



ᓄᓇᓂᓪ ᐃᓕᓕᓂᓪᓴᓪ ᑲᓂᓕᓂᓪᓴᓪ  
NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

NWB File No.: **3BM-PAN1417**

September 16, 2014

Karen Mellor, SAO  
Hamlet of Pangnirtung, Baffin Region  
P.O. Box 253,  
Pangnirtung, NU X0A 0R0  
Email: [pang\\_sao@qiniq.com](mailto:pang_sao@qiniq.com)

Bhabesh Roy, M.A. Sc., P. Eng  
Municipal Planning Engineer, GN-CGS  
P.O. Box 379,  
Pond Inlet, NU X0X 0S0  
Email: [broy@gov.nu.ca](mailto:broy@gov.nu.ca)

**RE: NWB Renewal/Amendment Licence No. 3BM-PAN1417**

---

Dear Ms. Mellor and Mr. Roy:

Please find attached Licence No. **3BM-PAN1417** 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 (Nunavut Land Claims Agreement or NLCA)*. 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* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. 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's 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 time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and are acknowledged by the Manager of Licensing.

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

Sincerely,



---

Thomas Kabloona  
Nunavut Water Board  
Chair

TK/kk/mp

Enclosure: Licence No. **3BM-PAN1417**  
Comments – AANDC

Cc: Qikiqtani Distribution List

---

<sup>1</sup> Aboriginal Affairs and Northern Development Canada (AANDC), September 8, 2014.

## TABLE OF CONTENTS

<b>DECISION</b> .....	ii
<b>I. BACKGROUND</b> .....	iii
<b>II. PROCEDURAL HISTORY</b> .....	iii
<b>III. ISSUES</b> .....	vi
Term of the Licence .....	vi
Annual Reports.....	vii
Water Use .....	vii
Deposit of Waste .....	viii
<i>Sewage</i> .....	viii
<i>Solid Waste</i> .....	ix
Operational Plans .....	x
Monitoring Program .....	xi
<i>Quality Assurance / Quality Control Plan (QA/QC Plan)</i> .....	xii
<b>WATER LICENCE RENEWAL</b> .....	13
<b>PART A: SCOPE, DEFINITIONS AND ENFORCEMENT</b> .....	14
1. Scope .....	14
2. Definitions.....	14
3. Enforcement .....	16
<b>PART B: GENERAL CONDITIONS</b> .....	17
<b>PART C: CONDITIONS APPLYING TO WATER USE</b> .....	19
<b>PART D: CONDITIONS APPLYING TO WASTE DISPOSAL</b> .....	20
<b>PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION</b>	21
<b>PART F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE</b> .....	22
<b>PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION</b> ..	23
<b>PART H: CONDITIONS APPLYING TO THE MONITORING PROGRAM</b> .....	24

## DECISION

### LICENCE NUMBER: 3BM-PAN1417

This is the decision of the Nunavut Water Board (NWB) with respect to a complete application dated July 29, 2014 for a renewal/amendment of a Water Licence made by:

### HAMLET OF PANGNIRTUNG

to allow for the use of water and deposit of waste during municipal activities by the Hamlet of Pangnirtung located within the Qikiqtani Region, Nunavut, generally located at the geographical coordinates as follows:

Latitude: 66° 09' 00'' N and Longitude: 65° 40' 34'' W

## DECISION

After having been satisfied that the application was for a project proposal located outside the boundaries of the two approved land use plans administered by the Nunavut Planning Commission (NPC)<sup>1</sup> and was exempt from the requirement for screening by the Nunavut Impact Review Board (NIRB)<sup>2</sup> pursuant to Schedule 12-1 of the *Nunavut Land Claims Agreement (NLCA)*, the NWB decided that the application could proceed through the regulatory process. In accordance with S.55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (Act)* and Article 13 of the *NLCA*, public notice of the application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and considering the representations made by interested persons, 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 *Act*, waived the requirement to hold a public hearing and determined that:

**Licence No. 3BM-PAN0810 be renewed/amended as Licence No. 3BM-PAN1417 subject to the terms and conditions contained therein. (Motion #: 2014-B1-030)**

Signed this 16th day of September 2014 at Gjoa Haven, NU.



Thomas Kabloona  
Nunavut Water Board  
Chair

TK/kk/mp

<sup>1</sup> Nunavut Planning Commission Determination, dated August 12, 2014.

<sup>2</sup> Nunavut Impact Review Board: Exempt from Screening Decision, dated August 11, 2014.

## I. BACKGROUND

The Hamlet of Pangnirtung (Pangnirtung or the Hamlet) is located at Latitude 66° 09' 00'' N and Longitude: 65° 40' 34'' W, on the eastern shore of Baffin Island within the Qikiqtani Region of Nunavut, approximately 255km north of Iqaluit. The population of Pangnirtung in 2013 is estimated to be 1,512 according to the Nunavut Bureau of Statistics. The estimated population of the community in 2030 would be approximately 2000.

