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Town Of Norman Wells
P.O. Box 5, 3 Mackenzie Drive
#29 Mackenzie Drive
Norman Wells, NT X0E 0V0

July 12, 2024

Attention: Cathy Clarke, SAO

File Number S18L3-003
Type of Operation CLASS B – MUNICIPAL Water Licence
Location Mackenzie River

Dear Cathy Clarke,

An inspection of the above noted operation was conducted on May 24, 2024 by Water Resource Officer Erin Goose. No major concerns were noted in the Inspection.

If you have any questions, please contact me at 867-587-7203.
Enclosed is a copy of the MUNICIPAL Water Use Inspection Report.

Sincerely,

Erin Goose
Water Resource Officer
Environment and Climate Change
Sahtu Region

Cc: Jeff Walker-Sahtu Region Superintendent-ECC
Wendy Bidwell- Senior Water Resource Officer-ECC
Natalie Lippa- Regulatory Specialist-SLWB
Rick Walbourne-Water Regulatory Manager-ECC



WATER USE INSPECTION REPORT

LICENCE #:	S18L3-003	EXPIRY DATE:	November 18, 2028
LICENCEE:	Town of Norman Wells	PREVIOUS INSPECTION:	June 01, 2023
COMPANY REP:	Cathy Clarke, SAO	INSPECTION DATE:	May 24, 2024

WATER SUPPLY

Source:	Mackenzie River	Quantity Used:	250m3/day
Owner/Operator:	Northridge Contracting	Meter Reading:	91,250 m3 per year

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

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

Water Supply Comments:

1. Water Intake and Pump Station:
 - Located at the Norman Wells dock, above where water is pumped from the Mackenzie River.
 - During the visit, the area was covered in river ice (May 2024).
 - The pump station has a generator with secondary containment.
 - In winter, water from the pump station is heated and returned to the river to prevent pump lines from freezing. Glycol is used for this purpose.
2. Water Treatment Plant:
 - Receives water from the pump house for treatment.
 - Treatment involves several steps:
 - Aluminum Sulfate and polymer are added to clump particles together, allowing them to settle at the bottom of the settling pool. This is necessary because Mackenzie River water has higher turbidity compared to lake water.
 - pH adjusters like soda ash are added, especially during the spring melt when water acidity fluctuates. This helps stabilize the pH level.
 - Chlorine is added to disinfect the water. After chlorination, the water is filtered before distribution.
3. Overall Observations:
 - The facilities were described as clean and well-organized.
 - Hugo Pabke maintains a Water License in his office and stays updated with software systems that measure and analyze various parameters related to water management.
 - There is a laboratory on-site for testing water quality.

This visit highlights the importance of maintaining infrastructure and procedures to ensure safe and reliable water treatment and distribution, especially in challenging environmental conditions such as those faced during winter and spring melt periods.



WATER USE INSPECTION REPORT

WASTE DISPOSAL – SEWAGE

Disposal Method		Sewage Truck and utilidors					
Mechanical	No	Camp Sump	No	Natural Water Body	Yes	Wetland Treatment	No
Continuous Discharge	Yes	Intermittent Discharge	Yes	Seasonal Discharge	No	Land Spread	No
Accelerated Biological	Yes	Other					

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

Discharge Quality	A	Decant Process & Structures	N/A	Discharge Measurement Device	A
Freeboard	A	Sludge Disposal Method	N/A		
Periods Of Discharge	n\			SNP Samples Collected	no
Effluent Discharge Rates	unknown				

SURVEILLANCE NETWORK PROGRAM

Samples Collected Licencee	Hugo mentioned that they have been taking samples, the results are in the annual report.
Samples Collected ENR	No

Signs Posted: SNP	Yes	Warning	No
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Sewage Comments:

4. Sewage Lagoon Overview:
- WRO Officer Erin Goose and Hugo Pabke visited the sewage lagoon site.
 - The overall status of the sewage lagoon was good with no issues reported.
5. Use of Enzyme Bio Clear:
- Enzyme bio clear is being used in the first two cells of the lagoon.
 - Its purpose is to accelerate the decomposition of organic material.
 - The bio clear is effective, as evidenced by the presence of bubbles in the holding cell. This indicates active decomposition.
6. Lagoon Operation:
- The lagoon operates with a system where sewage is initially treated in the first two cells with bio clear.
 - After initial treatment, the contents are released into a larger pond where natural decomposition processes further break down the waste.

