



North Mackenzie District  
P.O. Box 2100  
Inuvik, NT X0E 0T0

Telephone: 867-777-8900  
Fax: 867-777-2090

September 22, 2011

Northwest Territories Water Board  
P.O. Box 2531  
Inuvik, NT X0E 0T0

**Attn: Freda Wilson, Office and Finance Administrator**

**RE: Municipal Water Licence N7L3-1619  
CLASS B - MUNICIPAL**

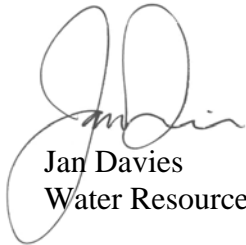
Dear Ms. Wilson,

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) 777-8909.

Sincerely,



Jan Davies  
Water Resource Officer

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

Enclosure: Municipal Water Licence Inspection Report and Cover Letter (7 pages)



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P.O. Box 2100  
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September 22, 2011

Hamlet of Paulatuk  
P.O. Box 98  
Paulatuk, NT, X0E 1N0

**Attn: Debbie Gordon-Ruben**

**RE: Municipal Water Licence N7L3-1619  
CLASS B - MUNICIPAL**

Dear Ms. Gordon-Ruben,

An inspection was conducted of the Municipal Water Supply and Waste Disposal Facilities on August 30, 2011. Enclosed is a copy of the Municipal Water Licence Inspection Report.

There have been visible improvements since the last inspection like the fencing at the Water Supply Facilities, greater segregation of specific wastes in the Bulk Waste Area, repairs to the sewage discharge chute, and especially no burning of general domestic/household garbage at the Solid Waste Disposal Facility. Unfortunately there remains a number of violations as depicted on page four of the Inspection Report. Some of the violations relate to reporting, signage, Surveillance Network Program responsibilities, administrative requirements and can be dealt with promptly. Please review and address the concerns throughout the Inspection Report.

While it is clear that progress is being made on certain issues, however, there are terms and conditions of your Water Licence that are being neglected resulting in non-compliance/violations. Upon review of previous years Inspection Reports it is apparent that many of the violations and concerns outlined in the Inspection Report are consistent with those in previous years. Please address the aforementioned items as non-compliance with a Water Licence is a serious matter.

Please note that it is the Hamlet's responsibility to ensure compliance with all of the terms and conditions of its Water Licence. Aboriginal Affairs and Northern Development Canada looks forward to working with you as much as possible to achieve compliance.

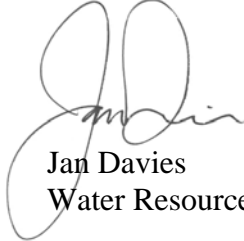


## MUNICIPAL WATER LICENCE INSPECTION FORM

A copy of this report will be sent to the Northwest Territories Water Board for their review and public records.

If you have any questions/concerns regarding the enclosed, and/or if additional information is required, please do not hesitate to contact me at (867) 777-8909.

Sincerely,



Jan Davies  
Water Resource Officer

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

Enclosure: Municipal Water Licence Inspection Report (5 pages)

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## MUNICIPAL WATER LICENCE INSPECTION FORM

<b>LICENCE #:</b>	N7L3-1619	<b>EXPIRY DATE:</b>	November 20, 2015
<b>LICENCEE:</b>	Hamlet of Paulatuk	<b>PREVIOUS INSPECTION:</b>	September 14, 2010
<b>COMPANY REP:</b>	Debbie Gordon-Ruben	<b>INSPECTION DATE:</b>	August 30, 2011

### WATER SUPPLY

Source:	New Water Lake	Quantity Used:	12,499 m <sup>3</sup>
Owner/Operator:	Hamlet of Paulatuk	Meter Reading:	N/I

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

Intake Facilities	A	Storage Structures	N/A	Treatment Systems	A	Recycling	N/A
Flow Meas. Device	A	Conveyance Lines	A	Pumping Stations	A <sup>1</sup>	Chem. Storage	A
						Modifications	N/A

