



WATER LICENCE INSPECTION FORM

☒ Original  
☐ Follow-Up Report

Licensee		Licensee Representative	
Senior Administrative Officer Hamlet of Gjoa Haven P.O. Box 200, Gjoa Haven, NU X0B 1J0		O'Brien Kydd	
Licence No. / Expiry		Representative's Title	
3BM-GJO1318 EXP. Nov 12, 2018		A/Senior Administrative Officer	
Land / Other Authorizations		Land / Other Authorizations	
Date of Inspection		Inspector	
August 20, 2014		A.Keim	
Activities Inspected			
<input type="checkbox"/> Camp	<input type="checkbox"/> Drilling	<input type="checkbox"/> Mining	<input type="checkbox"/> Construction
<input type="checkbox"/> Roads/Hauling	<input type="checkbox"/> Other: Water Discharge	<input checked="" type="checkbox"/> Other: Municipal	<input type="checkbox"/> Reclamation
<input type="checkbox"/> Fuel Storage			

Conditions:		A - Acceptable	C - Concern	U - Unacceptable	NA – Not Applicable	NI – Not Inspected					
Water Use		Condition	Comment	Site Conditions		Condition	Comment	Haz/Mat Management		Condition	Comment
Intake/Screen	NI			Water Management Structures				Storage		C	
Flow Measure. Device	A	1		Culverts / Bridges		NA		Spills		NI	
Source: SWAN Lake				Drainage		NA		Spill Plan		C	
Water Use: 27,382,694.6 l	C	1		Erosion / Sediment		NA					
Recirculation ( y /n)	Y			Mitigation Measures		NA		Administrative			
				Reclamation Activities		A		Records		A	
				Materials Storage		C		Reports		C	
Waste Disposal				Signage		C		Plans		C	
Waste Water	U	1						Notifications		NA	
Solid Waste	C	1		Monitoring				Other			
Hazardous Waste	A			Sample Collection / Analysis		C		Non-Compliance			
*The number in the comments field will correspond with specific comments provided below.											
Samples taken by Inspector:			Location(s): AANDC Inspectors collected Raw Water samples from lake Fundo at the								
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Intake location, Effluent sample from the ditch and leach samples from within the SWMA								

SECTION 1	<input checked="" type="checkbox"/> Comments (s. __)	<input type="checkbox"/> Non-Compliance with Act or Licence (s. __)	<input type="checkbox"/> Action Required (s. __)
Administration:			
<p>Following the expiry of the Municipal Water License for the community of Gjoa Haven in January of 2009, an application for renewal was submitted to the Nunavut Water Board in March of that year. Over the course of the next 14 months there were a number of documents submitted to the Board by the Government of Nunavut on behalf of the Licensee.</p> <p>In July of 2010 The Nunavut Water Board completed an administrative review of the file and determined that in addition to requiring the Licensee to submit a Plan for Compliance the following submissions were required prior to the file being eligible for review for renewal;</p> <ul style="list-style-type: none"><li>• Submission of outstanding annual reports for 2004 – 2008;</li><li>• Identification of each Final Discharge Point of the existing Sewage Disposal Facility</li><li>• Submission of as-built drawings for the water intake modification</li><li>• Submission of a written summary and photographs of culvert installation and creek alignment</li><li>• Submission of an Operations and Maintenance Manual for the sewage and solid waste disposal facilities</li><li>• Identification and a detailed report regarding the measures taken following sewage lagoon berm failures in the community.</li></ul> <p>A Plan for Compliance and other documents were filed with the NWB on behalf of the Licensee by the Government of Nunavut in July of 2011, a full year following the request by the Board. The Plan for compliance was eventually rejected by the Board as being incomplete and a new Compliance Plan was ordered.</p> <p>In July of 2012 the Community of Gjoa Haven, after five years of operation without a Water License was included in a list of five communities that formed part of an Inspector Direction issued by Aboriginal Affairs and Northern Development Canada. That Direction was served on the Minister of Community and Government Services and required the submission of Compliance Plans and a time line to achieve both compliance with the act and Licensing by the Board.</p> <p>In December of 2012 the Government of Nunavut and their consultants submitted a revised Compliance Plan and two outstanding Annual Reports.</p> <p>Over the course of the first six months of 2013 the Government of Nunavut and their consultants submitted the required Plans and Manuals to the Nunavut Water Board. The Nunavut water Board then sent the application out for review for 30 days to regulators.</p> <p>Following this on November 13, 2013 the Nunavut Water Board issued renewal License to the Municipality of Gjoa Haven. The</p>			



