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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: **3BM-CHE1523/Renewal**

May 15, 2015

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RE: NWB Renewal Licence No. 3BM-CHE1523

Dear Mr. Aggark and Ms. Lusty:

Please find attached Licence No. **3BM-CHE1523** issued to the Hamlet of Chesterfield Inlet by the Nunavut Water Board (NWB) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (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 the use of Water and deposit of Waste 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 (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,

A handwritten signature in dark ink, appearing to read 'T. Kabloona', written over a horizontal line.

Thomas Kabloona
Nunavut Water Board
Chair

TK/bm/pb

Enclosure: Renewal Licence No. **3BM-CHE1523**
 Comments – AANDC

Cc: Kivalliq Distribution List

¹ Aboriginal Affairs and Northern Development Canada (AANDC), April 13, 2015

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DECISION

LICENCE NUMBER: 3BM-CHE1523

This is the decision of the Nunavut Water Board (NWB) with respect to a complete application received February 25, 2015 for the renewal/amendment of a Water Licence made by:

HAMLET OF CHESTERFIELD INLET

to allow for the use of Water and deposit of Waste for a Municipal undertaking that includes the operation of a Water Supply Facility, Sewage Disposal Facility, and Solid Waste Disposal Facility at the Hamlet of Chesterfield Inlet, which is located within the Kivalliq Region, Nunavut at the following general geographical coordinates:

Latitude: 63° 21' N Longitude: 90° 42' W

DECISION

After having been satisfied that the application was in conformity with the Keewatin Regional Land Use Plan¹ as determined by the Nunavut Planning Commission (NPC) and exempt from the requirement for screening as described within Schedule 12-1 by the Nunavut Impact Review Board² in accordance with Article 12 of the *Nunavut Land Claim 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 representation made by the interested party, 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-CHE1013 be renewed as Licence No. 3BM-CHE1523 subject to the terms and conditions contained therein. (Motion #: 2015-B1-005)

Signed this 15th day of May 2015 at Gjoa Haven, NU.



Thomas Kabloona
Nunavut Water Board, Chair

TK/bm/pb

¹ Nunavut Planning Commission (NPC) Conformity Determination, April 28, 2015.

² Nunavut Impact Review Board (NIRB) Screening Exemption Decision, March 23, 2015.

I. BACKGROUND

The Hamlet of Chesterfield Inlet (Hamlet or Licensee) is located on the south shore of Chesterfield Inlet along the western shoreline of Hudson's Bay, approximately 101 km northeast of Rankin Inlet, within the Kivalliq region of Nunavut. This area resides in a continuous permafrost zone along the Canadian Shield, and is defined topographically by numerous rock ridges and scattered lakes. The mainly Precambrian granite and gneiss bedrock is covered extensively by tundra vegetation, with pockets of sand-gravel beach deposits, scattered boulders, muskeg and exposed rock poking through the tundra surface.

The Hamlet of Chesterfield Inlet is responsible for supplying potable Water to and managing Waste by the community of approximately 412 (2015) individuals. To this end the Hamlet operates Water and Waste management facilities for which a Water Licence from the Nunavut Water Board is required. Community infrastructure includes:

- A Water Supply Facility which draws Water from First Lake (also known as Puiqsuk Lake), and consists of a Water intake, pump shelter, overland pipeline, reservoir, and pump-house with truck fill. A 3.2 km overland pipeline fills the reservoir with Water from First Lake once per year. Water from the reservoir is then treated in the pump-house and transported to holding tanks in each community building by Water trucks. Upgrades to the pump-house facility occurred in 2010, for which the current Licence provides corresponding conditions.
- A Sewage Disposal/Treatment Facility which consists of two truck offload Sewage Holding Cells located approximately 2.2 km west of the community. Sewage is retained in the Holding Cells before discharging through unrestricted overflow spillways into a natural tundra Wetland and wetland ponds, where the Effluent travels approximately 800 to 1000 metres prior to discharging into Finger Bay. There are two diversion berms located in the Sewage Disposal Facility.
- The Solid Waste Disposal Facility (SWDF) consists of a fenced disposal area for municipal solid Waste (MSW) approximately 2.2 kilometres west of the Hamlet, a separate bulk metal disposal area approximately 200 metres south of the fenced MSW area, and two drum storage areas approximately 150 metres and 270 metres southeast of the MSW area. The MSW area possesses two sea-cans used for storage of household hazardous Waste. There is one flow diversion berm in the SWDF that directs runoff to the Wetland area. The Hamlet manages a landfarm facility within the SWDF, which is authorized under Licence 1BR-CIL1217, held by Government of Nunavut, Community and Government Services (GN-CGS).

II. FILE HISTORY

The Northwest Territories Water Board issued Licence N6L4-1538 to the Hamlet of Chesterfield Inlet, on August 1, 1993. This five (5) year licence for a Municipal undertaking allowed for the use of 20,000 cubic metres of Water annually and the deposit of Waste generated by the Hamlet. The Licence expired on July 31, 1998.

After assuming regulatory authority for freshwater resources in Nunavut, the NWB issued on December 15, 2003, Licence NWB3CHE0308 to the Hamlet of Chesterfield Inlet to allow for the use of Water and disposal of Waste associated with Municipal activities. The Licence expired on December 31, 2008.

On October 1, 2010, a three (3) year renewal licence, 3BM-CHE1013 was issued to the Hamlet with an expiry date of September 30, 2013. The Licence allowed for the use of 20,000 cubic metres of Water annually and the continued deposit of Waste in support of a Municipal Undertaking, as well as conditions to accommodate upgrades to the Sewage Disposal Facility.