### **Water Supply Comments:**

Concerns:

1. See Fuel Storage Section for additional concerns.

Notes:

- Currently residents are being educated that New Water Lake and Water Supply Facilities (WSF) are off limits especially for recreational activities. The Hamlet is trying to control access to the WSF to ensure a safe and protected water supply. The Hamlet residents are being supportive.
- New fence/gate is being installed around the WSF and its immediate area including the turnaround pad right up to the edge of New Water Lake (see Figure 1). The site looked clean and tidy. A new warning sign was installed in front of the fence which states "No Unauthorized Entry".
- A reminder that the WSF (including the generator room and Water Treatment Plan) needs to be secure against unauthorized access.
- The site and facilities looked clean and tidy at the time of Inspection. Continue to ensure the generator room is clean despite routine maintenance.
- Continue to ensure any empty chlorine containers are properly disposed of and the WTP is clean and organized.
- Emergency generator room was not inspected.
- According to Hamlet staff the WSF will be replaced with one similar to Ulukhaktok.

### WASTE DISPOSAL

Well Waste:	Off-Site Removal	N/A	Drilling Sump	N/A	Downhole	N/A	Land spread	N/A
Solid Waste:	Open Dump	N/A	Landfill	A <sup>2,3,4,6,7,8,9,11</sup>	Burn & Bury	conditionally acceptable	Under ground	N/A
	Owner / Operator	Hamlet of Paulatuk	Sludge Disposal	N/A	Other	N/A		
Tailings:	Tailings Pond	N/A	Natural Lake	N/A	Under ground	N/A		
Sewage:	Sewage Treat. System	A <sup>13</sup>	Camp Sump	N/A	Natural Water Body	A	Wetland Treatment	A
	Continuous Discharge	A	Inter. Discharge	N/A	Seasonal Discharge	N/A	Trench	N/A

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

Discharge Quality	U <sup>12</sup>	Construction	A <sup>1</sup>	Disch. Meas. Dev.	A	Freeboard	N/A
Decant Structures	N/A	O&M Plan	U <sup>10</sup>	Dams, Dykes	N/A	Seepages	N/A
Dyke Inspections	N/A	A&R Plan	N/A	Erosion	A <sup>13</sup>	Spills	U <sup>5,14</sup>
Conveyance Lines	N/A	Pond Treatment	N/A	Runoff Diversion	N/A	Sump Treatment	N/A
Sump Liners	N/A	SNP Samples Collected		None			
Periods of Discharge	Continuous Discharge		Effluent Discharge Rate		Natural outflow		

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## MUNICIPAL WATER LICENCE INSPECTION FORM

### Waste Disposal Comments:

#### Concerns:

1. The previous waste cell at the Solid Waste Disposal Facility (SWDF) has been covered and a new cell has been excavated to the southeast (perpendicular in direction) of the previous cell. There should be a letter of Notification and a drawing sent to the Northwest Territories Water Board in light of the new cell being excavated and used to ensure the Board is notified of this recent change.

It was noted that there was subsidence/slumping with the cover material/cell cap for the previous waste cell (see Figure 2). Ensure more cover material is put on the cell adequately to fill it in and to ensure it matches the surrounding land as this will provide proper drainage with precipitation. Any subsidence will act as collecting point for precipitation and a conduit for water to enter the cell and flow through waste creating leachate/contamination issues.

It was commented that there might be plans by the Hamlet to move the SWDF further away from the Hamlet. A reminder that the Hamlet would need to apply for an approval from the Northwest Territories Water Board to ensure the current site is adequately abandoned, restored, and monitored.