issued license is to be in force for a term of five years. It is recommended that the renewal application for the License be submitted six months prior to the expiry date of the License.

## Inspection

### Water Use:

During the period of Inspection the following were noted:

- Chemical storage at both the holding/distribution building and the intake pump station requires attention.
- Chlorine residual records reflect elevated to very high levels
- A water flow By-pass had been installed over the winter allowing a direct discharge of water from the building without it re-entering the recirculation system.
- Water from the Utilidor line was subject to a controlled direct discharge from the plant for a total of 74 days between February and April to prevent the pipeline from freezing. The total usage for this period has been calculated to be 74 days @ 16 hours for par @ 8 L per second for a total of 38,361,600 liters of water used during this period.
- Total water usage recorded by the municipality is 27,382,694.6 L
- Total water usage to date for Gjoa Haven since January 1<sup>st</sup> is 65,744,294.6 L. License limit is 62,000,00 l

It was noted that in 2013, as confirmed by the contractor on site at the time of the Inspection, that the pump house did the same thing as initially reported in the inspection report for a total of 62 days at the same discharge rate. This however was done through a length of hose out the back door of the pumping/distribution building as the bypass had not been installed at that time.

This Water usage however, was not reported as required by the Licensee and in fact does not agree with the information submitted by the Regional engineer in the 2013 Annual Report. The Inspector is concerned that given the amount of water used for the last two years, coupled with the expected continuation this coming winter that the community requires a class A license based on the volume of water being used. It is of concern that this has not been brought forward by the Licensee nor the Government of Nunavut and in fact has not been reported accurately in submissions to the inspector and the board over the last two years.

Given a renewal class B license has been issued by the Nunavut Water Board already, the Inspector will require that an amendment application be submitted by the Licensee and the Government of Nunavut to ensure continued compliance. This application should be submitted within 90 days of receipt of this report.

### Waste:

#### Solid Waste Management Area

During the period of Inspection the Inspector attended the Municipal Solid Waste management Area. The area was found to have been organized and segregated to a greater extent then on previous inspections. Noted on site were the following improvements in the site;

- Drums of waste oil and other unknowns were found to have been moved from outside the facility and placed inside on a strip of liner. These drums had been palletized and were ready for proper labeling, repacking and shipment off site.
- It was also noted that the site where the barrels had been moved from is contaminated and that these soils were to be used as cover material for the Municipal Waste Management Area as a land farm does not exist within the community.
- Batteries had been consolidated into one area and were ready for the next step including packaging
- The Municipal waste management area had been leveled with heavy equipment and plans to use more cover material were noted by the stockpile of materials closer to the gate area.
- There remains a great deal of work to do to sort and segregate hazardous wastes within the community and at the Solid Waste Management Area however this was a very positive first step.

### Waste Water:

As identified in the 2013 Water License Inspection, a new Waste Water Lagoon has been constructed in the community. The lagoon was constructed without the authority of a License and has been commissioned by the Government of Nunavut on it's own. The Nunavut Water Board has issued a new license that incorporates the new Lagoon and sets the criteria for the Abandonment and Restoration of the Old lagoon.

Specifically, the Water License reads as follows;

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### 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.

On August 20<sup>th</sup> the Inspector attended the offices of the Nunavut Water Board and determined that the required plan had been

submitted 2 weeks prior. The Plan had not been sent out for comment or reviewed by Regulators or the Nunavut Water Board technical staff.