This approach helps manage sewage effectively by enhancing natural decomposition processes with the use of bio clear in the initial stages. It's a method aimed at improving the efficiency and environmental impact of sewage treatment at the lagoon facility.



WATER USE INSPECTION REPORT

WASTE DISPOSAL – SOLID WASTE

Disposal Method		Open dump					
Open Dump	Y	Landfill	Y	Burn & Landfill	N	Underground	N
Offsite Removal	N	Other					
Owner / Operator	Town of Norman Wells						

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

Runoff Diversion	A	SNP Samples Collected	
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Solid Waste Comments:

1. Management and Updates:
 - Lucas Nadeau has been managing the Solid Waste Facility at Norman Wells for three years.
 - He has been actively updating the landfill to comply with Water License Part D, specifically focusing on waste disposal regulations.
2. Waste Disposal Practices:
 - Burning of waste is not conducted at the Solid Waste Facility.
 - Hazardous waste area has been recently emptied and the waste has been sent south for disposal.
 - There is ongoing testing and analysis of ground material in the hazardous waste site to assess contamination levels.
3. Infrastructure and Expansion:
 - Funding from Municipal and Community Affairs has supported the expansion and improvement of waste management facilities.
 - Specifically, funds have been used for the expansion and transfer of waste barrels.
4. Residential Waste Area:
 - The residential waste area has been relocated below the original site.
 - There are issues with water pooling in this area, and efforts are underway with KBL (presumably a contractor or agency) to implement a drainage system.
 - Officer Goose recommended sampling the pooled water before it is released into the environment, emphasizing environmental safety.
5. Facility Improvements:
 - The previous residential waste area will be covered to prevent environmental impact.
 - The fencing around the Solid Waste Disposal Facility (SWDF) has been updated with new electrical fencing.
 - Brush around the fence is being cleared to minimize obstructions and ensure security.

These actions and improvements highlight a proactive approach by the Solid Waste Facility management to enhance operational standards, comply with environmental regulations, and improve overall waste management practices for the community of Norman Wells.

GENERAL CONDITIONS/REPORTS/PLANS

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

C & R Plan	A	Records & Reporting	A	Final Report	A
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WATER USE INSPECTION REPORT

Geotechnical Inspection	A	Posting, Signage	A	Contingency Plan	A
Restorations Activities	A	Spills	A	O&M Plan	A
Maintenance	A	Modifications	A	Annual Report	

General Condition Comments:

1. **Compliance with Water License:**
 - The licensee has met all requirements stipulated in their water license.
2. **Annual Reporting:**
 - An annual report detailing their activities and compliance has been submitted to the Sahtu Land and Water Board.
3. **Public Transparency:**
 - The annual report will be made publicly accessible through the Sahtu Land and Water Board's website, contributing to transparency and accountability.

This demonstrates a commitment to environmental stewardship and regulatory compliance, ensuring that water resources in the Norman Wells area are managed responsibly and transparently. Compliance with the water license and public reporting are crucial steps in maintaining environmental standards and community trust.

ADDITIONAL COMMENTS/REMARKS

No non compliances or violations were noted at the time of this inspection.

Inspector’s Signature:

Leo Goox



WATER USE INSPECTION REPORT

INSPECTION IMAGES

Figure 1
Water intake pump house, generator near Mackenzie River Town of Norman Wells main dock



Figure 2
Water Settling area in the Water Treatment Plant



Figure 3
Flocculant mixing station



Figure 4
Water Treatment facility, SNP sampling



Figure 5
Pump out at Town Sewage Lagoon



Figure 6
Hazardous Waste area