2. It is understood that signage has been ordered. Signs present for household garbage and bulky waste but others are still needed. Ensure signage is in the appropriate location. Solid waste segregation is improving and will need to be continually maintained to further increase public guidance and assistance. For example if waste is disposed of in the wrong area it should be moved before other waste accumulates there as well. Further waste segregation signage is needed in the Solid Waste Disposal Facilities (SWDF) at each specific area. Signage should be present for but not limited to the following: bulk metal waste, white metal waste (fridges, washers/dryers, etc.), hazardous waste (oil, fuel, batteries, drums), empty drums, fuel tanks, tires, vehicles/ATVs/ skidoos, honey bag pit, waste animal pit, domestic/household garbage, paper/wood/cardboard- designated burning area, etc. Segregation will aid in an organized site that residents will respect and help maintain. This will also keep costs down in the future when it is time to recycle waste or abandon and restore the site.

3. Much wind blown debris is present. Regular covering with fill material is needed to control windblown debris and deter birds etc. Higher berms and fencing at the SWDF are an effective way to control windblown materials. If a fence is being installed at the waste cell the height of the berm should be increased. Debris needs to be cleaned up as it is a part of regular maintenance. A clean and organized facility in which the public provides assistance is further aided by cleaning up and preventing windblown debris.

4. A lot of organization has occurred at the SWDF. Vehicles have been gathered and consolidated. ATVs-skidoos and quads have been segregated into one particular area. Vehicles and drums have been cleared out from the drainage area/pooled water at the east and south side of the sewage lagoon area. This will make a huge difference, to leave this site clean. There was also erosion noted throughout the SWDF. Waste especially those with possible contaminants present need to be moved away from the water, erosion and drainage areas. Continue to pull waste out of those locations and ensure they are properly segregated and stored away from water drainage areas.

5. The Hamlet is to be congratulated for their work to see that drums are being gathered and segregated. Currently they are put into different areas one for waste/crushing, further segregation and recently acquired. Unfortunately there is a clear indication that many drums/containers are leaking. Spillage of drum/container contents is evident on the ground especially in the areas where there are many drums being stored and leaking appears to have been going on for some time (see Figure 3).

Leaking drums are not acceptable, barrels can be properly disposed of (as per GNWT-ENR guidelines) or stored. Ensure drums are secured, contained, properly segregated and fluids are unable to leak from containers (strong drum, bung in place, no holes, openings facing up). When there is suspected leaking bungs and openings they should not be in the bottom especially if a drum is on its side but rotated so they are facing up, however, the fluids must be transferred to secure and approved containers. There needs to be regular checks at the SWDF for leaks and subsequent repairs including containment of leaking containers/materials to prevent spills and further contamination of the environment. If contaminated soil is discovered it needs to be cleaned up and disposed of in the contaminated soil storage area. Please note that when any contaminated soil is deposited at the SWDF the Hamlet needs to notify the Inspector as per Part D: Conditions Applying to Waste Disposal, Item 7, of the Water Licence.

6. Currently there are many barrels and batteries present at the SWDF that need to be in a bermed temporary storage area, failure to do so is a violation of Part D: Conditions Applying to Waste Disposal, Item 9, of the Water Licence. It might be prudent for Hamlet Staff to build a berm around the few large groups of hazardous waste such as barrels, batteries etc. and contain them where they are as this waste is located throughout the landfill. This would save on time and work involved to move all the waste. In the containment/storage areas these materials need to be collected, consolidated, prepared and either shipped to an approved facility for disposal or the liquids (waste fuel and oil) burned in approved equipment. This will ultimately maintain the SWDF in a well managed state that encourages public participation/assistance.

7. There needs to be a liner under the contaminated soil pile and a berm to prevent migration of contaminants into the water. It is important to note that contaminated soil needs to be stored in a bermed containment cell and still needs to be correctly remediated so it can be properly disposed of. The contaminated soil storage area at the SWDF should not be for long term storage but allow for the remediation of soils and their permanent disposal. There needs to be regular turning of soil/aeration, sampling, removal of soil for proper disposal. This will ultimately expose other layers of soil to the remediation process and create an efficient remediation program. Since the Hamlet has not provide proper containment for the contaminated soil present at the SWDF it is a violation of Part D: Conditions Applying to Waste Disposal, Section 8 of the Water Licence.