III. APPLICATION PROCEDURAL HISTORY

On February 25, 2015, the NWB received from GN-GCS, on behalf of the Hamlet of Chesterfield Inlet (The Hamlet or The Licensee) an application and supporting documents for the renewal and amendment of Licence 3BM-CHE1013. The documents submitted with the Application include the following:

- 2009 INAC Inspection Report
- Application for Water Licence Amendment dated February 25, 2015
- Hamlet of Chesterfield Inlet Authorization Letter
- Hamlet of Chesterfield Inlet Community Background
- Compliance Plan
- Cover Letter
- DFO Response Water Licence 3BM-CHE1013, September 11, 2014
- Executive Summary
- Chesterfield Inlet Sewage System Improvements - Record Drawing, October 2011

On March 11, 2015, following a Preliminary Technical Review by the NWB, the Application was distributed to interested parties for comments. All parties were invited to make representations to the NWB within thirty (30) days. The Board received comments from Aboriginal Affairs and Northern Development Canada (AANDC) on April 13, 2015.

Also on March 11, 2015, in accordance with s.11.5.10 of the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* ("NLCA"), the NWB sent the project proposal to the Nunavut Planning Commission, (NPC) to determine whether the project proposal is in conformity with an approved land use plan. In accordance with s.13.5.1 of the NLCA, the NWB requested that the Nunavut Impact Review Board (NIRB) determine whether the project requires environmental screening.

NIRB informed the NWB on March 23, 2015, that the project is exempt from Screening; and NPC responded on April 28, 2015, that the project conforms to the Keewatin Regional Land Use Plan.

Based on 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-CHE1013 as Licence No. 3BM-CHE1523.

IV ISSUES

The following sections provide background information relevant to terms and conditions included in this Licence in the context of submissions received and/or the Board's rationale. It should be noted that under this renewal/amendment Licence 3BM-CHE1523, the Board has removed or modified, where appropriate, terms and conditions associated with the previous licence.

Licence Scope

The scope of the Application is for the renewal/amendment of Licence 3BM-CHE1013 to allow for the continued use of Water and deposit of Waste in support of a Municipal undertaking. The term requested for the renewal-amendment licence is twenty-one (21) years. The amendment aspect of the application targets the removal of specific conditions from the Licence.

Compliance

The NWB is aware of recurring, non-compliance issues regarding the Hamlet's previous licence. The Hamlet has generally not abided by its monitoring requirements as dictated under Part H of the expired Licence; also, it did not submit as-built design drawings for the Sewage Disposal Facility upgrades that occurred in 2010, or a Quality Assurance/Quality Control Plan for its Monitoring Program. The Board recognizes however, that the Hamlet's Compliance record is improving: the Hamlet submitted monitoring results in 2012 and 2014, and submitted a Compliance Plan as additional information with the current Application, which outlines corrective action and associated timelines for the outstanding non-compliance issues in the community.

The Board has accepted the submitted Compliance Plan, finding that it provides an appropriate schedule to address the remaining areas of non-compliance in the community. The Board expects the Hamlet to carry out the objectives detailed in the Plan pursuant to their respective timelines.

AANDC Comments on Terms and Conditions

During the Application review stage AANDC provided a list of recommended changes to the General Terms and Conditions of the Chesterfield Inlet Licence. The Board believes that the recommended changes require further discussion between the NWB and AANDC, and used its discretion to implement only the changes it felt clearly augmented the functionality of the Licence at the current time.

Term of the Licence

The Licensee has requested a twenty-one (21) year term for the renewal/amendment 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 for the renewal/amendment licence, the Board

took into consideration several factors including intervener's comments, the Licensee's compliance history, and rationale included in the Application.

AANDC Water Resources supported the Hamlet's request for a twenty-one (21) year licence term, stating that it is important to recognize the institutional capacity issues that many Nunavut municipalities face, whereby they often struggle to process Water licence renewal applications every 2-5 years. Although the Board understands the logic behind AANDC's request, it disagrees that an extended licence-term is appropriate for a Licensee that has not demonstrated a genuine commitment to fulfill the conditions of its licences. The Board must incorporate the Licensee's "past performance" into consideration when granting a licence as required by s.57(b) of the *NWNSRTA*, and it is the Board's conviction that compliance history falls under this definition. Ultimately, the Board cannot be seen as tacitly permitting non-compliant operations by issuing licences of extended length in instances where issues of non-compliance remain. Once the Hamlet addresses the outstanding issues related to its licence, such as adequate monitoring, the Board is open to reconsidering a longer licence term.

The Board generally does not issue licenses for longer than five (5) years to municipalities with outstanding compliance issues; however, given the Hamlet's improving compliance record, and the Licensee's schedule to address the outstanding compliance issues as outlined in the Compliance Plan, submitted as additional information with the Application, the Board has issued the licence for a term of eight (8) years, and believes that this time-period will provide a realistic opportunity for the Licensee to prove to the Board that it can meet the long-term requirements of the Licence, as well as establish a consistent compliance record with respect to the requirements under the terms and conditions of its licence.

Annual Reports

Under the reporting section of the Licence, Part B, Item 1, the Licensee is required to submit, on an annual basis, a report that pertains to the use of Water and the deposit of Waste. This information is kept in the NWB's public registry and made available to interested persons upon request. In addition, the NWB maintains annual reporting information on its FTP site, which can be accessed using the following link:

<ftp://ftp.nwb-oen.ca/1%20PRUC%20PUBLIC%20REGISTRY/>

The Board notes that there have been instances where the Licensee had failed to submit, on time, copies of documents pertaining to annual reporting requirements. The Board reminds the Licensee that the annual reporting requirements of the licence should be adhered to at all times so as to help maintain full compliance with respective terms and conditions in the licence.