Pangnirtung is located within the continuous permafrost zone with a maximal local depth of annual thaw of the active layer up to 1-1.5m depending on the nature of the surface cover. Vegetation is typical for the Arctic tundra with hardy grasses, mosses and lichens in a thin organic layer on the surface. The weather is generally unpredictable throughout the year. Temperatures are harsh in the winter, where wind chill temperatures can be -50°C or below. Pangnirtung does experience periods of high winds. From Mid-November to Mid-February, Pangnirtung does not receive direct sunlight due to high coastal mountains. There is continuous daylight from April to mid-August. January mean high and low temperatures are -23°C and -30°C, respectively, and July mean high and low temperatures are 11°C and 5°C, respectively. The temperature in July and August usually averages between 5°C and 15°C. The annual snowfall is approximately 170mm and the annual rainfall is approximately 210mm.

Pangnirtung is one of only three Nunavut Communities with a fish processing plant and a robust Arctic Char and Greenlandic Turbot Fishery.

Water for municipal use is pumped from 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, odor and windblown litter, poorly operated and maintained, and is nearing its life capacity.

## II. PROCEDURAL HISTORY

On **December 1, 2002**, the Nunavut Water Board (“NWB” or “Board”) issued water licence NWB3PAN0207 to the Hamlet of Pangnirtung for the use of 100,000 m<sup>3</sup> *per year* water and waste disposal activities within the Hamlet. The licence expiry date was set at November 31, 2007. On June 10, 2008 the NWB received correspondence from Chief Medical Officer of Health (CMO) and Manager Field Operations, Nunavut Regional Office, Aboriginal Affairs and Northern development Canada (AANDC), which identified the collapse of Pangnirtung’s bridge infrastructure due to flooding. Due to the failure of the bridge, 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 allow 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 Duval 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 AANDC Minister (Minister) that an emergency amendment be issued to the Hamlet regarding its expired licence NWB3PAN0207 to ensure that emergency measures were duly authorized as required by the *NWSRTA*. On June 16, 2008, the Minister consented to waiving the notice period to issue the emergency amendment as recommended by the NWB, effective immediately. Extensions to the emergency dumping measures into the Duval River were provided by the CMO on June 17 and June 20, 2008.

On **August 8, 2008**, the licence was renewed as licence 3BM-PAN0810, with the expiry date set at August 31, 2010, allowing the Hamlet to use 100,000 m<sup>3</sup> *per year* of water and dispose of waste at specific facilities within the Hamlet. The two (2) year Licence term was 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 expected 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 expected the Hamlet to be in full compliance with the licence*. Part B, Item 10 of the Licence indicated *that 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*.

On **October 19, 2011**, and re-submitted on **March 08, 2012**, the Board received an Application for the renewal of water licence 3BM-PAN0810 ("Licence") from the Government of Nunavut Department of Community Government Services (GN-CGS) on behalf of the Hamlet of Pangnirtung (Hamlet). The renewal Application was comprised of the following documents:

October 19, 2011 submissions:

- Cover Letter for renewal dated October 3, 2011;
- Completed Renewal Application form;
- 2010 Annual Report;
- Technical Summary in English and Inuktitut; and
- Plan for Compliance.

On March 8, 2012 additional submissions:

- 2011 Annual Report; and
- Plan for Compliance (updated).

On **April 5, 2012** the NWB informed the Licensee about deficiencies in the Application that needed to be addressed prior to proceeding with processing the renewal Application<sup>1</sup>. Clarifications were requested regarding the Plan for Compliance's short and long term plans for addressing a number of outstanding requirements of the licence.

---

<sup>1</sup> Letter from Erik Skiby, NWB, to Ron Mongeau, Hamlet of Pangnirtung: Re: Application for Licence Renewal and Plan for Compliance, dated April 5, 2012.

On **October 3, 2012**, the NWB received the following additional information:

- Cover Letter dated November 2012;
- Pangnirtung Optimization of Drinking Water Supply – Project Schedule;
- Preliminary Schedule for the Pangnirtung Solid Waste Site Rehabilitation Oct 30, 2012; Pangnirtung, NU WWTP Upgrade Preliminary Project Schedule; and
- Plan for Compliance.

On **January 8, 2013**, the NWB advised the Licensee that these documents were received in hard copy, and some of them (Plan for Compliance) were unreadable due to wrong format and size<sup>2</sup>. The Licensee was advised to provide documents in electronic format for review.

After a number of correspondences (last one dated **March 31, 2014**<sup>3</sup>) between the NWB and the Licensee, on **April 2, 2014**, the following additional information was provided to the Board:

- Authorization Letter;
- Design Development Report – Optimization of Drinking Water Supply Pangnirtung, Nunavut GN-CGS Project #08-2009; and
- Letter from B. Roy, GN-CGS to P. Beaulieu, NWB: *Re: Hamlet of Pangnirtun: Water Licence #3BM-PAN0810 Application.*

On **April 24, 2014**<sup>4</sup>, the NWB advised the Licensee that the application still does not meet the requirements of section 48(1) of the *Act*, and requested clarifications on issues raised or a Plan for Compliance that clearly demonstrates the measures the Licensee will undertake, including long/short term implementation schedules, to achieve full compliance with the conditions of this Licence, including the issues raised in the AANDC Inspector's *Reports*.