8. Waste propane tanks that have been emptied are located by the contaminated soil area. If there is not a specific reason for them to be there they should be organized with the other bulky metal waste.

9. The Hamlet is to be commended for their efforts, as it was evident from looking at the household garbage –waste cell there had not been any recent burning of household/domestic garbage (see Figure 4). Upon looking at the current waste cell there was a significant amount of approved combustible waste such as cardboard and wood. A designated separate burning area for materials is recommended to allow the reduction of material, to conserve space and ensure proper control. The Hamlet should segregate waste suitable for open burning such as paper products, paperboard packaging and untreated wood wastes.

10. It is apparent that components of the current Operation and Maintenance Plan (O&M Plan) are not being followed as per Part E: Conditions Applying to Operation and Maintenance, Item 4, of the Water Licence. Ensure that Hamlet Personnel are familiar with the approved O&M Plan and that it is being properly implemented. A copy of the approved O&M Plan must be onsite and readily available.

The current Operation and Maintenance Plan by Dillon Consulting Limited was dated August 2004. An updated Municipal Solid Waste Operations and Maintenance Plan was not provided by November 30, 2010 and is a violation of Part E: Conditions Applying

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## MUNICIPAL WATER LICENCE INSPECTION FORM

to Operation and Maintenance, Item 3, of the Water Licence.

11. Partially ponded cells on the SWDF site were cells dug previously for waste but the water table was too high so they were backfilled and abandoned. It would be appropriate to add more more fill and recontour the area to ensure the ponding is stopped.

12. The discharge quality of the sewage lagoon and run-off of the Solid Waste Disposal Facilities (SWDF) is unknown because the Hamlet has not sampled on a regular basis as per SNP requirements which is a violation of Part B: General Conditions, Item 2, of the Water Licence. The sewage lagoon discharge (SNP 1619-2) was sampled (w/o oil and grease) in 2010 by the Water Resource Officer (Inspector) and was acceptable. The sewage lagoon was sampled recently in 2011 by Environment Canada, previously their 2010 and 2009 sampling indicated the discharge quality was acceptable from the limited analysis that was completed according to Surveillance Network Program (SNP) requirements in the Water Licence. (see Surveillance Network Program section)

13. Sewage discharge chute has been lengthend and properly measured with the sewage truck (see Figure 5). Additionally the erosion areas on the front and the back have been filled in gravel material. To ensure no sewage bypass a tire stop is present. Sewage seems to be going into the chute but a little erosion is evident showing some by-passing is occurring. It was suggested putting a flat piece of metal (corrugated etc) to act as a futher measure to prevent erosion and catch any drips and angle them towards the chute. Continue to monitor as any materila that is eroded away is eventually deposited back into the sewage lagoon which decreases efficiency and costs the Hamlet to repair it and material to replace it.

14. It appeared there was as spill of oil at the sewage discharge chute in the tire track (see Figure 6). This needs be confirmed, repairs completed to the whatever was leaking the oil and the spill cleaned up and properly disposed of.

### Notes:

- A fence with a gate is going to be built around the north and east sides of the SWDF. It is estimated that a 1400ft fence will be installed, running from by the vehicle storage area to the north of the large hill and then the contaminated soil area (across the access road). Given that there is a great deal of expense associated with building a fence it would be efficient to build the fence in such a way so the fence posts are movable and can easily be reused again to reflect expansion or in future SWDF locations.
- Bulky waste has been organized more such that white metal, drums, and vehicles are being slowly segregated out of the main bulky waste pile into specific areas. The Hamlet plans to continue to segregate/organize waste at the SWDF, properly deal with waste drums, and educate the Hamlet residents and council about the requirements to deal with hazardous waste.
- In regards to dealing with the various waste like drums and white metal waste (appliances etc.) and other waste streams. Refer to the O&M Plan, GNWT- ENR Guidelines for various waste disposal procedures (which are available online), staff from Municipal and Community Affairs and the GNWT-ENR specialized in Solid Waste Management.
- The Hamlet plans to get two waste oil burners and collect the used oil at the Hamlet mechanics shop to burn.
- The sewage lagoon water colour appeared to be an acceptable green colour and the discharge appeared acceptable.
- **Reminder that a Sewage Treatment Plan is due November 30, 2011.**