Water Supply

The community's Water distribution system consists of a Water intake, pump shelter, overland pipeline, reservoir, and pump-house with truck fill. Water is pumped once per year from First Lake, approximately 2.6 kilometres southwest of the community, along an 3.2 kilometre overland pipeline to a reservoir located roughly 150 metres west of the community, where it is stored until it is extracted and treated by the pump-house and distributed to buildings in the community by Water trucks.

The Licensee requested in its Application that the amount of Water-use authorized under Part C of the Licence be increased from 20,000, to 23,000 cubic meters annually in order to meet the twenty-one (21) year Water-use demand for the Hamlet of Chesterfield Inlet. To justify the request the Licensee provided, as additional information included with the Application, a tabular summary of the projected Water consumption demands for Chesterfield Inlet through to the year 2036. The Board finds the Licensee's Water-use projections defensible and has thereby increased the total Water-use authorized in the Licence to 23,000 cubic metres per year, or 299 cubic metres per day.

The Board recognizes that the Hamlet fills its reservoir during a relatively short time period during the summer—usually in August. In review of the Application, the NWB relied on the Nunavut Waters Regulations (Regulations) and the definition of “Use” provided by the Act. In due consideration, all Water taken from First Lake to fill the reservoir would qualify under the definition as “use of Water”. Therefore, the NWB has determined that Water extracted from the source Water supply, for any purposes, is considered as a Use of Water and the Licensee is reminded of its responsibility to record daily quantities of Water directly extracted from First Lake at Monitoring Program Station CHE-1. The Licensee shall also calculate daily, monthly and annual Water volumes all freshwater processed at the pump-house.

The Licensee is also advised that according to the Schedule 2 of the Regulations any Water use of 300 cubic metres or more per day and any use of Waters related to the storage of 60,000 cubic metres or more of Water would require a Type “A” Water Licence. If the Licensee records volumes of Water extracted from First Lake in excess of 299 cubic metres per day during reservoir refill, or if the Hamlet expands the reservoir volume capacity to greater than 60,000 cubic metres, the Hamlet will be required to obtain a “Type A” Licence by applying to the Board for an amendment to its current Licence.

The Board also notes that the Water supply reservoir possesses a storage capacity of 23,000 cubic metres, and although this volume does not exceed the Hamlet's authorized Water use volume, the Hamlet's approved *Water, Sewage and Solid Waste Operations and Maintenance Manual (2010)* indicates that the reservoir's entire storage capacity is not utilized due to a crack in the bedrock present near the top of the reservoir. Water is thus typically filled to just below the bedrock crack. The reduced storage capacity of the reservoir may present a problem as the community's annual Water use demand approaches 23,000 cubic metres during the next two decades, as predicted by its own Water use projections. To alleviate the Board's concerns on this issue, the Licensee shall provide a quantifiable assessment of the reservoir's storage capacity to just below the bedrock crack, and an outline detailing the Hamlet's strategy to ensure an adequate Water volume is maintained in the reservoir once the Hamlet's annual Water-use demands surpass the readjusted volume amount, as a component of the updated Water Supply O&M Manual (See Section IV: Operation and Maintenance Manuals)

It should be noted that upgrades to the Water Supply Facility occurred in 2010, for which the Board has not received design or as-built drawings for at the time of licence issuance. This Licence therefore contains conditions to submit stamped as-built drawings for these upgrades, stamped by an Engineer.

Waste Deposit

Details included in the application indicate that the undertaking is expected to generate the following Waste types: Sewage, Sewage Sludge, Non-hazardous Solid Waste, Hazardous Waste, Bulky Items/Scrap metal, and Waste oil. The following facilities have been developed to handle the Waste generated by the Hamlet:

Sewage Treatment

The Chesterfield Inlet Sewage Disposal Facility consists of two Sewage dumping stations, two Sewage Holding Cells, a tundra Wetland area and two flow diversion berms. Sewage is collected by municipal Sewage trucks at each household and offloaded into both Holding Cells—although the Application states that Holding Cell 1 is primarily utilized—where it receives primary treatment before automatically discharging through a natural-overflow berm outlet into the Wetland. Sewage then slowly migrates through 800 to 1000 metres of small ponds and wetland terrain before entering the marine environment of Finger Bay on Hudson Bay.

Resulting from consultation with the Department of Fisheries and Oceans (DFO), Licence 3BM-CHE1013 required the Licensee under Part D, Item 3, to provide confirmation to the NWB on the fish-bearing status of the Wetland area. The NWB did not receive any such confirmation before the submission of the renewal Application; however, the Application did include as additional information a letter authored by DFO⁴, which indicated that the Department could not verify the fish-bearing status of the Wetland due to limited information, and recommended that an environmental consultant with expertise in fish habitat assessment in the north be retained to confirm fish presence or absence, stressing that generally a minimum of two (2) years of fish sampling is required to confirm whether a waterbody is fish bearing.

As the Hamlet generally disregarded the previous commitment to investigate fish habitat in the Wetland area, the Board has adopted as conditions in this Licence DFO's recommendation for the Licensee to conduct a Fish-Habitat Assessment of the Wetland Area to confirm fish presence or absence. The Assessment will not require Board approval, however, the Licensee shall provide with the 2017 Annual Report, a summary of the findings, as well as a letter from DFO confirming the Assessment as acceptable.

Sludge Removal

Licence 3BM-CHE1013 required pursuant to Part F, Item 2, the submission of a Sludge Management Plan at least three (3) months prior to the removal of sludge from the Sewage Disposal Facilities. Although it appears that the Hamlet has not removed any sludge from the Sewage Holding Cells, the Board sees no evidence that the Hamlet has undertaken any steps to assess the quantity and quality of accumulated sludge from which the need for removal may be assessed. The *Water, Sewage and Solid Waste Operations and Maintenance Manual (2010)* (2010) recommends that the Hamlet author a Sludge Management Plan once sludge sampling has occurred and the results have been analyzed.