On **May-June, 2014**, the Board received the following additional information to be included within the Application:

- Letter from B. Roy, GN-CGS to P. Beaulieu, NWB and Justin Hack, AANDC: Re: Shut Down WWTP during Construction: Contingency Plan and Notice, dated May 1, 2014;
- Letter from B. Roy, GN-CGS to P. Beaulieu, NWB: Re: Shut Down WWTP during Construction: Contingency Plan and Notice, dated May 12, 2014;
- Letter from B. Roy, GN-CGS to P. Beaulieu, NWB: Re: Water Licence # 3BM-PAN0810 Renewal Application: Response to the letter of Mr. Erik Skiby, Assistant Technical Advisor, dated May 13, 2014;
- Water Licence Amendment Application, dated May 4, 2014;
- Pangnirtung Fish Waste Lagoon Decommissioning Plan, dated May 23, 2013;
- Operation and Maintenance Manual for Wastewater Treatment Plan Hamlet of Pangnirtung;
- Letter from B. Roy, GN-CGS to P. Beaulieu, NWB: Re: Hamlet of Pangnirtung Water Licence # 3BM-PAN0810 Renewal Application, dated May 19, 2014; and
- Solid Waste Operation and Maintenance Plan for Hamlet of Pangnirtung, dated June 2014.

---

2 Email from Phyllis Beaulieu, NWB, to Ron Mongeau, Hamlet of Pangnirtung: Re: Receipt of Documents Hard Copy only, dated January 8, 2013.

3 Email from Erik Skiby, NWB, to Roy Bhabesh, GN-CGS: Re: Status of Pangnirtung WL Application, dated March 31, 2014.

4 Letter from Erik Skiby, NWB, to Roy Bhabesh (GN-CGS) and Karen Mellor (Hamlet of Pangnirtung): Re: Response to additional information, dated April 24, 2014.

On **July 29, 2014**, the Board received additional information and clarification by Email of on-going/future activities from GN-CGS on behalf of Licensee that included the following information:

- Revised Water Licence Renewal Application, dated July 29, 2014; and
- Drinking Water Quality (July 2013) Preliminary Results Pangnirtung, NU, dated September 16, 2013; and

On **August 8, 2014**, following a preliminary internal technical review, the NWB concluded that the Application generally meets the requirements of section 48(1) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA or Act) and forwarded notice of the Application to regulators, the council of the municipality most affected by the project, and other interested parties. All parties were invited to make representations to the NWB within thirty (30) days, by September 8, 2014. On September 8, 2014, comments were received from AANDC.

Based upon the results of the completed detailed assessment, including consideration of any potential accidents, malfunctions, or cumulative environmental effects that the overall project might have in the area, the Board has approved the application for the renewal of Licence No. 3BM-PAN0810 as Licence No. **3BM-PAN1417**.

### **III. ISSUES**

#### **Term of the Licence**

In accordance with S. 45 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA or the Act), the NWB may issue a licence for a term not exceeding twenty-five (25) years. In determining an appropriate term of a water licence, the Board considers a number of factors, including the results of the AANDC's annual site Inspection and the compliance record of the Applicant.

The Licensee has requested a five (5) year term for the renewal Licence (to expire in 2019). In their submission, AANDC - Water Resources Division (AANDC) recommended that the Licence be renewed for five (5) years.

The AANDC Inspection of August 17, 2011, identified longstanding Non-Compliance of the Act or Licence issues that were to be addressed by the Hamlet.

The NWB is fully aware of recurring non-Compliance issues with respect to the Act in the context of the Licence issued to the Hamlet. The NWB acknowledges, however, that some improvements have been made by the Licensee (i.e. actual Monitoring completed in 2013) during last year in trying to address the Non-Compliance issues and to reach the short-term compliance goals. However, the Board believes that a licence term of three (3) years will provide a realistic opportunity for the Licensee to prove to the Board that it can meet the long-term requirements as well as establish a consistent compliance record with respect to the requirement under the terms and conditions of its licence. The three (3) year renewal Licence will also ensure that sufficient time is given to permit the Licensee to develop, submit, and implement the plans required under its Licence with respect to the planned construction works



for the Wastewater Treatment Plant and construction of a new Water Truck-fill Station, expected by December 31, 2014 and by December 31, 2016, respectively.

The Hamlet's actual daily water use may be higher than 300 m<sup>3</sup> *per* day when filling the Water Storage Reservoir which could trigger a change of the Licence Type "B" to Type 'A'. The three (3) year term shall allow the Licensee to measure the daily water use during two (2) full years and help the Board to accurately determine the Type of Licence for the future renewal.

### **Annual Reports**

As part of its obligations under this Licence, the Licensee is required to generate and submit to the Board for review, on an annual basis, a report that pertains to its undertakings and activities. The report is for the purpose of ensuring that the NWB has an accurate update of municipal activities during each calendar year. This information will be maintained on the public registry and will be available to any interested parties upon request. A "*Standardized Form for Annual Reporting*" is to be used by the Licensee and is available for use at the NWB's ftp site at:

<http://www.nwb-oen.ca/public-registry>

The Licensee is advised that the NWB *Standardized Form* could be supplemented by additional monitoring documentation and Licensee's annual reporting forms as advised by AANDC. The Licensee is required to submit all monitoring data with appropriate station identification to the NWB as a requirement of the Annual Report in Part B Item 1 of the licence. The Annual Report shall include all Monitoring Program results as per requirements included within Part H (Conditions applying to the Monitoring Program) of the Licence. The Licensee shall provide, with Annual Reports, all tabular summaries for monitoring program stations in addition to laboratory results. As stated by AANDC *these summaries should reference licensed monitoring program stations (e.g., PAN-X), effluent quality limits, and any exceedances.*

### **Water Use**

The Hamlet currently receives its freshwater supply from the Duval River to the Water Storage Reservoir located approximatively 100m north of the River. Water is stored every summer from the end of May to the beginning of October for annual use. The rest of the time Duval River freezes up, and no flow occurs. A Water Storage Reservoir is filled each summer for annual storage. A water Truck-fill Station is built at the top of the northern berm of the Reservoir. In order to meet the demand for future population growth for the next 20 years a new Truck-fill Station is expected to be constructed to replace the existing one by December 31, 2016.