### FUEL STORAGE

Owner:	Hamlet of Paulatuk	Operator:	Hamlet of Paulatuk	Condition of tanks:	A
Berms & Liners	A	Water within Berm:	A <sup>1</sup>	Evidence of Leaks:	N/A
Drainage Pipes	N/A	Pump Station and Catchment Berm	A	Runoff Diversion	N/A
Pipeline Condition	A <sup>2</sup>	Not Applicable:	N/A		

### Fuel Storage Comments:

#### Concerns:

1. It appears from the berm for the fuel storage tank and the bailing bucket that there has consistently been water present. To prevent water from entering it would be prudent to consider some kind of cover or roof to keep precipitation out. Any water presence then offeres a potential water contmination issue. Water that is cleaned out then can drain into the Water Supply. This would act as a preventative measure to potential water supply contamination. When a future Water Treatment Plant is proposed ensure there is a double walled enviro tank installed and any metal bermed tanks are enclosed/inside the building.
2. Flex pipe shows consistent bend (probably upon original installation), fuel tank, berm and associated piping appears stable. There was no flex pipe on the return pipeline from the generator to the fuel tank. Continue to monitor for any further changes to the fuel tank and associated piping which is critical to preventing failure in the future. In regards to fuel storage at the Water Supply Facility (WSF)any spill related to structural failure would be an immediate risk to the Hamlet's Water Supply.

### SURVEILLANCE NETWORK PROGRAM

Samples Collected Hamlet	None <sup>1</sup>				
Samples Collected DIAND	None				
Signs Posted: SNP	SNP signage is N/A. Maps have not been provided. <sup>2</sup>	Warning	Signage indicating Paulatuk Water Supply and at fenced entrance to Water Supply Facilities stating "No Unauthorized Entry". No signage for Sewage Disposal Facilities or Solid Waste Disposal Facilities. <sup>3</sup>		
Record & Reporting	2010 Annual Report has been provided. 2006-2008 Annual Reports are still due, but 2009 Annual Report was submitted. <sup>4</sup> A Spill Contingency Plan has not been submitted. <sup>5</sup>				
Geotechnical Inspection	N/A				

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## MUNICIPAL WATER LICENCE INSPECTION FORM

### Surveillance Network Program Comments:

#### Concerns:

1. At the time of inspection the water quality from the outflow of the Sewage Disposal Facility and the run-off from the Solid Waste Disposal Facilities were unknown and had not been sampled which is a violation of the Surveillance Network Program (SNP) criteria Part B: General Conditions, Item 2, of the Water Licence.
2. Since SNP signage is no longer required it is now necessary for the Hamlet to provide a map or drawing indicating the locations of the SNP sampling locations. In light of the recent workshop that occurred with the Northwest Territories Water Board in August 2011 there was a SNP map provided to the Hamlets and would fulfill the SNP map requirement by the Water Licence. Since the Hamlet has not provided a map, this is a violation of Part B: General Conditions, Item 4, of the Water Licence.
3. Signs warning the public of the Solid Waste Disposal Facilities and Sewage Disposal Facilities have not been installed, which is violation of Part B: General Conditions, Item 5, of the Water Licence.
4. If data is limited, Annual Reports should be sent with what information is known so there are records available. Annual Reports from 2006-2008 have yet to be submitted which is a violation of Part B: General Conditions, Item 1, of the Water Licence.
5. A Spill Contingency Plan was not provided by November 30, 2010 to the Northwest Territories Water Board and is a violation of Part E: Conditions Applying to Operation and Maintenance, Item 1, of the Water Licence.

