manager Field Operations, Nunavut Regional Office, Indian and Northern Affairs Canada (INAC), which identified the collapse of Pangnirtung's bridge infrastructure due to flooding. Due to the failure of one bridge and damage to the other bridge which provides the access from the major portion of the Hamlet to the WWTP on the other side of the Duval River, the sewage trucks could no longer deliver sewage from homes and businesses to the WWTP. The discharge of sewage into the river was the only viable alternative to simply allowing sewage holding tanks to accumulate and overflow in homes and businesses, which would constitute a health hazard for residents of the Hamlet.

The bridge collapse resulted in a temporary order from the CMO to dump sewage from the Hamlet of Pangnirtung directly into the Duvall River downstream of the affected bridge. The temporary measure was effective June 10, 2008 for a 48 hour period. On June 12, 2008 the NWB recommended to the Minister that an emergency amendment be issued to the Hamlet regarding its expired Municipal Water Licence (NWB3PAN0207) to ensure that emergency measures are duly authorized as required by the *NWSRTA*. Extensions to the emergency dumping measures into the Duval River were provided by the CMO on June 17 and June 20, 2008.

Based upon the results of the detailed assessment of the renewal application file, including consideration of any potential accidents, malfunctions, or impacts to water that the overall project might have in the area, the Board has approved the application and has issued Licence 3BM-PAN0810.

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. In review of the previous water licence NWB3PAN0207 inspection reports, the NWB has noted that there were several issues of non-compliance and other related problems identified by the inspector, which are highlighted in the NWB's letter to the Hamlet on April 17, 2008. Of particular concern to the Board is the following:

During the inspection of the solid waste facility in Pangnirtung both the Inspector and Officer from Environment Canada noted the following: A large open pit filled with commercial fish wastes, this pit was full and overflowing, the pit was infested with maggots and the flies in the area were so large and in such numbers that it was felt to be a health concern. Over 100 bags of sewage sludge were stored/ piled adjacent to this pit containing the fish wastes and neither pile showed any evidence of any attempt to cover / bury these piles. Finally, at the North west corner of the dump area it is apparent that a wash out had occurred and continued seepage from the dump, fish waste storage and sewage sludge piles was/ is exiting the dump area. At the old sewage pump out station it is obvious that no remedial efforts have taken place to restore the area. This is of great concern as the build up of sludge from years of use is now being exposed and flowing directly out into the environment (INAC Inspection Report August 2, 2006).

Upon Application, the Hamlet requested a term of five years for the Licence renewal. No comments were received from interested parties with respect to the length of term, however, the NWB has decided on a two (2) year term for the Licence based on issues with non-compliance, including non-compliance with administrative and reporting requirements.

The NWB notes the Hamlet's letter of May 15, 2008 in which the Licensee has committed to remedy the issues with the landfill. Nevertheless, the two (2) year Licence term is intended to send a clear message to the Hamlet and regulatory authorities that the Board will not passively encourage the Hamlet's failures to comply with the Licence conditions and associated legal requirements. The Board fully expects the Hamlet to take immediate steps towards full compliance with all Licence requirements for its existing facilities. Upon submission of an application to renew the Licence in approximately twenty one (21) months, the Board expects the Hamlet to be in full compliance with the licence. This shorter licence duration also permits the Board to increase its level of confidence of the Licensee that the facilities are operating as they should. As per Part B, Item 10 of the Licence, the Licensee must submit a Plan for Compliance that clearly demonstrates how the Hamlet will achieve full compliance with the Licence conditions during this time period.

The NWB reminds the Licensee of its responsibility to be in compliance with the conditions of the Licence. If monitoring results demonstrate that effluent does not meet discharge limits, the Licensee is required to take the necessary measures to remedy the situation, which may include upgrading the WTP.

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.

Website Public Registry:

([ftp://nunavutwaterboard.org/ADMINISTRATION/Standardized%20Forms/](http://nunavutwaterboard.org/ADMINISTRATION/Standardized%20Forms/)).

Operational Plans

Several Plans were required as conditions of the previous licence and were not submitted. Those plans are once again required as conditions of this Licence and need to be developed to the satisfaction of the NWB for the operation and maintenance of the water and waste facilities, the protection of the environment with regard to potential spills through day-to-day operations, and abandonment and restoration of the Hamlet water and waste facilities.