Under the expired licence, 100,000 m<sup>3</sup> of water per year was allocated, and although the Licensee has requested within the renewal application of May 21, 2014, 51,531 m<sup>3</sup> of water *per* year for all purposes, on July 29, 2014, the GN-CGS clarified with a revised application that 74,000 m<sup>3</sup> of water *per* year would be required.

No concerns were raised by the parties in their written submissions (AANDC) 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.

In review of the application, the NWB relied on the new Nunavut Waters Regulations (Regulations) issued on April 18, 2013 and the definition of “Use” provided by the *Act*. All water taken from the Duval River, main water source to fill the reservoir would qualify under the definition as “use of water”. Therefore, having given due consideration to the information presented during the review, the NWB has determined that water extracted from the source water supply, for any purposes, is considered as a Use of water and that the Licensee is requested to daily measure directly on the source at Monitoring Program Station PAN-1 all freshwater used for all purposes.

The Licensee shall also measure on daily, monthly and annual basis all freshwater used for all purposes at the Truck-fill Station.

The Licensee is also advised that according to the Schedule 2 of Regulations any use of 300 m<sup>3</sup> or more *per* day and any use of waters related to the storage of 60,000 m<sup>3</sup> or more water would require a Type “A” Water Licence. The Board has, therefore, set the maximum water usage for all purposes specified in this Licence at 74,000 m<sup>3</sup> *per* year or up to 299 m<sup>3</sup> *per* day for filling of the reservoir.

## **Deposit of Waste**

### ***Sewage***

The Hamlet currently provides trucked sewage services for the Community. Specific comments relevant to Waste Water Treatment Plant (WWTP) operations were provided by AANDC. AANDC noted that the WWTP Operation and Maintenance Plan (WWTP O&M Plan) *should be revised to provide a non-technical overview of its design and ability to satisfy (licensed) effluent discharge criteria. Details concerning the management of treated effluent and sludge as well as licensed monitoring program requirements should be included in the plan.* The revised WWTP O&M Plan should also include an Executive Summary for an overview of how the facilities are being operated, following with a Document Control Section to track document revisions. AANDC recommended also *developing sewage Sludge Treatment Program* to diminish the leachate generation from Sludge being bagged for disposal in the Solid Waste Disposal Facility.

AANDC Inspection of July 2011 indicated *that treatment plant continues to struggle with the volume of effluent input into the system. It was also stated that the practice of surface disposal of Sludge is contrary to the issued license and not acceptable to the Inspector, and Sludge and processing from the fish plant are to be buried as outlined in the now expired license.*

The NWB concurs with these recommendations, and has imposed requirements in the Licence with respect to the future revision of the WWTP O&M Plan to be submitted within the 2014 Annual Report. The WWTP O&M Plan shall be revised in accordance to the October 1996 Government of the Northwest Territories “Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories” and shall include details on Sludge Treatment Program and the WWTP changes/upgrades that the Hamlet intends to complete by December 31, 2014. The Licensee shall make every effort to address all operational issues identified by Inspector.

### ***Solid Waste***

The June 2014 “Solid Waste Operation and Maintenance Plan for Hamlet of Pangnirtung” (SW O&M Plan) submitted as additional information within the Application states that Solid Waste generated in Pangnirtung includes: municipal Solid Waste generated in the community, sewage Sludge generated in the WWTP and fish waste generated at the fish plant. Solid waste from the Hamlet is currently disposed of in a landfill located approximately 800 metres from the edge of the Hamlet. The current landfill site (200m long and 65 m width), is a rectangular land area, is enclosed with 3m high steel fence all around. The SW O&M Plan states that the Community is currently managing an independent metal dump site located just opposite to the landfill site and this site is not fenced.

About 30% of the landfill area is designated for fish and sludge waste management. Offal from the fish processing plant was disposed of at the solid waste disposal facility until 2010. Fish plant management estimated that the plant operated for approximately 115 days/year and that 1.5 to 2 m<sup>3</sup> of fish waste was generated *per* day, or 230 m<sup>3</sup> per year. The GN and the fish plant were investigating alternative disposal methods for the fish waste (e.g. ocean dumping), which would remove the waste from the Hamlet’s solid waste disposal stream.

Bagged Sludge is presently removed from the aerobic digester approximately one or two times *per* week. In its comment, AANDC stated that sludge can be treated prior to landfill disposal. *Treatment of sewage Sludge Program can be implemented (freeze/thaw dewatering of sludge on drying beds and the collection/further treatment of recovered leachate).* AANDC also stated that the Licensee *should ensure that non-contact water diversion measures are implemented at uphill of its Solid Waste Disposal Facility and bulky metals and hazardous waste storage areas to limit the volume of effluent requiring management.*

The July 2011 AANDC Inspection stated that *the Solid Waste management area requires proper segregation of Hazardous wastes into a lined containment area for storage, packaging for shipment off site is required.* It was also noted that *a new metals / vehicle storage area has been created outside the boundaries of the existing solid waste management area.*

The NWB concurs with AANDC recommendations, and advises the Licensee to make improvements to the sewage Sludge dewatering process at the WWTP as these improvements will reduce the water content of the Sludge, and therefore will reduce the volume of Sludge generated. The Board requires that the Hamlet give serious consideration to AANDC recommendations, and in the interim take whatever steps are practicable to prevent any impact to the environment.

