

WATER LICENCE INSPECTION FORM

☒ Original

☐ Follow-Up Report

Licensee	Licensee Representative
Hamlet of Pangnirtung	Gord Marinic
Licence No. / Expiry	Representative's Title
3AM-PAN1828	Municipal Engineer
Land / Other Authorizations	Land / Other Authorizations
1BW-DUV2025	
Date of Inspection	Inspector
June 22, 2022	Joseph Monteith
Activities Inspected	
<div><input type="checkbox"/> Camp<input type="checkbox"/> Drilling<input type="checkbox"/> Mining<input type="checkbox"/> Construction<input type="checkbox"/> Reclamation<input type="checkbox"/> Fuel Storage</div> <div><input type="checkbox"/> Fuel Storage<input type="checkbox"/> Other:<input type="checkbox"/> Other: Water Use &amp; Waste Disposal</div>	

Conditions:    A- Acceptable    U-Unacceptable    C-Concern    NI-Not Inspected    NA- Not applicable

PART:	Condition	Observation No.*
A: SCOPE, DEFINITIONS AND ENFORCEMENT	NA	
B: GENERAL CONDITIONS	A	
C: CONDITIONS APPLYING TO SECURITY	NI	
D: CONDITIONS APPLYING TO WATER USE	A	1-8
E: CONDITIONS APPLYING TO WASTE DISPOSAL AND MANAGEMENT	C	9-17
F: CONDITIONS APPLYING TO MODIFICATIONS	NI	
G: CONDITIONS APPLYING TO CONSTRUCTION	NI	
H: CONDITIONS APPLYING TO EMERGENCY RESPONSE AND CONTINGENCY PLANNING	U	18,19
I: CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE PLANNING	A	
J: CONDITIONS APPLYING TO MONITORING	NI	17
SCHEDULES	A	
* The observation number corresponds with specific comments provided below.		
Samples taken by Inspector:	Location(s): Latitude : N66° 09' 00" , Longitude: W65° 40' 34"	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

SECTION 1	<input checked="" type="checkbox"/> Comments (s)	<input type="checkbox"/> Non-Compliance with Act or Licence (s. __)	<input type="checkbox"/> Action Required (s. __)
<b>Background</b> <p>On June 23, 2018 Richard Dwyer, Nunavut Water Board, Manager of Licencing emailed Water Resource Officer(WRO) Joseph Monteith a copy of the replacement and amended Licence 3AM-PAN1828. In the renewal and amended licence it indicates that as of May 4, 2018 the Hamlet can now use 120,000m³ annually as per the new water licence. The community infrastructure licenced in the water licences contains a Water Treatment Facility, Waste Water Treatment Plant(WWTP), Solid Waste Facility, and a Hazardous Waste Storage Facility.</p> <p>On October 16, 2020 Richard Dwyer, Nunavut Water Board, Manager of Licencing emailed Water Resource Officer(WRO) Joseph Monteith the issuance of 1BW-DUV2025 renewed Water License, from previously issued water license 1BW-DUV2025 for a River Crossing and Drainage Redirection project.</p> <b>Inspector Statement</b> <p>On June 22, 2022, Water License inspection was conducted by WRO Joseph Monteith on water License 3BM-PAN1828 issued to the Hamlet of Pangnirtung, Qikiqtani Region, Nunavut, to verify compliance with the terms and conditions of the Water Licence 3AM-PAN1828, and 1BW-DUV2025.</p> <b>General Condition</b> <p>On April 7, 2021 the Nunavut Water Board uploaded to their FTP site a copy of the Hamlet of Pangnirtung Annual report for 1BW-DUV2025. <a href="ftp://ftp.nwb-oen.ca/registry/1%20INDUSTRIAL/1B/1BW%20-%20Watercourse/1BW-DUV2025/3%20TECH/B%20GENERAL/2%20ANNUAL%20RPT/">ftp://ftp.nwb-oen.ca/registry/1%20INDUSTRIAL/1B/1BW%20-%20Watercourse/1BW-DUV2025/3%20TECH/B%20GENERAL/2%20ANNUAL%20RPT/</a></p> <b>Water Use and Related Structures</b> <p>Duval River – Water Source (See photo 1 &amp; 2)</p> <div><div>1.</div><div>Water is extracted from the Duval River using a water pump and mobile generator. At the time of the inspection, the work authorized by 1BW-DUV2025 to dredge the water source, and dam up with boulder to raise the area where water extraction takes place was complete. The license remains to complete work on the culvert bridge.</div></div> <div><div>2.</div><div>Water is transferred by pipes from Duval River to the Water Storage Reservoir (photo 2 &amp;3).</div></div>			



### Water Treatment Facility & Water Storage Reservoir

3. The Water from Duval River is deposited into a reservoir next to the Water Treatment Facility (photo 3).
4. Water is delivered from the Water Treatment Plant by truck to the public.
5. Water Meter after reads 275587.9m<sup>3</sup> (photo 4).
6. Water Technician log sheet were up to date and provided at the Waste Water Treatment Facility. First reading is 235260m<sup>3</sup> and the second reading is 235532m<sup>3</sup> (photo 5).
7. The Water Storage Reservoir capacity is 12,000m<sup>3</sup> in the summer, and taking in considerations for the 1.8 metres of ice 71,000m<sup>3</sup> in winter. It was reported that there was a leak in the west wall facing the community coming from a monitoring station, and culvert.

### Water Usage Reports

8. The Hamlet is authorized to withdrawal 120,000m<sup>3</sup>.  
Water usage records were emailed to WRO Monteith on October 7, 2022. In the report it showed that the community had withdrawn and delivered from January 1, 2022 to September 30, 2022. Report shows 38,019,155.55 Litres delivered (photo 6).

