



**Indian and Northern
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April 30, 2009

Gwich'in Land and Water Board
P.O. Box 2018
Inuvik, NT X0E 0T0

Attn: Robert Alexie, Executive Director

RE: Municipal Water Licence (G03L3-001)

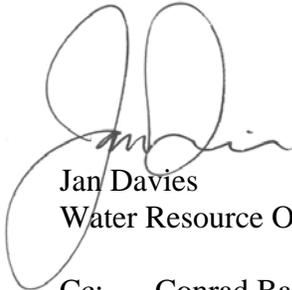
Dear Mr. Alexie,

Please find the enclosed Inspection Report for your review and/or records.

An electronic copy (un-editable Adobe pdf.) has also been provided by e-mail.

If you have any questions or concerns regarding the enclosed, and/or if additional information is required please contact me at 867-777-3662.

Sincerely,



Jan Davies
Water Resource Officer

Cc: Conrad Baetz, District Manager, North Mackenzie District, Inuvik, NT
Inuvik Sub-District

Enclosure: Water Licence Inspection Report (4 pages)



WATER LICENCE INSPECTION FORM

DATE:	September 25, 2008	COMPANY REP:	Mary Rose Tetlich
LICENCEE:	Hamlet of Fort McPherson	LICENCE #:	G03L3-001

WATER SUPPLY

Source:	Deep Water Lake	Quantity Used:	~37,763 m3 per year
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Owner/Operator: Hamlet/ Dept. of Public Works

Indicate: **A - Acceptable** **U - Unacceptable** **N/A - Not Applicable** **N/I - Not Inspected**

Intake Facilities	A ^{1,2,3,5}	Storage Structures	A	Treatment Systems	A	Chem. Storage	A
Flow Meas. Device	A	Conveyance Lines	A	Pumping Stations	A ⁴		

Comments:

Concerns:

1. Original absorbant pads for a leaking auxillary pump operated at the Deep Water Lake Water Supply Facility (WSF) during the Fall 2007 intake pipe repair were not removed. The site must be cleaned up. The presence of absorbant pads if they are hydrocarbon stained would be a contamination risk to the Hamlet's Water Supply. It was understood that all the spill pads and debris had been removed. For future use of the auxillary pump - leaks need to be repaired, a spill/drip mat must be used under the pump with absorbant pads and a proper spill kit be located on site. (see Figure 1)
2. Hydrocarbon staining was present on the turn around pad next to the Deep Water Lake(WSF). Leaks from equipment should be repaired as this area is frequently flooded with water and is in close proximity to the Hamlet's water supply.
3. There is significant erosion of the turn around pad next to the the Deep Water Lake(WSF). This erosion of pad material can not continue as it will lead to further destruction of infrastructure. The cause of the erosion needs to be stopped. A permanent solution (like the use of a retaining wall or rip rap etc.)to the erosion needs to occur to prevent further damage. (see Figure 2)
4. At the Deep Water Lake (WSF), generators are still leaking. Some drip trays are in place with spill pads and some are soaked with oil. Larger drip trays need to be used as leaking oil is still by-passing the current drip trays. There is still oil along the floor and seeping through the wall and dripping outside on metal skids in the back of the generator shed. Leaks in the Generator Room need to be repaired to prevent further leaking and seepage of oil throughout the shed and subsequently to the outside.
5. Contamination at Fuel Storage Tank at Deep Water Lake (WSF). See Fuel Storage Section.

WASTE DISPOSAL

Well Waste	Off-Site Removal	N/A	Drilling Sump	N/A	Downhole	N/A	Land spread	N/A
Sewage	Sewage Treatment System (primary, secondary, or tertiary)			Primary Lagoon				
	Natural Water Body		Continuous Discharge (land or water)			Water - 2km Lake		
	Seasonal Disch.	Decant - Late Fall and/or Spring		Wetlands Treatment		Trench		
Solid Waste	Owner/Operator: Hamlet of Ft. McPherson							
	Landfill	✓		Burn & Landfill		Conditionally acceptable	Other	N/A

Indicate: **A - Acceptable** **U - Unacceptable** **N/A - Not Applicable** **N/I - Not Inspected**

Discharge Quality	A ^{1,2}	Construction	N/A	Disch. Meas. Dev.	A	Freeboard	A
Decant Structures	A ⁶	O&M Plan	U ⁸	Dams, Dykes	A	Seepages	A ⁶
Dyke Inspections	A	A&R Plan	N/A	Erosion	N/A	Spills	U ⁵
Periods of Discharge	Late Fall and/or Spring		Effluent Discharge Rate		By volume of water used		

Concerns:

1. Samples were collected and the decants occurred in the Spring and Fall for 2008. Discharge criteria for the Spring decant was met but the Fall decant had to be stopped short when the discharge criteria and Maximum Average Concentration was exceeded. At the time of inspeciton a sample was taken by Water Resource Officer (for details see Surveillance Network Program section) but Faecal Coliform analysis could not be done by the lab. Discharge Quality was acceptable for BOD but the TSS was exceeded, more than likely due to the recent activity of replacing the culvert for the Decant Structure.
2. When discharging from the Sewage Disposal Facilities(SDF) at SNP-2 please continue to discharge as slow as possible and in a regulated manner. This will help allow for high dilution as effluent slowly moves through the system. This concern is from high ammonia levels that could affect the immediate discharge area.