From the Board’s understanding, Hamlet’s natural attenuation landfill is not lined and small amounts of contaminants can enter the surrounding environment to be naturally broken down. In this type of landfill, the rate that contaminants enter the environment is expected to occur at a rate such that contaminants can easily be broken down and the surrounding environment is not overwhelmed. Natural attenuation landfills also rely on permafrost aggrading into the covered waste cells of the landfill and eventually freezing them. However, as contaminants are able to freely enter the environment in this type of landfill, proper waste segregation is important to ensure harmful contaminants are kept out of the landfill.

To ensure that site runoff is properly managed so there is no impact to the natural environment in terms of contamination the Board has again included within the Monitoring Program Stations sampling of Monitoring Program Stations for the Landfill leachate/run-off from domestic waste dumping area (PAN-4) and from Sludge dumping area (PAN-5). The Board has also included an additional Monitoring Program Station (PAN-6) for the run-off from metal/vehicle dump area.

### **Operational Plans**

Part F, Item 1 of expired 3BM-PAN0810 Licence required that the Licensee submit to the Board for approval within ninety (90) days of issuance of the Licence the following revised 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).*

The following environmental management documents included with the Application were found acceptable by the Board:

- Operation and Maintenance Manual for Water Truck-fill Hamlet of Pangnirtung, completed in 1987 (WTS O&M Plan);
- Operation and Maintenance Manual for Waste Water Treatment Plant Hamlet of Pangnirtung (WWTP O&M Plan);
- Solid Waste Operation and Maintenance Plan for Hamlet of Pangnirtung, dated June 2014 (SW O&M Plan);
- Station Pangnirtung Fish Waste Lagoon Decommissioning Plan, dated May 23, 2013 (FWLD Plan);

However, under Part F, Item 1, the Licensee shall be required to submit to the Board for approval within the 2014 Annual Report, revised WTS O&M, WWTP O&M and SW O&M Plans to include the following:

- Executive Summaries;
- Document Control Section intending to track document revisions and providing document version, date, sections and pages, and summary of changes.
- The WWTP O&M Plan shall also include a non-technical overview of its design and ability to satisfy effluent discharge criteria incorporated in the Licence, details of Sludge Management / Treatment Program, and details of Monitoring Program requirements. The revised plan shall also include details related to WWTP changes/upgrades expected by end of 2014;
- The SW O&M Plan shall also include details of Monitoring Program Stations actual description, a schematic and a topographic map of appropriate scale detailing the landfilling areas, run-off from Sludge disposal area, and Monitoring Program Stations locations.

From the Board's understanding the Station Pangnirtung Fish Waste Lagoon Decommissioning Plan (FWLD Plan) is a conceptual interim plan. Therefore under Part G Item 1, the Licensee shall be required to submit a final decommissioning plan at least 6 months prior to abandoning this facility amongst other facilities.

The Board notes that a section of Spill Contingency Planning is included within the SW O&M Plan. AANDC stated that this Plan should be a *stand-alone document because hazardous material spills can occur in areas other than the Solid Waste Disposal Facility (e.g., municipal buildings and roads, oil and fuel storage tanks, quarry areas, etc.)*. The NWB believes that a stand-alone Spill Contingency Plan that details spill responses and procedures for Water Supply, Sewage Disposal and Solid Waste Disposal Facilities Operations would facilitate the effective implementation of spill response measures by Hamlet staff. Therefore the Licensee shall be required to submit a stand-alone Spill Contingency Plan under Part F, Item 2.

### **Monitoring Program**

Part H of the Licence details the environmental monitoring requirements. The Licensee included a request to amend the water licence by *deleting the item 3 (a and b) of Part D from the licence due to time constraint of sampling, shipping and getting the samples tested in time in this southern lab since there is no accredited lab in Nunavut*.

In addition to this request, the Licensee recommended *amending the Part F, Item 3 that requires an annual inspection of all engineered facilities related to the management of water and waste by a Geotechnical Engineer to allow the Licensee to perform an annual inspection of all engineered facilities related to the management of water and waste by the Regional Municipal Planning Engineer*.

Acute Lethality tests of treated municipal wastewater effluent are generally included within the water licenses by third Parties (Environment Canada (EC) or Fisheries and Oceans Canada (DFO)) request to ensure that the subsection 36 (3.) of Fisheries Act requirements are met. As the Board did not receive any objections from relevant Parties, and recognizing related time/logistical constraints, the Board has removed this requirement from the renewal Licence.

In its comment with respect to annual inspections to be completed by *Regional Municipal Planning Engineer*, AANDC stated that this is an acceptable proposal, and recommended that more stringent requirements be applied if it is determined that infrastructure pose higher environmental and/or health and safety risks. The Board concurs with this recommendation, and has amended this condition. Part F, Item 5 of the Licence includes a requirement of annual inspection of all engineered facilities related to the management of water and waste to be carried by an Engineer (Civil, Municipal or Geotechnical).

