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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: **3BM-GJO1828**

December 19, 2018

Ed Devereaux, SAO
Hamlet of Gjoa Haven
P.O. Box 200, Gjoa Haven, NU X0B 1J0

Shah Alam, P. Eng
Municipal Planning Engineer, GN, C&GS
Bag 200 Cambridge Bay, NU, X0B 0C0

Email: saogjoa@qiniq.com

Email: salam@gov.nu.ca

RE: NWB Replacement Licence No. 3BM-GJO1828

Dear Mr. Devereaux and Mr. Alam:

Please find attached the replacement Water Licence No. **3BM-GJO1828** issued to the Hamlet of Gjoa Haven 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 Agreement)*. 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 Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSTRA)*. However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least **three (3) months** prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public'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.¹

Sincerely,

Lootie Toomasie
Nunavut Water Board
Chair

LT/dd/rqd

Enclosure: Licence No. **3BM-GJO1828**
Comments – CIRNAC

Cc: Kitikmeot Distribution List

¹ Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), December 11, 2018.

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DECISION

LICENCE NUMBER: 3BM-GJO1828

This is the decision of the Nunavut Water Board (NWB) with respect to an application dated June 6, 2018, for a renewal of a Water Licence made by:

HAMLET OF GJOA HAVEN

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

Latitude: 68° 30' N and Longitude: 95° 53' W

DECISION

After having been satisfied that the application was for a location that falls outside of an area with an approved Land Use Plan and exempt from the requirement for screening by the Nunavut Impact Review Board (NIRB), as described within Section 12.4.3 / Schedule 12-1 of the *Nunavut Agreement*,¹ the NWB determined 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* (NWNSRTA or Act) and Article 13 of the *Nunavut Agreement*, 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 *Nunavut Agreement* and of the Act, waived the requirement to hold a public hearing and determined that:

Licence No. 3BM-GJO1318 be replaced with the Licence No. 3BM-GJO1828 subject to the terms and conditions contained therein. (Motion #: 2018-B1-035)

Signed this 19th day of December 2018 at Gjoa Haven, NU.

Lootie Toomasie
Nunavut Water Board
Chair

LT/dd/rqd

1 Nunavut Planning Commission, Conformity Determination, November 5, 2018.

I. BACKGROUND

The Hamlet of Gjoa Haven (the Hamlet) is located at Latitude 68° 30' N and Longitude 95° 53' W, on the South-East coast of King William Island, in the Kitikmeot Region of Nunavut, approximately 140 km SW of Taloyoak and 1,000 km NE of Yellowknife. The Hamlet is approximately 40 m above the sea level, and its topography is characterized by limestone lowlands covered by sand and gravel.

Features include till, fine-grained marine deposits, and extensive beaches, numerous lakes and ponds, covered with thin layer of tundra vegetation & grasses. Despite poor soil quality, various types of lichen, moss, willow, heather and wildflowers grow in the area. Wildlife in the area is represented mainly by ground squirrels, lemmings, weasels, arctic hares, arctic foxes, ringed seals and numerous species of birds and fish. The permafrost is continuous, extending to depths from 20 m to over 120 m. The active layer varies between 0.55 m and 0.25 m. The average annual precipitation in Gjoa Haven consists of 5 cm of rainfall and 25 cm of snowfall with mean precipitations of 8 cm. Climate of Gjoa Haven is reasonable summers and extremely cold winter, average mean temperature in January -39°C to -23°C and July high & low 13.9°C and 7.2°C.

The community has a population of approximately 1324 (2016), with the following municipal infrastructure:

- A Water Treatment Plant which draws water from the Swan Lake, transport it to the treatment plant through a 2.3 km buried line and stores it after treatment for trucked water to holding tanks in each building;
- A Sewage Disposal/Treatment Facility (Lagoon) which receives trucked sewage collected from holding tanks in each building and houses, with a wetland area between the lagoon and the ocean; and
- A Solid Waste Disposal/Management Facility, which includes a bulky metals disposal area, a hazardous waste oil storage area and a battery and other materials storage area next to the solid waste storage area.

The Hamlet of Gjoa Haven has held Water Licences with the Board since 1999, as outlined in Table 1.

Table 1: Project Licensing History

Licence No.	Date Issued	Comment
NWB3GJO9904	January 7, 1999	Water use 35,000 m ³ <i>per year</i> .
3BM-GJO0409	January 8, 2004	Water use 62,000 m ³ <i>per year</i> .
3BM-GJO1318	November 13, 2013	Water use 62,000 m ³ <i>per year</i> .
3BM-GJO1318 Amendment No. 1	June 16, 2015	Authorization for use of new Sewage Disposal Facility (lagoon).