3. The Hamlet and Staff are to be commended for signage present throughout the Solid Waste Disposal Facility(SWDF) and the Sewage Disposal Facility(SDF). In the SWDF one sign is present to give direction to the waste animal, used oil/batteries and domestic waste areas. To ensure further guidance and waste segregation individual signs for these areas are recommended.
4. General Domestic waste being deposited by waste metal storage area. Ensure the domestic waste is removed as this will prevent further waste being deposited there, which would lead to larger non-segregated waste issues.
5. Batteries and waste oil have been removed from the SWDF hazardous wastes/waste oil storage area but work is still required. During the inspection there was obvious evidence of considerable release of oil as the ground is still saturated with oil and/or other materials. This material needs to be removed and disposed of properly. To prevent further spillage of oil in the storage area regular inspection and maintenance of the area is recommended.
6. Maintenance had been completed on the decant structure and at the time of inspection the valve was opened to allow the decant to occur and use the newly installed culvert. It was noticed that there appeared to be seepage occurring from the vicinity of the culvert and berm area. Further confirmation is needed to ensure there is no seepage when the decant structure valve is closed. If there is sewage effluent bypassing the decant structure and/or berm then further repairs will be needed.
7. The contaminated soil storage areas need to be properly operated and maintained to ensure the adequate remediation of the soils. These contaminated soil areas should not be for long term storage but allow for the remediation of soils and thus eventual permanent disposal.
8. As per Part II of the renewed Water Licence a revised Operation and Maintenance Plan (O&M Plan) for the Sewage and Solid Waste Disposal Facilities was required by March 1, 2008. To date a revised O&M Plan has not been received. It is apparent that the current O&M Plan (1997) needs to be updated. Ensure the Hamlet Staff are aware of the current O&M Plan to maintain consistency in how the SDF and SWDF are being operated.

Notes:

- Please ensure an Inspector is notified when the freeboard is exceeded at the Sewage Disposal Facility (SDF).
- It is recommended that the SDF be upgraded to effectively address the high ammonia in sewage effluent as mentioned in the Fort McPherson Wetland Study (Ferguson Simek Clark, March 2005). It is also suggested that the system be upgraded to facilitate continuous discharge as opposed to decanting sewage effluent.
- As mentioned in the 2004 Annual Report and Study - Performance and Potential Improvements to Anaerobic Lagoon in Fort McPherson (Earthtech, N.W.T. May, 2004) it is suggested that "the sewage treatment "system" for the lagoon discharge could be expanded in the future to include the downstream wetland areas"

FUEL STORAGE

Owner:	Hamlet of Fort McPherson	Operator:	Department of Public Works	Condition of tanks:	Good
Berms & Liners	A	Water within Berm:	U ¹	Evidence of Leaks:	Yes ²
Drainage Pipes	N/A	Pump Station and Catchment Berm	A ²		
Pipeline Condition	A	Not Applicable:	N/A		

Concerns:

1. At the Water Treatment Plant the berm for the Fuel Storage Tank is full of diesel, water, ice and snow. While on inspection a contractor was present to remove the contaminated water to be taken to Inuvik for disposal. The problem of water getting into the metal berm for the Fuel Storage Tank should be dealt with permanently by some kind of covering or replacing the tank with a double walled storage tank. (see Figure 3)
2. Deep Water Lake Water Supply Facility Fuel Storage Tank is a double walled tank that is mounted on a wood platform on a gravel pad. The gravel pad smelled of fuel mainly on the south side of the tank. Shane Debastien who was present mentioned that the south side of the tank with the pipe in the bottom was sunken originally and had to be repaired. During this time there might have been a leak and/or the tank has been overfilled. With the fuel/water draining off the tank the area would smell of fuel. The extent of contaminated gravel should be assessed and the area should be excavated of contaminated gravel and properly disposed of. (see Figure 4)

SURVEILLANCE NETWORK PROGRAM

Samples Collected Hamlet	Yes – for the spring and summer decants and from the other SNP sites. ¹		
Samples Collected DIAND	Yes, collected from SNP 1696-2 by Water Resource Officer during inspection.		
Signs Posted: SNP	1696-1B, 2, and 5 present. 1696-1A, 3 and 6 were not inspected.	Warning	Yes present for all facilities.
Record & Reporting	2008 Annual Report was submitted. An action plan to maintain freeboard at Sewage Disposal Facilities was due May 30, 2008. Terms of reference for a bio-physical assessment of the environment receiving sewage effluent discharges was due March 28, 2008.		
Geotechnical Inspection	N/A		

Concerns:

Comments:

1. From the annual report it appears that SNP 1696-3 and 5 were only sampled once instead of two times a year as required by the Water Licence. Ensure sampling occurs as per Surveillance Network Program sampling requirements.

Non-Compliance of Act or Licence:	<ol style="list-style-type: none">1. Part B2, Licensee shall comply with the "Surveillance Network Program".2. Part B9, An action plan to maintain freeboard at Sewage Disposal Facilities was due May 30, 2008.3. Part B10, Terms of reference for a bio-physical assessment of the environment receiving sewage effluent discharges was due March 28, 2008.4. Part H2, A revised Operation and Maintenance Plan was due March 1, 2008.
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Inspector's Signature:



A handwritten signature in black ink is written over a horizontal line. The signature is stylized and appears to consist of several loops and a long horizontal stroke.



WATER LICENCE INSPECTION REPORT Pg. 4 (Continued)

Date:	September 25, 2008	Licence #:	G03L3-001
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Inspection Images:

Figure 1

Absorbent pads used for a pump during a water intake repair in 2007 that should have been cleaned up and removed



Figure 2

Erosion needing repair at the turn around pad next to the Deep Water Lake Water Supply Facility.



Figure 3

Fuel contaminated water located within berm for Water Treatment Plant Fuel Storage Tank.



Figure 4

South side of Fuel Storage Tank at Deep Water Lake Water Supply Facility having gravel smelling of fuel contamination.