The SW O&M Plan states that the Community *manages an independent metal dump site located just opposite to the land fill site and this site is not fenced*. The NWB notes that there is no indication whether or not that metal dump area is lined. The July 2011 AANDC Inspection also stated that *new metals / vehicle storage area has been created outside the boundaries of the existing solid waste management area that is not covered under the existing/ now expired license and is a change to the operations of the Facilities within the community*.

The Board concurs with AANDC Inspection, and has included an additional Program Monitoring Station (PAN-6) for the contact water discharge (if the site is lined) or potential run-off from the metal dam unlined site. To prevent the contact water's spreading into the surrounding environment the Licensee shall ensure that a containment pond is created for the potential run-off and to facilitate the sampling.

It should also be noted that while minimum sampling requirements have been imposed, additional sampling may be required upon request by an Inspector.

***Quality Assurance / Quality Control Plan (QA/QC Plan)***

The requirement to submit a Quality Assurance / Quality Control Plan (QA/QC Plan) is to provide the necessary checks and controls under the Licence for sampling, monitoring and reporting for Hamlet of Pangnirtung. The purpose of the QA/QC Plan is to ensure that samples taken in the field as part of the Monitoring Program will be of a high quality, so as to accurately represent the physical and chemical nature of the samples being taken. These procedures are generally developed from literature and guidelines, and are intended to promote good practices in environmental management.

The QA/QC Plan included within the SW O&M Plan is very general and does not include information about the laboratory accreditation pursuant to ISO/IEC Standard 17025.

The NWB has included a requirement to submit under Part H, Item 8 of the Licence, a "*Quality Assurance/Quality Control (QA/QC) Plan for the Hamlet Waste Water and Solid Waste Disposal Facility Monitoring Program*" prepared in accordance with the INAC "*Quality Assurance (QA) and Quality Control (QC) Guidelines for use by Class "B" Licensees in Collecting Representative Water Samples in the Field, 1996*".

The QA/QC Plan shall be submitted to the Board with a current approval letter from an accredited lab and shall meet the requirements set out in Part H, Items 9 and 10.



## NUNAVUT WATER BOARD WATER LICENCE RENEWAL

Licence No. **3BM-PAN1417**

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)

P.O BOX 253 PANGNIRTUNG, NUNAVUT, X0A 0R0

(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 renewal:

Licence Number/Type: 3BM-PAN1417 TYPE "B"

Water Management Area: NORTHERN CUMBERLAND SOUND (51)

Location: HAMLET OF PANGNIRTUNG  
QIKIQTANI REGION, NUNAVUT

Classification: MUNICIPAL UNDERTAKING

Purpose: DIRECT WATER USE AND DEPOSIT OF WASTE

Quantity of Water use not  
to Exceed: 74,000 CUBIC METRES PER ANNUM OR MAXIMUM OF 299  
CUBIC METRES PER DAY

Date of Licence Issuance: SEPTEMBER 16, 2014

Expiry of Licence: SEPTEMBER 15, 2017

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

**Thomas Kabloona,**  
**Nunavut Water Board, Chair**

## **PART A: SCOPE, DEFINITIONS AND ENFORCEMENT**

### **1. Scope**

This Licence allows for the use of water and the deposit of waste for a Municipal undertaking classified as per Schedule 1 of the *Regulations* at the Hamlet of Pangnirtung in Qikiqtani Region, Nunavut (Latitude: 66° 09' 00'' N and Longitude: 65° 40' 34'' 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**

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

“**Addendum**” means the supplemental text that is added to a full plan or report usually included at the end of the document and is not intended to require a full resubmission of the revised report;

“**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 water 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* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

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



**“Engineer”** means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2* and the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

**“Final Discharge Point”** means an identifiable discharge point of a Waste Disposal Facility beyond which the Licensee no longer exercises care and control over the quality of the Effluent;

**“Freeboard”** means the vertical distance between water line and crest on 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 an undiluted quantity of material collected at a particular time and place that may be representative of the total substance being sampled at the time and place it was collected;

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

**“High Water Mark”** means the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land (ref. Department of Fisheries and Oceans Canada, Operational Statement: Mineral Exploration Activities);

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

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

**“Metal Storage Area”** means the facilities designated for the disposal of metal/vehicles, as described in the Application for Water Licence renewal and associated documents filed by the Licensee on July 29, 2014;

**“Modification”** means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

**“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 *Nunavut Waters Regulations SOR/2013-69 18th April, 2013*;

**“Sewage”** means all toilet wastes and greywater;

**“Sewage Disposal Facilities”** comprises existing Waste Water Treatment Plant as described in the Application for Water Licence renewal and associated documents filed by the Applicant on July 29, 2014;

**“Solid Waste Disposal Facility”** means the facilities designated for the disposal of solid waste, as described in the Application for Water Licence renewal and associated documents filed by the Licensee on July 29, 2014;

**“Spill Contingency Plan”** means a Plan developed to deal with unforeseen petroleum and hazardous materials events that may occur during the operations conducted under the Licence;

**“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” or “Waters”** means waters as defined in section 4 of the *Act*; and

**“Water Supply Facilities”** comprises the area and associated intake infrastructure at the Duval River, Water Storage Reservoir and Truck-fill Station, as described in the Application for Water Licence renewal and associated documents filed by the Applicant on July 29, 2014.