II. PROCEDURAL HISTORY

On June 6, 2018, a request to renew the Licence was submitted to the Board by Government of Nunavut, Community and Government Services (GN-CGS) on behalf of the Hamlet of Gjoa Haven. The Application included the following documents:

- The 2017 Annual Report;
- The 2017 Water Licence Inspection Report;
- A list of sewage and solid waste sample collection Monitoring Stations;
- Analytical sampling summary for 2017;
- Application Summary in English;
- Application summary in Inuktitut; and
- Water Licence Renewal Application Form.

On October 15, 2018, the NPC provided communication indicating that the project proposal is a significant modification to the project because of the inclusion of a sludge drying pit, removal of contaminated soil, and spill remediation.¹ The project proposal therefore requires screening by the NIRB under section 12.4.3 of the *Nunavut Agreement* as amended, because it is for a component or activity that was not part of the original proposal and its inclusion is a significant modification of the project.

On October 26, 2018, GN-CGS provided the following letter as an update to the Application, indicating that they wish to remove from the scope of the Application, the contaminated soils, spills remediation and the sludge drying components. The inclusion of these components will be requested by GN-CGS once such facilities are installed and available for uses. The GN CGS indicated that they are working on a Study Project to determine the facility requirements, capacity and feasibility for waste facility improvement, upgrade or expansion for activities in the next 20 years.

- Update to the Renewal Application- Amendment Letter.²

On November 5, 2018, the NPC provided communication confirming the amendment to the application and indicating that the updated scope of the application is exempt from screening by the NIRB because the NPC is of the understanding that it does not change the general scope of the original project activities, and the exceptions noted in Section 12.4.3 (a) and (b) of the *Nunavut Agreement* do not apply.³

On November 7, 2018, following a preliminary internal technical review, the NWB concluded that the Application met the requirements of section 48(1) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA or Act) and forwarded notice of the Application to regulators, 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.

1 NPC File # 148882, Conformity Determination, Letter dated October 15, 2018.

2 GN-CGS Hamlet of Gjoa Haven Water Licence Renewal Application –Amendment, letter dated October 26, 2018.

3 NPC File # 148973, Conformity Determination, Letter dated November 5, 2018.

On December 11, 2018, comments were received from Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). No public concerns were expressed during the notice period. In consideration of the comments received, the NWB determined that a public hearing would not be required and proceeded with the application process.

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 replacement of Licence No. 3BM-GJO1318 with Licence No. **3BM-GJO1828**.

III. ISSUES

Term of the Licence

In accordance with the Nunavut Waters and Nunavut Surface Rights Tribunal Act s. 45, the NWB may issue a licence for a term not exceeding twenty-five (25) years. In determining the appropriate term of a licence, the Board takes into consideration several factors including but not limited to, the Licensee's past performance, compliance record and history, ability to comply with the terms and conditions included of a potential licence, interveners' comments and recommendations. The Licensee has requested a fifteen (15) year term for the licence issued to the undertaking. Although no objections were received by interveners regarding the 15 year term, the Licensee is required to update a number of Management Plans and Programs to reflect current conditions and a shorter term would facilitate this prior to the next Licence renewal. The Board has, therefore, granted a five (10) year term to the Applicant for the Replacement Licence. The Board believes that the term granted will provide the Licensee with adequate time to update required plans.

Annual Reports

As part of its obligation 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 is maintained on the public registry and is available to any interested parties upon request.

The NWB has also taken this opportunity to review the Annual Reports submitted in recent years and concluded that these reports generally meet Licence Requirement's, and that no reoccurring deficiencies have arisen. However, the Inspector has identified in the 2018 Water Licence Inspection Form, a number of issues that require action. The NWB strongly recommends that the Licensee address these issues and include applicable information in subsequent Annual Reports.

Updates to management plans

A condition has been carried over from the previous Licence, in PART F, to provide within 2018 Annual Report an addendum to the *Sewage Lagoon Operation and Maintenance Manual (O&M Manual)*, addressing the freeboard limit of the operational Sewage Disposal Facility, and to include existing wetland details (drawing(s) showing distance from water bodies, soil characteristics, permeability/hydraulic conductivity, and gradient), as per CIRNAC comments received during a previous review on May 8, 2015.