A review of the Abandonment and Reclamation Plan submitted on behalf of the Licensee and the Government of Nunavut by Dillion Consulting revealed the following ;

Section 3.1 Sewage Treatment and Disposal from Existing Lagoon <sup>1</sup>

*“Discharge of effluent from the lagoon into the wetland area should occur around mid-August. Prior to discharge the effluent will be sampled and the results submitted to the Nunavut Water Board. Sampling will be in compliance with the Water Licence, Part D, 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 <sup>4</sup> CFU/dl
BOD <sub>5</sub>	80 mg/L
Total Suspended Solids	100 mg/L
Oil and grease	No visible sheen
PH Between	6 and 9

*“Discharge will occur at a controlled rate so as not to overwhelm vegetation within the wetland. The wetland will be able to provide better polishing through greater nutrient uptake and removal from the effluent.”*

However, on August 20th, 2014 during the period of Inspection it was noted by the Inspector that the wall of the Lagoon had been breached by an excavator down to below the level of the remaining effluent and sludge and was allowed to drain out in an uncontrolled manner from the lagoon system into the wetland contrary to the license and the Act. No sampling results had been submitted to the Nunavut Water Board nor the Inspector prior to the breach taking place.

Additionally, contrary to the submitted Abandonment and Reclamation Plan the following was also identified;

3.3 Infrastructure Removal <sup>2</sup>

*“When the sludge has been removed from the lagoon, the lagoon can be decommissioned and deconstructed. Infrastructure removal at the site will be limited to removal of the existing lagoon berms and discharge pipe. Material from the berms can be used to cover over the lagoon and grade the site. In order to promote soil stability, the area should be seeded with natural vegetation. Depending on the nature of the soil, topsoil or soil amendments may be required in order to support vegetative growth.”*

*“There are no buildings at the site of the former sewage lagoon. The pipe outflow will be removed from the site and disposed of in the solid waste facility. Signs for the newly constructed site will be erected. Existing signs must be taken down and replaced with signs to notify the public that the site is closed. Any old signs, fencing and available gates will be removed and disposed of in the solid waste facility.”*

However on August 20<sup>th</sup>, 2014 during the period of the Inspection the Inspector did witness and document that an excavator on site at the time of the decommissioning was found to be loading material from the berm walls of the lagoon and transporting that material off site to the location of the New lagoon to augment the size of the truck turn around.

On August 22<sup>nd</sup>, 2014 following a verbal stop work order being issued to the Contractors on site as well as the Government of Nunavut’s Project Officer in charge of the Project the Inspector returned to site and found that work had continued and that materials had continued to be taken from the berm walls around the lagoon and placed at the New Waste Water Treatment facility and now additionally were being used in road construction around the community of Gjoa haven.

On August 26<sup>th</sup>, 2014 following a review of the Legislation and confirmation that work had continued on the project even after a Stop work order had been issued by the Inspector a written Inspector’s Direction to cease all works related to the Project and to repatriate the materials from the site was issued by AANDC on the Government of Nunavut, Department of Community and Government services.

It is acknowledged as of the writing of this report all work as outlined and ordered in the Direction has been substantially completed by the Government of Nunavut and while some work remains to be undertaken on the actual Abandonment and Restoration, in accordance with an approved plan, the Direction was, as of October 15<sup>th</sup>, 2014 rescinded by AANDC.

SECTION 2	<input type="checkbox"/> Comments (s. __)	<input checked="" type="checkbox"/> Non-Compliance with Act or Licence (s. __)	<input type="checkbox"/> Action Required (s. __)
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Non-compliance related to the license; 3BM-GJO1318

Part B (1) Failure to submit complete and accurate Annual Reports

Part B (2) Failure to include all required parameters in the monitoring program and sampling conducted an accordance with the issued License.

Part B (3) Failure to comply with the Monitoring Program

Part B (6) Failure to install all signage at the appropriate locations.

Part C (2) Failure to stay within the Total water usage allocation set by the License.

Part D (9) Failure to use materials for construction and maintenance activities that originated form an approved source and had been demonstrated not to be potentially acid generating or metal leaching.

Part G Failure to submit and have approved prior to undertaking any work all Abandonment and Restoration Plans.

Part H – Failure to fully implement the requirements listed under the Monitoring Program.