It is noted that the Licensee has not submitted an Operations and Maintenance (O&M) Plan to the NWB. This Licence has therefore, included the requirement to provide O&M Manual to the NWB, which is to include the following in accordance with Part F, Item 1 of the Licence:

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

The application document entitled *Feasibility Study on Solid Waste Management in Pangnirtung, NU*, Dillon Consulting Limited, September 2007 stated that:

...process water from the fish plant is discharged into the former sewage lagoon located adjacent to the community's landfill.

No other information on this activity was included with the application information. This is a concern to the NWB as the old sewage lagoon is not a licensed facility under the previous water licence and the Inspector's Report highlights the need for remediation and closure to be undertaken for that facility. The NWB therefore requires a Management Plan for disposal of all fish waste to be included as part of the O&M Manual. Other requirements are discussed in the abandonment and restoration section of the Licence to address the concerns with the old sewage lagoon.

The NWB notes that a Plan for managing sewage sludge and screenings was a condition of the previous licence and was never fulfilled by the Licensee. The purpose of the O&M Manual noted above is to assist Hamlet staff in carrying out the procedures relating to the 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 and 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 Pangnirtung currently utilizes the Duval River as a source of potable water with the quantity used not exceeding 100,000 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 Pangnirtung currently provides trucked sewage services for the Community's residents, businesses and institutions. Specific comments relevant to WWTP operations were provided by GN-DOE, INAC and EC.

EC noted that any effluent discharged must be in compliance with Section 36(3) of the Fisheries Act. In order to effectively monitor the effluent for compliance purposes, the NWB has imposed acute toxicity testing as a Licence requirement under Part D, Item 3.

GN-DoE noted that general maintenance should include removal and disposal of sewage sludge generated from the WWTP. EC recommended that prior to the removal of any sludge, the Licensee should submit for approval a Sewage Sludge Management Plan (as part of the above-mentioned O&M Manual) that clearly outlines the chemical composition of the sludge and how sludge will be stored, treated and eventually disposed. The NWB concurs with this recommendation, and has imposed this requirement in the Licence. This requirement follows up

on a previous request for a Plan for the disposal of bagged sewage sludge and screenings from the Sewage Treatment Facility in the previous licence that has not been received by the NWB.

EC noted that a Spill Contingency Plan should be submitted to the NWB by the Licensee. The NWB concurs with this recommendation, and has imposed this requirement as part of the O&M Manual in the Licence.

Solid Waste

The NWB received a number of concerns from reviewers regarding the condition of the landfill and its poor management. This issue has also been highlighted in the Inspection Reports. Plans for the construction and operation of a new landfill are insufficiently developed within the Application, for licensing purposes. In order to construct and operate a new facility, the Licensee is required to submit an amendment application with appropriately detailed design for the new facility, to the Board. Additionally, the amendment application should include an Abandonment and Restoration Plan for the facility being replaced.

The development of an O&M Plan for the Solid Waste Disposal Facility is required as part of the overall O&M Manual discussed above. The O&M Plan for the Solid Waste Disposal Facility 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 proper management of fish wastes.

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 at least six (6) months prior to final closure of any licensed facility or upon submission of the 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.

The NWB is also notes the INAC Inspection Report from 2006, which indicates that the old sewage pump out station has not been reclaimed. The NWB has added a condition for the Licensee to submit to the Board for approval, an Abandonment and Restoration Plan for this facility and area. The Plan is required within six (6) months of the issuance of this Licence.

LICENCE 3BM-PAN0810

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 PANGNIRTUNG

(Licensee)

of

PANGNIRTUNG, NUNAVUT X0C 0C0

(Mailing Address)

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

Licence Number 3BM-PAN0810

Water Management Area NUNAVUT 05

Location PANGNIRTUNG, QIKIQTANI REGION, NU
(Latitude 62°10'N and Longitude 92°36'W)

Purpose WATER USE AND WASTE DISPOSAL

Description MUNICIPAL UNDERTAKINGS

Quantity of Water Not to Exceed: 100,000 CUBIC METRES ANNUALLY

Date of Licence AUGUST 8, 2008

Expiry Date of Licence AUGUST 31, 2010

Dated this 8th day of August, 2008 at Gjoa Haven, NU.