Water Use

The Municipality receives its freshwater supply from Swan Lake, which is located approximately 3.5 km north-west from the Hamlet. The freshwater transmission line from Swan Lake to the pump house includes a recirculation system to prevent the water lines from freezing and rupturing. The Licensee is requested to clarify in their 2018 Annual report whether the Water use volumes include water recirculated through the line. The NWB also recommends that the Licensee monitor water used for all purposes including direct discharge and the quantity of water used for recirculation purposes.

Water is stored in a single-cell reservoir, adjacent to the truck fill station, prior to primary treatment and disinfection, which is followed by distributed to the community. Under the previous licence, the use of 62,000 m³ of water per year was permitted, and the Licensee has requested no changes to the water quantity for all purposes under the renewal licence and continues to use less than the annual amount Licenced. The Board has, therefore, set the maximum water usage for all purposes specified in this Licence at 62,000 m³ per year or 170 m³ per day.

Deposit of Waste

Sewage

The Sewage Disposal/Treatment Facility is located approximately 1 km east from the Municipality. The Hamlet of Gjoa Haven is utilizing their new sewage lagoon constructed to the south of the old lagoon that went into operation in November 2013. The old lagoon has been closed/reclaimed according to the previously approved A&R Plan. The new facility is a single-cell rectangular shaped engineered lagoon and has been sized to a capacity of at least 58,000 m³ to meet the needs for next 25-30 years. The lagoon is designed and developed to hold raw sewage for 10-12 months during early winter to next summer (Sep-June), and decanting during late summer and fall (July-Aug). Raw sewage is collected from house tank through a vacuum truck, transported to the new lagoon and discharged into the lagoon via the truck discharge chute located at the northeast corner of the lagoon. Treated effluent will be decanted seasonally from the southwest corner of the lagoon using a portable pump. The pump will discharge effluent into the existing adjacent wetland area as a means of secondary polishing of the effluent.

Under the previous licence, a Plan entitled “*Sewage Lagoon Operation and Maintenance Manual*,” dated May 31, 2014, was provided with the previous Amendment Application and still remains applicable. Following review of the Plan, the NWB requested that the Licensee update the Plan with information on the freeboard limit that has been assigned to the sewage lagoon

facility, measures that are being taken to ensure that it is not exceeded, and details on the drainage wetland, as per CIRNAC comments. The Licencee has not yet provided this information and is requested to do so with the submission of the 2018 annual report.

Solid Waste

The Solid Waste Disposal/Management Facility for Gjoa Haven is located adjacent to the Sewage Disposal Facility approximately 1.5 km east of the community, southern from the Lagoon. Access to the site is via a gravel road. The Solid Waste Facility has three main areas:

- (i) area for general municipal waste disposal,
- (ii) area for bulky wastes, and
- (iii) area for hazardous waste.

The general municipal waste area is fenced but does not have a gate and so access to the community is not limited. Waste is generally piled and crushed within the fenced area and from time to time the Hamlet open burns suitable waste during the summer and fall periods on routine basis depending on weather.

Under the previous licence, a Plan entitled “*Hamlet of Gjoa Haven, Nunavut Solid Waste Treatment Facility Operation and Maintenance O&M Plan*,” dated August 15, 2013, was provided with the previous renewal application and still remains applicable. This O&M Plan is to assist Hamlet staff in the proper operation and maintenance of the Solid Waste Disposal Facility. The Board advises that this previously approved Plan shall continue to be implemented under Part F, Item 2 of the replacement licence.

Monitoring Program

Environmental Monitoring Plan

An “*Environmental Monitoring Program – Sample Collection Training Program*,” dated August 13, 2013 was included with the previous renewal application, and remains applicable. The document is to provide guidance/training on how to properly collect and submit water and waste water samples to ensure that the environmental monitoring program obtain results that accurately reflect the physical and chemical nature of the matrix being tested. This Program is established to collect data on water quality, assess the effectiveness of treatment for protection of public health and assess potential impacts to the environment associated with the municipal facilities. The Licencee shall continue to implement the Plan under Part H, Item 1.

The Licensee has previously identified “Monitoring Stations of Sewage and Solid Waste Sample Collection”, as required by Part D, Item 8 of the previous Licence. The Board requires if, during the term of this Licence, additional Final Discharge Points are identified, the Licensee shall submit the new Final Discharge Point’s pertaining information, within 30 days after the discharge point is identified and at least 60 days prior to discharging Effluent.