### **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 on the Appurtenant Undertaking with the Board no later than March 31<sup>st</sup> of the year following the calendar year being reported, containing the following information:
  - a. tabular summaries of all data generated under the “Monitoring Program”;
  - b. summary of modifications to the “Monitoring Program” in accordance with Part H, Item 12;
  - c. the daily, monthly and annual quantities in cubic metres of freshwater obtained from all sources;
  - d. the daily, monthly and annual quantities in cubic metres of each and all waste discharged; including the hazardous and non-hazardous waste accepted at the Solid Waste Facilities;
  - e. a summary of modifications and/or major maintenance work and/or investigations carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
  - f. a list of unauthorized discharges and summary of follow-up action taken;
  - g. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
  - h. Any updates or revisions for manuals and plans (*i.e., Operations and Maintenance, Abandonment and Restoration, QA/QC*) as required by changes in operation and/or technology;
  - i. a summary of any studies, reports and plans requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
  - j. 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 notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.
3. 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.
4. The “Monitoring Program” and compliance dates specified in the Licence may be modified at the discretion of the Board.
5. The Licensee shall, install flow meters or other such devices, or implement suitable methods required for the measuring of water volumes as required under Part H, Item 2

6. The Licensee shall, post the necessary signs, where possible, to identify the stations of the “Monitoring Program”. All signage postings shall be in the Official Languages of Nunavut, and shall be located and maintained to the satisfaction of an Inspector.
7. The Licensee shall, immediately report to the 24-Hour Spill Report Line at (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.
8. The Licensee shall, in relation to any application to renew or amend the Licence, include a Plan for Compliance for Board approval, clearly demonstrating 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.
9. 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/or 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.
10. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
11. The Licensee shall review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted in the form of an Addendum to be included with the Annual Report.
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 conditions 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. The Licensee shall ensure a copy of this Licence is maintained at the site of operations 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@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**(b) Inspector Contact:**  
Manager of Field Operations, AANDC  
Nunavut District, Nunavut Region  
P.O. Box 100  
Iqaluit, NU X0A 0H0  
Telephone: (867) 975-4295  
Fax: (867) 979-6445

14. 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.
15. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the NWB is received and acknowledged by the Manager of Licensing.
16. This Licence is assignable as provided for 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 use for all purposes under this Licence shall not exceed seventy-four thousand (74,000) cubic metres per year or maximum of two hundred and ninety-nine (299) cubic metres per day.
3. Where the use of water is of a sufficient volume that the source Water body may be drawn down, the Licensee shall submit to the Board for approval in writing the following: the volume required a hydrological overview of the water body, details of impacts, and proposed mitigation measures.
4. The Licensee shall maintain the Water Supply Facilities to the satisfaction of the Inspector.
5. The Licensee shall equip all water intake hoses with a screen of 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.
6. The Licensee shall not remove any material from below the ordinary High Water Mark of any water body unless approved by the Board in writing.
7. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.

8. Sediment and erosion control measures shall be implemented prior to and maintained as required during Hamlet operations, 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 in writing.
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 Concentration of any Grab
PH	Between 6 and 9
BOD <sub>5</sub>	120 mg/L
Total Suspended Solids	180mg/L
Faecal Coliforms	1 x 10 <sup>3</sup> CFU/100mL
Oil and grease	No visible sheen

3. The Sewage Disposal Facility shall be maintained and operated, to the satisfaction of an Inspector in such a manner as to prevent structural failure.
4. The Licensee shall dispose of and contain all Solid Wastes at the Solid Waste Disposal Facility or as otherwise approved by the Board in writing.
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 segregate and store all metals/vehicles within the Metal Storage Area in a manner as to prevent the deposit of deleterious substances into any water until such a time as proper disposal arrangements are made.
7. 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.
9. The Licensee shall implement measures to prevent hazardous materials and/or leachate from the Solid Waste Disposal Facility and Metal Storage Area from entering water.
10. The Licensee shall implement measures to control wind-blown litter at the Solid Waste Disposal Facility and Metal Storage Area.

11. The Licensee shall implement measures to control surface runoff from the Solid Waste Disposal Facility and Metal Storage Area.

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

1. The Licensee shall submit to the Board for approval, for construction drawings stamped and signed by a qualified Engineer registered in Nunavut, 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 consent from the Board, carry out Modifications to the Water Supply Facilities 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. such 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. The Modifications for which all of the conditions referred to in Part E, Item 2(a) through (d), have not been met, may only be carried out upon written approval from the Board.
4. The Licensee shall, within ninety (90) days of completion of Modification or Construction of facilities and/or infrastructure associated with the project, submit to the Board a Construction Summary Report along with stamped as-built plans and drawings, providing explanation to reflect any deviations from for construction drawings taking into account construction and field decisions and how they may affect the performance of engineered facilities.
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 and maintain sediment and erosion control measures prior to and during activities carried out under this Part, to prevent impacts to water resulting from the release of sediment and to minimize erosion.
7. With respect to earthworks, the deposition of debris or sediment into or onto any water body is prohibited. These materials shall be disposed a distance of at least thirty-one (31) metres from the ordinary High Water Mark in such a fashion that they do not enter the water.