<sup>1</sup> Page 5 Abandonment and Reclamation Plan Hamlet of Gjoa Haven, NU 11-5029 Gary Strong - Project Manager

<sup>2</sup> Page 6 Abandonment and Reclamation Plan Hamlet of Gjoa Haven, NU 11-5029 Gary Strong - Project Manager

**Compliance Plan**  
Part B (1) Failure to submit Annual Reports for 2004 , 2005.  
Part B (1) Failure to fine accurate and complete Annual reports ( 2012, 2013)  
Part B (2) Failure to fully implement and submit complete reports on the Monitoring Program  
Part B (5) Failure to post all signage as required  
Part D (5) Failure to submit for review a Plan for Capital Improvements  
Part D (7) Submission of a Solid Waste Management Strategy  
Part D (8) Failure to identify a final Discharge Point  
Part G (all) Failure to adhere to the monitoring Program.

SECTION 3

☒ Comments (s.\_\_\_\_)

☐ Non-Compliance with Act or Licence, (s.\_\_\_\_)

☐ Action Required (s.\_\_\_\_)

The Community of Gjoa haven has made great efforts to come into compliance with the newly issued License and to work on Solid Waste Management within the community. This is excellent work and should be recognized. Additionally the commitment over and above just compliance with the issued License that the community has shown by taking part in the Take Back the Tundra – End of Life Vehicle Program in the community goes far and again beyond what was expected.

The Licensee continues to do good work and should be encouraged by their results and the positive effects this will have within the community.

The lack of reporting and inaccurate reporting with respect to the use of water in the community is troubling. The volumes used were easily calculated based on the daily pumping times, volumes and dates where the diversions took place. This was not reported in the annual; report nor was it, in a proactive way brought to the attention of the Nunavut Water Board in an effort to find a solution or to amend the License. This omission is to be addressed by the Licensee and the Government of Nunavut within the next 90 days following receipt of this report.

The Licensing requirements and specifically the issue of Abandonment and Restoration Plans and the obligation placed on the Licensee to have those Plans approved prior to undertaking work on site has been addressed in this case. The adherence to those approved plans is also an issue that I hope now has also been addressed. There appears to be a need for increased awareness with respect to legislative compliance, Licensing requirements and the overall communication and respect with regulators that needs to be emphasised within the Department of Community and Government Services , Government of Nunavut, to ensure these kinds of offences to not recur.

Additionally, it is incumbent on the Licensee to ensure that parties acting ont heir behalf are acting in accordance with the legislation and the issued license.

Photo Log			
Date	Authorization	Camera	Inspector
August 20 2014	3BM-GJO1318	Sony Cyber shot	A. Keim