⁴ Letter from Stu Niven, DFO, to Megan Lusty, GN-CGS, September 11, 2014.

Proper sludge management is crucial to ensure that a Holding Cell administers primary treatment to Sewage effectively, and the Board believes the Hamlet should demonstrate that it has systematic procedures in place to ensure that this activity is facilitated properly. Therefore, the Licence requires the Licensee to include appropriate sludge assessment and management procedures in an updated Sewage Waste Management Plan, to be submitted to the Board for approval in writing (See Section IV: Operation and Maintenance Manuals).

Solid Waste

The Hamlet's SWDF consists of a fenced MSW disposal area, a bulk metal Waste disposal area, and two drum storage areas. The MSW area contains two sea-cans used for the storage of household hazardous Waste.

In its review of the Application the NWB observed that a lack of proper Waste segregation and signage at the SWDF was noted in AANDC Water Resource's comments on the file, the 2014 AANDC Inspection Report and in fact the Hamlet's own O&M Manual (2010). Waste segregation not only reduces the amount of Waste permanently contained in a landfill by allowing for the separation and reuse or elimination of certain types of solid Waste, but it is a crucial preventative measure to mitigate deleterious leachate from entering surrounding Water bodies. The Board reminds the Licensee that it has committed to segregating solid Waste in *Water, Sewage and Solid Waste Operations and Maintenance Manual (2010)*, and the Board expects the Hamlet to fulfill these commitments.

The Board also found little information regarding decommissioning or remediation of the decommissioned landfill present between the fenced MSW area and the bulk metal disposal area. Licence 3BM-CHE1013 required to the Licensee to investigate the site through a geotechnical inspection, however, as no geotechnical inspections occurred under the previous licence information surrounding the state of the decommissioned landfill remains sparse. Further communication with GN-CGS⁵ revealed that the site was used to dispose of solid and Sewage Waste prior to the 1990s, and presently no information regarding decommissioning of the site can be located; however, GN-CGS confirmed that the area is now fully encapsulated in the Wetland area, and any potential deleterious leachate resulting from the legacy of the site would be recognized at Monitoring Stations CHE-2 and CHE-4. It is the Licensee's responsibility to analyze the annual monitoring data from these stations and identify any elevated concentrations of metals or nutrients that may occur due to the legacy of the decommissioned landfill. Also, in the absence of a Decommissioning Report, the current Licence upholds the condition for the Licensee to investigate the site during the next geotechnical inspection.

The Licensee is encouraged to consult AANDC's comments made during the Application regarding the SWDF.

Landfarm

Within the Application the Hamlet indicated that it manages a landfarm located within the SWDF, which is authorized under Licence 1BR-CIL1217, held by Government of Nunavut,

⁵ Email Communication, Megan Lusty, GN-CGS, to Brady MacCarl, NWB, April 24, 2015.

Community and Government Services (GN-CGS). The Board reminds the Licensee that if the Licensee in the future desires to transition the landfarm into the municipal licence, the Licensee will need to cancel Licence 1BR-CIL1217, and apply for an amendment to include the operation of the landfarm facility within the scope of the current Licence.

Construction

Although the Board has no record of receiving as-built drawings for the Sewage Facility upgrades during the previous licence term, pursuant to Part E, Item 4 of previous licence, it recognizes that the Hamlet submitted as additional information with the current Application drawings entitled, “Chesterfield Inlet Sewage System Improvements – Record Drawing, October 2011”, which were identified as the final drawings for the Sewage Disposal Facility upgrades. In further discussion with the NWB, GN-CGS revealed that the drawings could not be signed as the design Engineer was not on-site during construction of the upgrades.⁶ In the future, the Board reminds the Licensee that as-built drawings must be signed and stamped by an Engineer licensed to practice in Nunavut in order to be accepted by the Board. The Licence, under Part E, Item 4, has maintained the condition to submit as-built drawings and a Construction Summary Report for the Modification or Construction of facilities.

Moreover, the *Water, Sewage and Solid Waste Operations and Maintenance Manual* (2010) indicates that upgrades to the Water Supply Facility occurred in 2010. The Licensee shall submit stamped, as-built drawings for these upgrades.

Operation and Maintenance Manuals

The Hamlet currently possesses an approved Operations and Maintenance Manual submitted during the Application for Licence 3BM-CHE1013, entitled, *Water, Sewage and Solid Waste Operations and Maintenance Manual, Chesterfield Inlet, NU (Nunami Stantec, May 2010)*, containing:

- Water Distribution System Operations and Maintenance (Section 3);
- Sewage Disposal Facility Operations and Maintenance (Section 4);
- Solid Waste Disposal Facilities Operations and Maintenance (Section 5);
- Emergency Response Plan (Section 6); and
- Spill Contingency Plan (Section 6.2)

The NWB conducted a review of the aforementioned document and found that, while reasonable and generally in good working order, it contains a sizeable amount of outdated information, not least, it does not incorporate Water Supply Facility upgrades that occurred in 2010, it does not fully recognize the completion of upgrades to the Sewage Disposal Facility, and it contains Licence 3BM-CHE0308 as the reference licence in the appendix. As revisions to the O&M Manual will necessitate the resubmission of the entire Manual for Board approval in writing, the Board has taken this opportunity to require the Licensee to submit updated O&M Manuals as independent documents, which the Board believes will allow for easier review by interested parties and revision by the Licensee in the future. In revising the Plans, the Licensee is advised to consult comments provided by AANDC during the course of the current Licence

⁶ Phone conversation, Megan Lusty, GN-CGS, Brady MacCarl, NWB, March 10, 2015.

Application.