8. The Licensee shall use material that is free of contaminants for construction, operation, and maintenance activities and that is obtained from approved sources and has been demonstrated not to be potentially acid generating and metal leaching.

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

1. The Licensee shall submit to the Board approval, within the 2014 Annual Report, the following revised Operation Plans 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*”, to take into consideration at a minimum, comments received during the Application review process and any operational changes/upgrades of facilities:
  - a. *Water Supply Facilities Operation and Maintenance Plan;*
  - b. *Waste Water Treatment Plant Operation and Maintenance Plan;*
  - c. *Solid Waste Disposal Facility Operation and Maintenance Plan.*
2. The Licensee shall submit to the Board for approval, within the 2014 Annual Report, a stand-alone Spill Contingency Plan that details spill responses and procedures for Water Supply, Sewage Disposal and Solid Waste Disposal Facilities Operations, in the format set out by the Consolidation of Spill Contingency Planning and Reporting Regulations R-068-93.
3. If the Plans referred to in Part F, Items 1 and 2 are not approved the Licensee shall make the necessary revisions and resubmit the Plan(s) within thirty (30) days following notification from the Board.
4. The Licensee shall implement the Plans specified in Part F, Item 1 and 2 as and when approved by the Board.
5. An inspection of all engineered facilities related to the management of water and waste shall be carried out by an Engineer (Civil, Municipal or Geotechnical) annually and before commissioning any facility. The Engineer’s report shall be submitted to the Board within sixty (60) days of the inspection, including a Cover Letter from the Licensee outlining an implementation plan addressing each of the Engineer’s recommendations.
6. The Licensee shall perform more frequent inspections of the engineered facilities at the request of an Inspector.
7. The Licensee shall review the Plans referred to in this Part as required by changes in operation and/or technology and modify the Plan accordingly. Revisions to the Plan are to be submitted in the form of an Addendum to be included with the Annual Report, unless directed otherwise by an Inspector.
8. 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 appropriately approved Spill Contingency Plan for the Hamlet of Pangnirtung. Take whatever steps are immediately practicable to protect human life, health and the environment;
- b. report the incident immediately via the 24-Hour Spill Reporting Line at (867) 920-8130 and to the AANDC 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 any preventative measures to be implemented.

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

1. 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 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. solid waste facility;
  - d. metal storage area;
  - 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.
2. If the Plan referred to in Part G, Item 1 is not approved, the Licensee shall make the necessary revisions and resubmit the Plan within thirty (30) days following notification from the Board.
3. The Licensee shall implement the plan specified in Part G, Item 1 as and when approved by the Board.
4. The Licensee shall complete all restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.

5. Areas that have been contaminated by hydrocarbons shall be reclaimed to meet objectives as outlined in the Government of Nunavut's Environmental Guideline for Site Remediation, January 2002. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon consultation and approval by the Government of Nunavut, Department of Environment and an Inspector.

**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 the Duval River	Active (Volume)
PAN-2	Raw Sewage from pump-out truck	New (Volume)
PAN-3	Effluent from Waste Water Treatment Facility	Active (Quality)
PAN-4	Run-off from Sludge Disposal Area	Active (Quality)
PAN-5	Run-off from the Solid Waste Disposal Facility	Active (Quality)
PAN-6	Run-off from Metals Storage Area	New (Quality)

2. The Licensee shall measure and record in cubic metres, the daily, monthly and annual quantities of water pumped at Monitoring Program Stations PAN-1 and at the Truck-fill Station, for all purposes.
3. The Licensee shall measure and record in cubic metres the daily, monthly and annual quantities of raw sewage offloaded from trucks at Monitoring Program Station PAN-2 for all purposes.
4. 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
pH	Conductivity
Total Suspended Solids	Oil and Grease (visual)
Nitrate-Nitrite	Ammonia Nitrogen
Chloride	Sulphate
Sodium	Potassium
Magnesium	Calcium
Total Hardness	Total Alkalinity
Total Phenols	Total Manganese
Total Arsenic	Total Aluminum
Total Cadmium	Total Cobalt
Total Copper	Total Chromium

Total Iron  
Total Mercury  
Total Zinc

Total Lead  
Total Nickel  
Total Organic Carbon - TOC

5. The Licensee shall sample at Monitoring Program Stations PAN-4, PAN-5 and PAN-6 once at the beginning, middle and near the end of discharge/run-off observed. Samples shall be analyzed for the parameters listed in Part H, Item 4:
6. 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.
7. Additional monitoring stations, sampling and analysis may be requested by an Inspector.
8. The Licensee shall submit to the Board for review, within the 2014 Annual Report, a Quality Assurance/Quality Control Plan that conforms to the guidance document *Quality Assurance (QA) and Quality Control (QC) Guidelines For Use by Class "B" Licensees in Collecting Representative Water Samples in the Field and for Submission of a QA/QC Plan* INAC (1996). The Plan shall be acceptable to an accredited laboratory and include a covering letter from the accredited laboratory confirming acceptance of the Plan for analyses to be performed under the Licence.
9. 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.
10. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
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 otherwise requested by an Inspector.
12. Modifications to the Monitoring Program including the Monitoring Program Stations and parameters may be made only upon written approval of the Board.
13. 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;
  - b. A description of how each Final Discharge Point is designed and maintained, if required; and
  - c. A description of the receiving environment.