#### Note:

- Currently there is a study being conducted by Environment Canada (Mary Kelly) of the sewage lagoon discharge. There is a whole range of physical and chemical parameters including carbonaceous biochemical oxygen demand (cBOD) and a wide variety of nutrients, major ions and metals that are being sampled and analyzed. Sampling is known to have occurred in this 2011 year but results have not yet been provided. Please note that in 2010 and 2009 the discharge quality was acceptable from the limited analysis that was completed, according to SNP requirements in the Water Licence.

### NON-COMPLIANCE/VIOLATIONS OF ACT OR LICENCE

Part B: General Conditions, Item 1,

“The Licensee shall file an Annual Report with the Board every year, not later than April 30<sup>th</sup> of the year following the calendar year reported...”

Part B: General Conditions, Item 2,

“The Licensee shall comply with the “Surveillance Network Program” annexed to this Licence, and any amendment to the said “Surveillance Network Program” as may be made from time to time, pursuant to the conditions of this Licence.”

Part B: General Conditions, Item 4,

“The Licensee shall, within 60 days of the issuance of this Licence, submit to the Board for approval a map or drawing indicating the location of all Surveillance Network Program sampling stations.”

Part B: General Conditions, Item 5,

“The Licensee shall, within 60 days of issuance of the Licence, post signs in the appropriate areas to inform the public of the Water Supply and Waste Disposal Facilities. All postings shall be located and maintained to the satisfaction of an Inspector.”

Part D: Conditions Applying to Waste Disposal, Section 8,

“The Licensee shall contain all contaminated soil in such a manner as to minimize the potential for migration of contaminants into any Waters, to the satisfaction of an Inspector.”

Part D: Conditions Applying to Waste Disposal, Section 9,

“The Licensee shall segregate and store hazardous Waste in a temporary storage area, to the satisfaction of an Inspector.”

Part E: Conditions Applying to Operation and Maintenance, Item 1,

“The Licensee shall submit to the Board for approval by November 30, 2010, a Spill Contingency Plan in accordance with the Guidelines for Spill Contingency Planning, April 2007 developed by INAC-Water Resources Division.”

Part E: Conditions Applying to Operation and Maintenance, Item 3,

“The Licensee shall submit to the Board for approval by November 30, 2010 an updated Municipal Solid Waste Operations and Maintenance Plan...”

Part E: Conditions Applying to Operation and Maintenance, Item 4,

“The Licensee shall implement the Spill Contingency Plan, the Sewage Treatment Plan, and the Municipal Solid Waste Operations and Maintenance Plan as and when approved by the Board.”

Inspector’s Signature: \_\_\_\_\_

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## MUNICIPAL WATER LICENCE INSPECTION FORM

### Inspection Images:



**Figure 1**

New fence/gate is being installed around the WSF and its immediate area including the turnaround pad right up to the edge of New Water Lake.



**Figure 2**

It was noted that there was subsidence/slumping with the cover material/cell cap for the previous waste cell. Ensure more cover material is put on the cell adequately to fill it in and to ensure it matches the surrounding land as this will provide proper drainage with precipitation.



**Figure 3**

Unfortunately there is a clear indication that many drums/containers are leaking, as spillage of drum/container contents is evident on the ground. These spills from drums need to be called in as a spill to the 24 Hour Spill Report Line.



**Figure 4**

The Hamlet is to be commended for their efforts, as it was evident from looking at the household garbage –waste cell there had not been any recent burning of household/domestic garbage



**Figure 5**

Sewage discharge chute has been lengthened and properly measured with the sewage truck. Additionally the erosion areas on the front and the back have been filled in gravel material.



**Figure 6**

It appeared there was as spill of oil at the sewage discharge chute in the tire track. This needs be confirmed, repairs completed to the whatever was leaking the oil and the spill cleaned up and properly disposed of.