Pursuant to Part F, Items 1, 2, 3, and 4, of the current Licence, the Licensee shall submit updated, stand-alone Operation and Maintenance (O&M) Manuals to the Board for approval in writing for Water Supply, Sewage Disposal, Solid Waste, and Emergency Response and Spill Contingency. The Licensee indicated in the Compliance Plan submitted as additional information with the Application that an updated O&M Manual would be submitted to the Board by August 31, 2015. Typically, the Board restricts submission timelines to less than ninety (90) days following the issuance of a Licence in lieu of exceptional circumstances; however, in consideration that the Licensee currently possesses an O&M Manual approved by the Board, and has proactively designated a submission date for O&M revisions, the Board has adopted the Hamlet's proposed submission date as the deadline for the submission of the revised O&M Manuals. The updated O&M Manuals should reflect current operating procedures, government guidelines, contact information, Monitoring Program Stations, and community infrastructure, as well as where relevant, plans to upgrade or construct infrastructure related to Water use and Waste Disposal.

Until the submission of the revised plans, the Licensee shall continue to employ the relevant operating procedures in its current O&M Manual (2010).

The Licensee did not perform any geotechnical inspections of engineered facilities related to Water and Waste management during the expired licence term, and requested in the Application for the removal of Part F, Item 3 from Licence 3BM-CHE1013, which required annual geotechnical inspections. Instead, the Licensee proposes annual inspections of relevant facilities be performed by a Municipal Engineer, who will then recommend appropriate measures for further repair or study, such as geotechnical inspection, if any issues are found with berms or other structures inherent to the facilities. The NWB understands the elevated costs in Nunavut associated with hiring professional consultants including geotechnical engineers, especially for municipalities which often possess limited financial resources. However, the Board feels that the total absence of geotechnical assessment for an engineered facility during a licence-term constitutes an unacceptable risk for the structural integrity of the facility, and thereby the facility's ability to manage or process Water resources effectively. To mitigate this dilemma, the Board has allowed for annual inspections of all engineered facilities related to management of Water and Waste to be completed by a Municipal Engineer; however, the Licensee shall still perform a geotechnical inspection of all engineered facilities related to the management of Water and Waste at least one (1) year prior to the expiry of the Licence. These conditions are reflected in Part F, Item 6, and Part F, Item 7, of the Licence.

Abandonment and Restoration

Part G, Item 2 of the Licence maintains the condition to submit to the Board for approval in writing, an Abandonment and Reclamation (A&R) Plan at least six (6) months prior to abandoning any facilities or the construction of new facilities to replace existing ones.

The Licensee requested in the Application that the condition for the submission of an Abandonment and Restoration Plan for a former sewage lagoon in the Hamlet, pursuant to Part G, Item 2 of Licence 3BM-CHE1013, be removed from the Licence, citing the evidence that no decommissioned sewage lagoon ever existed in the community. Prior to the sewage treatment

system improvements completed in 2010, the Hamlet discharged Sewage directly to the Wetland. This claim is defended by the 2009 INAC Inspection Report that states, “Sewage from the community is taken to a dumping station where it is released into a lowland area adjacent to the municipal dump. No lagoon is present in the community”.

The Board has removed references to the old sewage lagoon and the associated condition for an Abandonment and Restoration Plan from the Licence.

As the Licensee shall be submitting updated O&M Manuals, the Board has included conditions in the Licence for the resubmission as an independent document the A&R Plan included in *Water, Sewage and Solid Waste Operations and Maintenance Manual, Chesterfield Inlet, NU (Nunami Stantec, May 2010)*.

Monitoring

For a number of years the Hamlet did not execute most of its monitoring requirements as dictated under Part H of the expired licence. Also, even during years where the Hamlet did perform Water quality monitoring it did not complete the required number of sampling events for each Station pursuant to the number required under the licence. Lastly, the Board wishes to highlight that the Hamlet attached the Monitoring Results for 2012 in the 2013 Annual Report, possibly in an attempt to pass them off as the sampling results for that year; regardless of the circumstances, the NWB stresses that this move does not help the Hamlet establish a consistent record of compliance with the Board.

The Board reminds the Licensee that without consistent environmental monitoring the Board and other interested parties possess few avenues to properly assess the performance of the Hamlet’s Water delivery and Waste management infrastructure.

In an effort to improve monitoring compliance, the NWB discussed the Monitoring Program with GN-CGS on April 22, 2015⁷, and consequently the Board has added an additional Monitoring Station at the outlet of Sewage Holding Cell 2. Importantly, GN-CGS indicated during this conversation that Holding Cell 2 is rarely used and exists primarily as a backup Sewage offload point, and accordingly, the Board will only expect Water quality monitoring to occur at this Station during periods of observed flow.

The 2014 AANDC Inspection Report also revealed that the Hamlet has not recorded the daily volume of Water extracted from the point Water source at First Lake, as required by Licence 3BM-CHE1013 under Monitoring Station CHE-1; instead, the Hamlet has been recording Water volumes extracted from the reservoir pump-house. The Board stresses that the current licence reinstates the conditions to measure daily, monthly and annual Water-use at both the reservoir pump-house, and at the intake in First Lake.

In its review of the Hamlet’s current O&M Manual (2010) the NWB recognized that Monitoring Station CHE-3 is identified as the Sewage Truck Release Point, which is not consistent with Licence 3BM-CHE1013 or the current Licence. The 2014 AANDC Inspection Report confirms that sampling for Monitoring Station CHE-3 is correctly being conducted at

⁷ Email from Megan Lusty, GN-CGS, to Brady MacCarl, NWB, March 9, 2015.

the outflow of Holding Cell 1. The Licensee shall rectify this discrepancy in its O&M Manuals.