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

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

The requirement to submit a Quality Assurance / Quality Control (QA/QC) Plan is to provide the necessary checks and controls under the Licence for sampling, monitoring and reporting for Hamlet of Gjoa Haven. The purpose of the QA/QC Plan is to ensure that samples taken in the field as part of the Monitoring Program will maintain 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 “*Hamlet of Gjoa Haven Quality Assurance / Quality Control Plan*” included with the previous renewal application was developed by exp. Services Inc, and remains applicable. The Plan was approved by an analyst on August 13, 2013.

The NWB has included a requirement under Part H, Item 11, to annually review the QA/QC Plan and modify it as necessary. Revised QA/QC Plans 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 REPLACEMENT WATER LICENCE

Licence No. **3BM-GJO1828**

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 GJOA HAVEN

(Licensee)

P.O BOX 200 GJOA HAVEN, NUNAVUT, X0B 1J0

(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-GJO1828 TYPE "B"

Water Management Area: KING WILLIAM ISLAND WATERSHED (41)

Location: GJOA HAVEN
KITIKMEOT REGION, NUNAVUT

Classification: MUNICIPAL UNDERTAKING

Purpose: DIRECT WATER USE AND DEPOSIT OF WASTE

Quantity of Water use not to Exceed: 62,000 CUBIC METRES PER ANNUM OR 170 CUBIC METRES PER DAY

Date of Licence Issuance: DECEMBER 19, 2018

Expiry of Licence: DECEMBER 18, 2028

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

Lootie Toomasie,
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 Gjoa Haven in Kitikmeot Region, Nunavut (Latitude 68° 30' N and Longitude 95° 53' 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 *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* 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;

“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 Agreement” 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 the area and engineered Lagoon and decant structures designed to contain and treat sewage as described in the Application for Water Licence Amendment filed by the Applicant on January 27, 2015, and in the renewal Application of June 6, 2018, and illustrated in Drawings # 100 to # 105, Dillon Consulting Pr. No. 11-5029-1000;

“Solid Waste Disposal Facilities” comprises the area and associated structures designed to contain solid waste as described in the Applications for Water Licence renewal filed by the Applicant on October 9, 2003, August 18, 2013, and June 6, 2018, and illustrated in Drawing # 99-6790;

“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;

“Waste Disposal Facilities” means all facilities designated for the disposal of waste, and includes the Sewage Disposal Facilities and Solid Waste Disposal Facilities (including Hazardous Waste management area), as described in the Applications for Water Licence renewal filed by the Applicant on October 9, 2003 and August 18, 2013, and illustrated in Drawing # 99-6790;

“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 Swan Lake and/or Water Lake Water Supply, as described in the Applications for Water Licence renewal filed by the Applicant on October 9, 2003, August 18, 2013, and June 6, 2018, and illustrated in Drawing #s 02-0602-1000/1-4.

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 31st 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 13;
 - 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 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. a summary of any studies, reports and plans (e.g., Operation and Maintenance, Abandonment and Restoration, QA/QC) requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
 - 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 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.
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, 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.
9. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
10. 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.
11. 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.
12. 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

(b) Inspector Contact:
Water Resources Officer
Crown-Indigenous Relations and Northern Affairs Canada,
Nunavut District, Nunavut Region
P.O. Box 100

Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445

13. The Licensee shall submit an 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.
14. 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.
15. 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 freshwater processed by the Water Supply Facilities and/or used for municipal purposes from Swan Lake or as otherwise approved by the Board in writing.
2. The annual quantity of water use for all purposes under this Licence shall not exceed sixty-two thousand (62,000) cubic metres per year or one hundred seventy (170) 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 current Sewage Disposal Facilities or as otherwise approved by the Board.
2. All Effluent discharged from the Sewage Disposal Facilities at Monitoring Program Station GJO-4 shall meet the following effluent quality standards:

Parameter	Maximum Concentration of any Grab
Faecal Coliforms	1 x 10 ⁴ CFU/dl
BOD ₅	80 mg/L
Total Suspended Solids	100 mg/L
Oil and grease	No visible sheen
PH	Between 6 and 9