Thomas Kabloona
Acting Chief Executive Officer

PART A: SCOPE AND DEFINITIONS

1. Scope

- a. This Licence allows for the use of water and the disposal of waste for municipal undertakings at the Hamlet of Pangnirtung, Qikiqtani Region, Nunavut (62°10' N; 92°36'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 responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

In this Licence: **3BM-PAN0810**

“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;

“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*;

“Composite Sample” means a water or wastewater sample made up of four (4) samples taken at regular periods over a 24 hour period;

“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;

“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;

“Sewage” means all toilet wastes and greywater;

“Sewage Disposal Facilities” comprises the existing Waste Water Treatment Plant as described in the Application document entitled Pagnirtung Waste Water Treatment Plant: Comprehensive Performance Evaluation *Draft Final Report* Pagnirtung, NU. Dillon Consulting Limited, August 2007;

“Solid Waste Disposal Facilities” means the existing facility originally licensed in 2002 and designated for the disposal of solid waste, as also described in the Application document entitled Feasibility Study on Solid Waste Management in Pagnirtung, NU. Dillon Consulting Limited, September 2007;

“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;

“Water Supply Facilities” comprises the area and associated intake infrastructure at the Duval River;

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*;
- 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; and
- d. The Licensee shall, in relation to any application to renew or amend the Licence, have in place a Plan for Compliance approved by the Board in writing, to achieve full compliance with the conditions of this Licence, or a Plan for Compliance

must be submitted at the time of Application, in order for the Application to be deemed complete.

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. 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 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 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, within ninety (90) days after the first visit by the Inspector following issuance of this Licence, post the necessary signs to identify 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

(c) Analyst Contact:

Taiga Laboratories
Department of Indian and Northern Affairs
4601 – 52 Avenue, P.O. Box 1500
Yellowknife, NT X1A 2R3
Telephone: (867) 669-2781
Fax: (867) 669-2718

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

Licencee to the Board are received and acknowledged by the Manager of Licensing.

10. The Licensee shall submit to the Board for approval, within ninety (90) days of Licence issuance or upon the filing of any application in relation to the Licence within that time, a Plan for Compliance that clearly demonstrates the measures the Licensee will undertake, including an implementation schedule, to achieve full compliance with the conditions of this Licence, including the issues raised in the Inspector's Reports.
11. 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.
12. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
13. 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.
14. 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 the Duval River using the Water Supply Facilities or as otherwise approved by the Board.
2. The annual quantity of water, used for all purposes, shall not exceed one hundred thousand (100,000) 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 Waste Water Treatment Plant or as otherwise approved by the Board.
2. All Effluent discharged from the Waste Water Treatment Plant at Monitoring Program Station PAN-3 shall not exceed the following Effluent quality limits:

Parameter	Maximum Average Concentration
BOD ⁵	120 mg/L
Total Suspended Solids	180 mg/L
Faecal Coliforms	1 x 10 ⁵ CFU/100mL
Oil and grease	No visible sheen
<u>pH</u>	between 6 and 9

3. All Effluent discharged from the Waste Water Treatment Plant at Monitoring Program PAN-3, shall be demonstrated to be Not Acutely Toxic under the following tests to be conducted once annually, with a minimum of six (6) months between samples:
 - a. Acute lethality to Rainbow Trout, *Oncorhynchus mykiss* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/13); and
 - b. Acute lethality to the crustacean, *Daphnia magna* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/14).
4. The Licensee shall dispose of and contain all solid wastes at the Solid Waste Disposal Facility or as otherwise approved by the Board.
5. The Licensee shall segregate and store all hazardous materials and/or hazardous waste within the Solid Waste Disposal Facility in a manner as to prevent the deposit of deleterious substances into any water until such a time as proper disposal arrangements are made.
6. The Licensee shall dispose of and contain all fish processing wastes at the Solid Waste Disposal Facility, in a pit excavated below the active layer-permafrost interface. Fish wastes deposited at the Solid Waste Disposal Facility shall be treated with lime, and covered with soil prior to the onset of the annual Spring freshet and then weekly thereafter during June, July, August and September.