Quality Assurance/Quality Control

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 the Hamlet of Coral Harbour. The purpose of the QA/QC Plan is to ensure that samples taken in the field as part of the Monitoring Program will be reflective and representative of the environment in which the samples are taken in terms of physical, chemical, and biological characteristics. These procedures are generally developed from literature and guidelines, and are intended to promote good practices in environmental management.

Although the NWB never received a QA/QC Plan from the Hamlet during the expired licence period, GN-CGS committed in its Compliance Plan, submitted as additional information with the Licence Application, that a QA/QC Plan would be submitted to the NWB as a stand-alone document, and would include a letter from an accredited laboratory confirming the QA/QC Plan as acceptable. The Board has reflected this commitment under Part H, Item 9 of the Licence. The laboratory should be accredited by the Canadian Association for Laboratory Accreditation (CALA).



NUNAVUT WATER BOARD
WATER LICENCE RENEWAL

Licence No. 3BM-CHE1523

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

HAMLET OF CHESTERFIELD INLET

(Licensee)

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

(Mailing Address)

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

Licence Number/Type: 3BM-CHE1523 TYPE "B"

Water Management Area: WILSON WATERSHED (13)

Location: HAMLET OF CHESTERFIELD INLET
KIVALLIQ REGION, NUNAVUT

Classification: MUNICIPAL UNDERTAKING

Purpose: DIRECT USE OF WATER AND DEPOSIT OF WASTE

Quantity of Water use not
to Exceed: 23,000 CUBIC METRES PER ANNUM OR 299 CUBIC
METRES PER DAY

Date of Licence Issuance: MAY 15, 2015

Expiry of Licence: MAY 14, 2023

This Licence renewal and amendment, 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

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

2. Definitions

In this Licence **3BM-CHE1523**

“**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;

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

“**Application**” means the complete amendment-renewal application and supporting documents filed with the NWB by the Government of Nunavut–Community Government Services (GN-CGS) on behalf of Hamlet of Chesterfield Inlet on February 25, 2015;

“**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*;

“**Dam Safety Guidelines**” means the *Canadian Dam Association (CDA) Dam Safety Guidelines (DSG)*, January 1999 or subsequent approved editions;

“**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**” in respect of an effluent means an identifiable discharge point of a facility beyond which the operator of the facility no longer exercises control over the quality of the effluent;

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

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

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

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

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

“**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 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 Holding Cells” comprises two engineered Holding Cells used to store and pretreat Sewage before discharge into the Wetland Area, as described in the Application received by the Board on February 25, 2015, the *Schematic Design Report, Tundra Wetland Sewage Treatment System Design*, January 9, 2009, and the *Water, Sewage and Solid Waste Operation and Maintenance Manual, Chesterfield Inlet*, May 2010;

“Sewage Disposal Facility” comprises the Wetland treatment area and engineered Holding Cells and diversion berms designed to contain and treat Sewage as described in the Application received by the Board on February 25, 2015, the *Schematic Design Report, Tundra Wetland Sewage Treatment System Design*, January 9, 2009, and the *Water, Sewage and Solid Waste Operation and Maintenance Manual, Chesterfield Inlet*, May 2010;

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

“Solid Waste Disposal Facility” comprises the area and associated structures designed to contain solid Waste as described in the Application received by the Board on February 25, 2015, and the *Water, Sewage and Solid Waste Operation and Maintenance Manual, Chesterfield Inlet*, May 2010;

“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;

“Sump or Sumps” A structure or depression that collects, controls, and filters liquid waste before it is released to the environment. This structure should be designed to prevent erosion while allowing percolation of liquid Waste;

“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 Facility” means all facilities designated for the disposal of Waste, and includes the Sewage Disposal Facility and Solid Waste Disposal Facility, as described in the Application received by the Board on February 25, 2015;

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

“Water Supply Facility” comprises the intake infrastructure at First Lake and reservoir, as described in the Application received by the Board on February 25, 2015;

“Wetland Area” comprises an approximately 800 to 1000 metre vegetated strip immediately downgradient of the two Sewage Holding Cells, characterized by four major ponds and several intermittent ponds, some small streams and open, boggy, wet tundra areas (natural wetlands) between them through which overland flow occurs, before discharging to Finger Bay, and described in *Water, Sewage and Solid Waste Operation and Maintenance Manual, Chesterfield Inlet*, May 2010.

3. **Enforcement**

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

PART B: GENERAL CONDITIONS

1. The Licensee shall file an Annual Report with the Board, no later than March 31 of the year following the calendar year reported, which shall contain the following information:
 - a. Tabular summaries of all data generated under the “Monitoring Program”, highlighting any exceedances at the Final Discharge Point;
 - b. summary of modifications to the “Monitoring Program” in accordance with Part H, Item 11;

- 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 sewage Waste discharged; and the monthly and yearly quantities of every type of Waste—re: landfill, bulky metal, oil and hazardous—accepted at the Solid Waste Facility; the total volume of sludge removed from the Sewage Holding Cells and the disposal method;
 - e. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facility, 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 (*Including Operations and Maintenance Manuals, 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. Summary of any inspections completed by federal or territorial authorities, geotechnical or municipal engineers, on undertakings related to Waste disposal, Water use or reclamation activities
 - k. 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, Item 1.
 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, 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.

8. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
9. 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.
10. 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.
11. 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:

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

12. 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.
13. 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.
14. 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 for municipal purposes from First Lake, at the truck-fill station, via the Water Supply Facility or as otherwise approved by the Board.
2. The daily quantity of Water use for all purposes under Part C, Item 1, shall not exceed

two-hundred and ninety-nine (299) cubic metres, to a maximum of twenty-three thousand (23,000) cubic metres per year.