Figure 1 Water intake / transfer pumping station. Double walled fuel tank -





Figure 2 Chlorine tank and pump in in-take/ pumping station



Figure 3 Spill Kit at Pumping Station





Figure 4 Piped in Diversion for Direct Discharge from Truck fill building



Figure 5 Piped in Direct discharge





Figure 6 Chlorine storage in Truck fill station



Figure 7 Chlorine station # 2 at Truck fill station

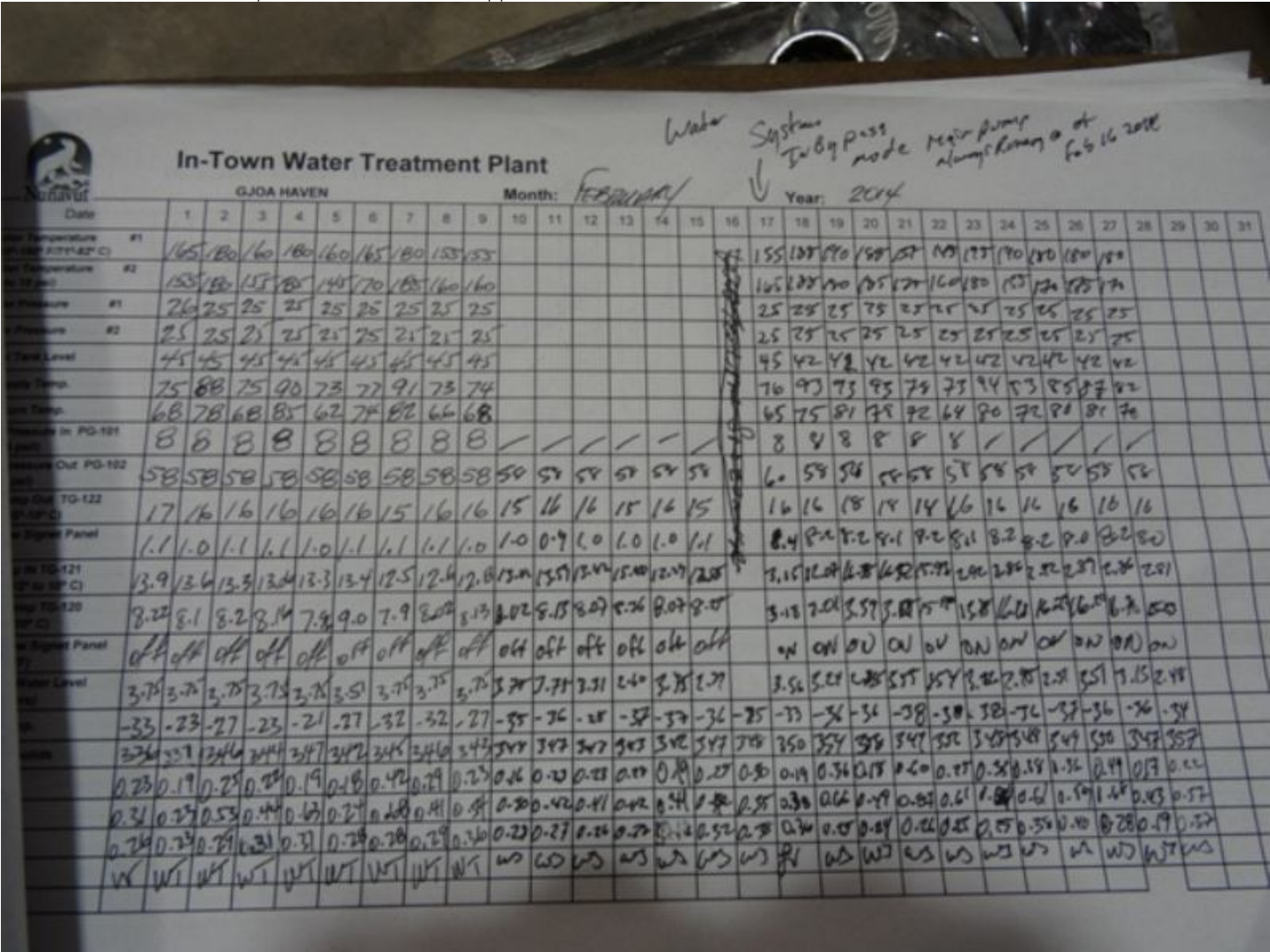


Figure 8 Chlorination and monitoring records found at Truck fill station



Figure 9 Excavator taking down lagoon wall





Figure 10 Excavator at truck drop off taking out berm wall material



Figure 11 Excavator taking down berm wall at truck drop off





Figure 12 hazardous materials on liner in Solid Waste Managment Area



Figure 13 Hazardous wastes segregated in the SWMA





Figure 14 Segregated hazardous wastes



Figure 15 Contaminated soils from outside the SWMA to be used as cover for Municipal waste area





Figure 16 Bulk metals waste area - Requires sorting



Figure 17 Bulk metals area





Figure 18 Old empty barrels



Figure 19 Take Back the Tundra End of Life Vehicle project





Figure 20 End of life vehicle project - capturing fuidls



Figure 21 Participants and facilitators





Licensee or Representative	Inspector's Name
	A. Keim
Signature	Signature
	Sent by Email – Original on file
Date	Date
	November 4 2014

Office Use Only:	Follow-up report to be issued by Inspector	<input type="checkbox"/> Yes <input type="checkbox"/> No
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