7. The Licensee shall implement measures to control wind-blown litter at the Solid Waste Disposal Facility.
8. The Licensee shall implement measures to control surface runoff from the Solid Waste Disposal Facility.

PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION

1. The Licensee shall submit to the Board for approval, design drawings stamped and signed 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 shall submit to the Board for review, following the emergency remediation work resulting from flooding in 2008, as-built drawings of water and waste related facilities constructed.
3. 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.
4. Modifications for which all of the conditions referred to in Part E, Item 4, 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.
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 ensure that sediment and erosion control measures are implemented prior to and maintained 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 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. *Water Distribution Facility Operation and Maintenance (O&M) Plan;*
 - b. *Waste Water Treatment Plant Operation and Maintenance (O&M) Plan;*
 - c. *Fish Process Plant Waste Management Plan;*
 - d. *Sewage Sludge and Screenings Management Plan;*
 - e. *Solid Waste Disposal Facility Operation and Maintenance (O&M) Plan;*
 - f. *Spill Contingency Plan; and*
 - g. *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 the Operation and Maintenance Manual for the Hamlet of Pangnirtung;
 - 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 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 any preventative measures to be implemented.

PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall submit to the Board for approval, within six (6) months of licence issuance, an Abandonment and Restoration Plan for the old sewage pump out station.
2. The Licensee shall submit to the Board for approval 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. solid waste facility;
 - b. water intake facilities;
 - c. the water treatment and waste disposal sites and facilities;
 - d. petroleum and chemical storage areas;
 - e. any site affected by waste spills;
 - f. leachate prevention;
 - g. an implementation schedule;
 - h. maps delineating all disturbed areas, and site facilities;
 - i. consideration of altered drainage patterns;
 - j. type and source of cover materials;
 - k. future area use;
 - l. hazardous wastes; and
 - m. a proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment.

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
PAN-1	Raw water supply intake at Duval River	Active (Volume)
PAN-2	Raw Sewage from pump-out truck	New (Volume)
PAN-3	Effluent from Waste Water Treatment	Active

	Facility	
PAN-4	Runoff from Sludge disposal area	Active
PAN-5 (previously PAN-2)	Runoff from the Solid Waste Disposal Facility	Active

2. The Licensee shall sample at Monitoring Program Station PAN-3 monthly during operation and discharge of Effluent. Samples shall be analyzed for the following parameters:

Biochemical Oxygen Demand - BOD	Faecal 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)

3. The Licensee shall sample at Monitoring Program Stations PAN-4 and PAN-5 once at the beginning, middle and near the end of the season when flow is observed. Samples shall be analyzed for the parameters listed in Part H, Item 2.
4. The Licensee shall report all results of acute toxicity testing as required under Part D, Item 3 within the Annual Report as per Part B, Item 1.
5. The Licensee shall measure and record, in cubic metres, the monthly and annual quantities of water pumped at Monitoring Program Station PAN-1, for all purposes.
6. The Licensee shall measure and record, in cubic metres, the monthly and annual quantities of raw sewage offloaded from trucks at Monitoring Program Station PAN-2.
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.

9. All analyses shall be performed by a laboratory certified by the Canadian Association of Environmental Analytical Laboratories (CAEAL), or as otherwise approved by an Analyst.
10. The Licensee shall measure and record the annual quantities of sewage solids removed from the Waste Water Treatment Plant along with the treatment/storage/disposal provided.
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 NWB.
13. The Licensee shall, within sixty (60) days of Licence issuance, submit to the Analyst for approval, a Quality Assurance/ Quality Control (QA/QC) Plan, which addresses both field and laboratory requirements. The Plan shall be submitted to the Board upon approval by the Analyst for inclusion with the O&M Manual, required under Part F, Item 1(g).
14. The Licensee shall submit to the Board for review and approval, within six (6) months of the issuance of this licence, a report identifying any additional Final Discharge Point from the Waste Water Treatment Plant. The report shall include at a minimum:
 - a. Plans, specifications, geographic coordinates and a general description of each Final Discharge Point and direction of flow; and
 - b. A description of how each Final Discharge Point is designed and maintained, if required; and
 - c. A description of the receiving environment.