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: details of Water volume involved, hydrological overview of the Water body, details of impacts, and proposed mitigation measures.
4. The Licensee shall maintain the Water Supply Facility to the satisfaction of the Inspector.
5. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw Water at a rate such that fish do not become impinged on the screen.
6. The Licensee shall not remove any material from below the ordinary High Water Mark of any Water body unless authorized 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. The Licensee shall implement sediment and erosion control measures prior to and maintain 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, upon commissioning, to the Sewage Disposal Facility or as otherwise approved by the Board.
2. All Effluent discharged from the Sewage Disposal Facility at Monitoring Program Station CHE-4 shall not exceed the following Effluent quality limits:

Parameter	Maximum Concentration of any Grab Sample
BOD ₅	80 mg/L
Total Suspended Solid	100 mg/L
Fecal Coliform	1x 10 ⁴ CFU/100mL
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 Waste.
4. The Sewage Disposal Facility shall be maintained and operated, to the satisfaction of an Inspector and in such a manner as to prevent structural failure.

5. The Licensee shall conduct a Fish Habitat Assessment of the tundra Wetland to confirm fish presence or absence, and submit for review by the Board a summary of the findings, as well as a letter from DFO confirming the Assessment as acceptable, with the 2017 Annual Report.
6. The Licensee shall dispose of and permanently contain, or as allowed under Part D, Item 9, all Solid Wastes at the Solid Waste Disposal Facility or as otherwise approved by the Board in writing.
7. The Licensee shall segregate and store all hazardous materials and/or Hazardous Waste within the Solid Waste Disposal Facility in such a manner as to prevent the deposit of deleterious substances into any Water, until such a time that the materials have been removed for proper disposal at an approved facility.
8. The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood to prevent the deposition of Waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding Waters, unless otherwise approved by the Board in writing
9. The Licensee shall provide a minimum of ten (10) days' notice to an Inspector, of the intent to open burn municipal Waste in accordance with the Government of Nunavut's Environmental Guideline for the Burning and Incineration of Solid Waste (2012), at the designated location at the Solid Waste Disposal Facility, including the details of the types and quantity of Waste to be burned, proposed dates, protocols to be followed, ultimate disposal of residual ash and the person responsible for the activity.
10. The Licensee shall include the decommissioned landfill site located between the fenced MSW area and the bulk metal disposal area in the Hamlet's next geotechnical inspection of engineered facilities, as referred to in Part F, Item 7.

PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION

1. The Licensee shall submit to the Board for approval in writing, for-construction design drawings, stamped and signed by a qualified Engineer registered in Nunavut, at least sixty (60) days prior to the construction of any dams, dykes or structures intended to contain, withhold, divert or retain Water or Wastes.
2. The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facility and Waste Disposal Facility 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, 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 the for construction drawings, taking into account construction and field decisions and how they may affect the performance of engineered facilities.
 5. The Licensee shall submit to the Board for review within ninety (90) days of Licence issuance, stamped, as-built drawings and a Construction Summary Report for the Water Supply Facility pump-house upgrades that occurred in 2010, as described in the Application submitted February 25, 2015.
 6. 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.
 7. The Licensee shall implement and maintain sediment and erosion control measures prior to and during activities carried out under this Part, to prevent negative impacts to Water resulting from the release of sediment and to minimize erosion.
 8. With respect to earthworks, the deposition of debris or sediment into or onto any Water body is prohibited. These materials shall be disposed of at 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.
 9. The Licensee shall only use material that is free of contaminants, for construction, operation, and maintenance activities and that is obtained from approved sources, 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 for approval in writing by August 31, 2015, a stand-alone Water Supply Facilities Operations and Maintenance Plan, which includes appropriate conditions and operating procedures to accommodate the upgrades that occurred to the Water Supply Facility in 2010, and an assessment of the storage capacity of the Water Supply reservoir, to ensure that it can properly accommodate the maximum Water-use volume allowed under this Licence.
2. The Licensee shall update and resubmit as a stand-alone document, the Solid Waste Disposal Facilities Operation and Maintenance Manual by August 31, 2015, to the

Board for approval in writing. The Plan shall be prepared where appropriate in accordance with the *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories (GNWT-MACA, 1996)*, and the *Guidelines for the Planning, Design, Operations and Maintenance of Modified Solid Waste Sites in the Northwest Territories (GNWT-MACA, 2003)*. This updated Manual shall include but not be limited to the following:

- a. Solid Waste Disposal Facilities Operation and Maintenance Plan;
 - b. Hazardous Waste Management Plan;
 - c. Monitoring Program Station descriptions and locations—including GPS.
3. The Licensee shall update and resubmit as a stand-alone document the Sewage Waste Management Plan by August 31, 2015, to the Board for approval in writing. The Plan shall be prepared where appropriate in accordance with the *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories (GNWT-MACA, 1996)*. This updated Manual shall include but not be limited to the following:
 - a. Sewage Disposal Facilities Operation and Maintenance Plan;
 - b. Sewage Sludge Management Plan;
 - c. Monitoring Program Station descriptions and locations—including GPS.
4. The Licensee shall update and resubmit as a stand-alone document the Emergency Response and Spill Contingency Plan by August 31, 2015, to the Board for approval in writing. The Plan will be prepared where appropriate in accordance with the *Guidelines for Spill Contingency Planning (AANDC, 2007)*
5. Until the Plans referred to in Part F, Items 1, 2, 3, and 4, are approved by the Board, the Licensee shall adhere to the procedures prescribed in the *Water, Sewage and Solid Waste Operations and Maintenance Manual (Nunami Stantec, 2010)*, previously approved by the Board.
6. An inspection of all engineered facilities related to the management of Water and Waste shall be carried out by an Engineer at a minimum of once annually, and before commissioning any engineered facility related to the management of Water and Waste. 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 to address each of the Engineer's recommendations.
7. An inspection of all engineered facilities related to the management of Water and Waste shall be conducted by a Geotechnical Engineer in accordance with the Canadian Dam Safety Guidelines, at least one (1) year prior to the expiry of the Licence, during the open Water period (June/July/August). The Geotechnical Engineer's report shall be submitted to the Board for review within sixty (60) days of the inspection, including a cover letter from the Licensee outlining an implementation plan to address the Engineer's recommendations.
8. The Licensee shall perform more frequent inspections of the engineered facilities at the request of an Inspector.