3. A Freeboard limit of at least 1.0 metre, or as recommended by a qualified Geotechnical Engineer and as approved by the Board in writing, shall be maintained at all dams, dykes, or structures intended to contain, withhold, divert or retain water or wastes.
4. The Licensee shall provide at least ten (10) days notification to an Inspector, prior to initiating any decant of the Sewage Lagoon.
5. The Sewage Disposal Facility shall be maintained and operated, in such a manner as to prevent structural failure.
6. The Licensee shall dispose of and permanently contain all Solid Wastes at the Solid Waste Disposal Facility or as otherwise approved by the Board in writing.
7. The Licensee shall implement measures to prevent hazardous materials and/or leachate from the Solid Waste Disposal Facility from entering water.
8. Licensee shall submit, within 30 days after the discharge point is identified and at least 60 days prior to discharging Effluent, the following information for any new Final Discharge Points or changes made to existing Final Discharge Points during the term of the licence:
 - a. Plans, specifications and a general description of each Final Discharge Point together with its specific geo-referenced location;
 - b. A description of how the additional Final Discharge Point is designed and maintained.
9. 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.
10. The Licensee shall submit to the Board for approval a stand-alone Sludge Management

Plan at least nine (9) months prior to the planned removal of sludge from the lagoon.

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. such Modifications are consistent with the NIRB Screening Decision;
 - d. 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
 - e. 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 erosion control measures during activities carried out under this Part, to prevent impacts to water resulting from the release of sediment and 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.

PART F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE

1. The Licensee shall implement the Plan entitled “*Hamlet of Gjoa Haven Sewage Treatment Facility Operation and Maintenance (O&M) Plan*” dated May 31, 2014 that was submitted as additional information with the previous Amendment Application. The Licensee shall submit within the 2018 Annual Report an addendum to this Plan that includes the following information:
 - a. The freeboard limit that has been assigned to the sewage lagoon facility;
 - b. measures that are being taken to ensure that it is not exceeded; and
 - c. details on the drainage wetland.
2. The Licensee shall implement the Plan entitled “*Hamlet of Gjoa Haven, Nunavut Solid Waste Treatment Facility Operation and Maintenance (O&M) Plan*” dated August 15, 2013 that was previously approved by the Board.
3. 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 Spill Contingency Plan as provided in the Operation and Maintenance Plan. 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 CIRNAC 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 three (3) 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. abandoned water and waste 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.
2. The Licensee shall complete all restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.
 3. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee's operations.
 4. In order to promote growth of vegetation and the needed microclimate for seed deposition, all disturbed surfaces shall be prepared by ripping, grading, or scarifying the surface to conform to the natural topography.
 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 implement the Plan entitled "Environmental Monitoring Program – Sample Collection Training Program" dated August 13, 2013 that was previously approved by the Board and was submitted as additional information with the Application.

(continues on next page)

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

Monitoring Program Station Number	Description	Frequency	Status
GJO-1	Raw Water Supply at Swan Lake	Monthly	Active (Volume)
GJO-2	Effluent Final Discharge Point from Solid Waste Disposal Facility	Monthly (May to August)	Active (Quality)
GJO-3	Raw Sewage at truck offload point	Monthly	Active (Volume)
GJO-4	Effluent Final Discharge Point from Sewage Disposal Facility	Monthly (May to August)	Active (Quality)
GJO-5	Solid Waste leachate retention inside berm	Sample collected when decanting requires	Active (Quality)

3. The Licensee shall measure and record, in cubic metres, the daily, monthly and annual quantities of water extracted for all purposes at Monitoring Program Station GJO-1.
4. The Licensee shall sample monthly at Monitoring Station GJO-2 and GJO-4 during the months of May to August, inclusive. Sample shall be analyzed for the following parameters:

BOD	Faecal Coliforms
pH	Conductivity
Total Suspended Solids	Ammonia Nitrogen
Nitrate-Nitrite	Oil and Grease (visual)
Total Phenols	Sulphate
Sodium	Potassium
Magnesium	Calcium
Total Arsenic	Total Cadmium
Total Copper	Total Chromium
Total Iron	Total Lead
Total Mercury	Total Nickel
Total Zinc	

5. The Licensee shall measure and record in cubic metres the daily, monthly and annual quantities of raw sewage offloaded from trucks at Monitoring Station GJO-3 for all purposes.

6. The Licensee shall provide the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where sources of water are utilized for all purposes.
7. The Licensee shall sample before decanting at Monitoring Station GJO-5. Samples shall be analyzed for the parameters stated in Part H, Item 4.
8. Additional sampling and analysis may be requested by an Inspector.
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 annually review the QA/QC Plan and modify it as necessary. Revised QA/QC Plans shall be submitted to the Board with a current approval letter from an accredited lab and shall meet the standards set out in Part H, Item 9 and Part H, Item 10 of the Licence.
12. 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.
13. Modifications to the Monitoring Program including the Monitoring Program Stations and parameters may be made only upon written approval of the Board.