9. If during the period of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, subject to the Act and the *Spill Contingency Planning and Reporting Regulations, 2006 (Nu) 068-93*, the Licensee shall:
 - a. employ the appropriately approved Spill Contingency Plan for the Hamlet of Chesterfield Inlet. Take whatever steps are immediately practicable to protect human life, health and the environment;
 - b. report the incident immediately via the NWT/NU 24-Hour Spill Reporting Line at (867) 920-8130 and to the AANDC Manager of Field Operations at (867) 975-4295; and
 - c. for each spill occurrence, submit to the Inspector not later than thirty (30) days after initially reporting the event, a detailed report that provides the necessary information on the location (including the GPS coordinates), amount and type of spilled product, 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.
10. The Licensee shall, in addition to Part F, Item 9, regardless of the quantity of releases of harmful substances, report to the NWT/NU Spill Line if the release is near or into a Water body.

PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall resubmit as a stand-alone document, for review by the Board, its Abandonment and Restoration Plan within ninety (90) days of the date of issuance of this Licence.
2. The Licensee shall submit to the Board, for approval in writing, an updated Abandonment and Restoration Plan, as referred to in Part G, Item 1, at least six (6) months prior to abandoning any facility or upon submission of the final design drawings for the construction of new facilities to replace existing ones. Where applicable, the updated Plan shall include information on the following:
 - a. Water intake facility;
 - b. the Water treatment and Waste disposal sites and facilities;
 - c. abandoned Water and Waste facility;
 - d. petroleum and chemical storage areas;
 - e. any site affected by Waste spills;
 - f. leachate prevention;
 - g. an implementation schedule;
 - h. maps delineating 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 related to Water use, Waste deposit to Water, or

appurtenant undertakings related to Water use and/or deposit of Waste to Water, subject to the act and regulations.

3. The Licensee shall complete all restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.
4. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee's operations.
5. 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.
6. 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 and implement the following Program:

Monitoring Station ID	Description	Status
CHE-1	Raw Water supply intake at First Lake	Active (volume)
CHE-2	Runoff from the Solid Waste Disposal Facility	Active (quality)
CHE-3	Effluent from the Sewage Holding Cell 1	Active (quality)
CHE-3a	Effluent from Sewage Holding Cell 2	New (quality)
CHE-4	Final Discharge Point for Effluent from the wetland treatment area prior to Finger Bay (Compliance Point)	Active (quality)

2. 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 CHE-1, and Water extracted at the Water Supply Facility pump-house.

3. The Licensee shall sample at Monitoring Program Stations CHE-3, CHE-3a and CHE-4, once per month in May, June, July and August during periods of observed flow, to be analyzed for the following parameters:

Biochemical Oxygen Demand – BOD ₅	Faecal Coliforms
Total Suspended Solids	pH
Conductivity	Nitrate-Nitrite
Oil and Grease (visual)	Total Phenols
Magnesium	Calcium
Sodium	Potassium
Chloride	Sulphate
Total Hardness	Total Alkalinity
Ammonia Nitrogen	Total Zinc
Total Cadmium	Total Iron
Total Cobalt	Total Manganese
Total Chromium	Total Nickel
Total Copper	Total Lead
Total Aluminum	Total Arsenic
Total Mercury	Total Organic Carbon (TOC)

4. The Licensee shall carry out inspections at Monitoring Program Stations CHE-2, CHE-3, CHE-3a and CHE-4 weekly from May to August inclusive, to determine presence of Effluent or Water flow, in order to fulfill the monitoring requirements of Part H, Item 3. A record of inspections shall be retained and made available to an Inspector upon request.
5. The Licensee shall sample Monitoring Program Station CHE-2 once per month in May, June, July and August, during periods of observed flow. Samples shall be analyzed for the parameters listed in Part H, Item 3, as well as TPH (Total Petroleum Hydrocarbons), PAH (Polycyclic Aromatic Hydrocarbons) and BTEX (Benzene, Toluene, Ethylbenzene, Xylene).
6. Additional monitoring stations, sampling and analysis may be requested by an Inspector.
7. The Licensee shall measure and record the annual quantities of sludge removed from the Sewage Holding Cells along with the methods of storage, treatment, and disposal. This information shall be included in the Annual Report.
8. The Licensee shall conduct all sampling, sample preservation and analyses 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 a laboratory certified by the Canadian Association of Environmental Analytical Laboratories (CAELA).
9. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025 for all required analyses. The accreditation shall be current and in good standing.

10. The Licensee shall submit to the Board for information, within ninety (90) days following Licence issuance, a Quality Assurance/Quality Control Plan based on 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 QAQC Plan* (INAC, 1996). The Plan shall include a cover letter from an accredited laboratory confirming acceptance of the Plan for the monitoring and analyses to be performed under the Licence.
11. The Licensee shall annually review the Quality Assurance/Quality Control Plan in Part H, Item 10 and modify it as necessary. Proposed modifications shall be submitted to the accredited laboratory for approval prior to submission to the Board.
12. The Licensee shall include all of the data and information required by the Monitoring Program complete with an interpretation and discussion of the results, in the Licensee's Annual Report, as required per Part B, Item 1, or as requested by an Inspector.
13. Modifications to the Monitoring Program may be made only upon written approval of the Board.