### Waste Water Treatment Plant (WWTP)

9. The WWTP utilizes the GE MBR system to treat domestic sewage, as well as fish processing wastewater generated at the Pangnirtung Fisheries site. The quality of the WWTP effluent is well suited for discharge to the Pangnirtung Fiord. The various treatment processes used at the plant include coarse screening, fine screening(photo 7), equalization, bioreactor tanks, membranes, U.V. disinfection, pumping at various points in the process, waste sludge dewatering, final effluent re-use; and various chemical feed systems to aid in the treatment. The Waste Water Treatment Facility located 146 metres from the high water mark of the ocean(photo 8).
10. Liquid waste is discharged from the WWTP towards the ocean from a pipe that extends out 19 metres out (See photo 8).
11. Due to decommissioning all waste water was deposited GPS Coordinate N66.15617°, W65.67116° (decimal degrees). On October 26, 2022, Gord Marinic emailed WRO Monteith a copy of the "Pangnirtung Wastewater Treatment Plant Repair Report", and the "Pangnirtung Emergency Sewage Discharge Volume Estimate April 5-May 27 2022". A total of 9434 m<sup>3</sup> was discharged to the receiving environment( photo 19). All details of the occurrence that lead to the deposits are in observation # 19.

### Solid Waste Facility

12. The burn and cap is fenced, and also has two drainage culverts at the base of the landfill. A drainage basing on East side of the burn and cap has large amounts of wind blown debris and bulk wood deposits (photo 9).
13. The bulk metals area contains such waste as vehicles, white waste, snowmobiles, and all-terrain vehicles, various sized storage tanks. It was observed that the containment walls meant to divert water and waste from entering and exiting this facility has retained surface water. (photo 10 & 11).
14. Hazardous Waste was found throughout the Bulk woods section such as paint cans, and batteries. A dump fire was reported on December 2, 2022 in Nunatsiaq News, it was reported that the dump fire was extinguished on December 5, 2022. A spill report has not yet been submitted to the NT/NU Spills Data base ( photo 17).
15. The Bulk Metals section is merged with the Hazardous Waste section (photo 9).
16. Hazardous Waste section contains a full sea can mostly of electronics, paint cans and batteries. Accessing the sea can proved unsafe due to the amount of abandoned snowmobiles, and other bulk metal in front of the sea can entrance. Walls of sea can are compromised, and cannot hold any leaks. The bulk metal and the hazardous waste does not have any fencing as required by Part E: Item 6 (Photo 12).
17. A monitoring station on the South East Side of the Bulk Metal Solid Waste Facility (photo 18).

### Spill Reports

18. A separate and standalone Hazardous Waste non-engineered berm was constructed to address Spill Report 2019-244 (photos 14, 15, & 16). A submission of a Spill Report was requested due to the abundance of leaks, and spills that have damaged the surrounding vegetation and the amount of hazardous waste blowing away from the site (photo 13 &14). The Spill Report was submitted on June 17, 2019. And issued Spill Report number 2019-244. This spill report won't be closed off till the spills has been cleaned up, and a report to confirm that the spill has been cleaned up. It was observed that large spills did occur in the newly built non engineered berm for hazardous waste and still has gone un reported (photo 15). The spill observed appeared to be migrating towards the entrance to the non engineered hazardous waste berm (photo 16).
19. Spill Report 2022-119 A heave in the foundation of the WWTP has caused damage to the headworks piping, which rendered the bypass function of the WWTP inoperable. The hamlet deposited its sewage directly to the receiving environment and logged the discharge volumes. On October 26, 2022, Gord Marinic emailed WRO Monteith a copy of the "Pangnirtung Wastewater Treatment Plant Repair Report", and the "Pangnirtung Emergency Sewage Discharge Volume Estimate April 5-May 27 2022". A total of 9434 m<sup>3</sup> was discharged to the receiving environment. The discharge location was greater than 31 metres from the high



water mark. All conditions for spill reporting, and submitting a detailed report are compliant, and the spill report has been closed.


Action Required

The following information is a summary of the Actions Required by the licensee to promote and ensure compliance. Please provide a response to the following Actions Required within 30 days of receiving this report proposing timelines to address the concerns noted:

- Provide an action plan to clean up the site of Spill Report 2019-244;
- Find the reason why there is water leaks coming from the water reservoir and repair;
- Repair the walls to the Bulk Metals, and Bulk Woods on the Eastern Wall, so that surface water may not enter the facility;
- Submit spill report for the spills in the newly built non engineered berm for hazardous waste;
- Erect a fence surrounding the Metal and Hazardous Waste Storage Area as per Part E: Item 8;
- Submit a spill report for the dump fire at the Bulk Wood and Hazardous Waste sections of the Solid Waste Facility.

Non-Compliance with the Act, or the Licence

- Part E: Item 7: The Licensee shall implement measures to prevent hazardous materials and/or leachate from the Solid Waste Management Facility and Metal and Hazardous Waste Storage Area from entering water, and shall control surface runoff from the Solid Waste Management Facility and Metal Storage Area.
- Part E: Item 8: The Licensee shall erect a fence surrounding the Metal and Hazardous Waste Storage Area within six months of the approval of this Licence by the Minister.
- Part B: Item 7. The Licensee shall immediately report to the 24-Hour Spill Report Line at (867) 920-8130, any spills of Waste, which are reported to, or observed by the Licensee, within the municipal boundaries or in the areas of the Water Supply or Waste Disposal Facilities.

Licensee or Representative	Inspector's Name
Gord Marinic	Joseph Monteith
Signature	Signature
	
Date	Date
	December 12, 2022

CC: Licensing Department, NWB  
Jeremy Fraser, Manager of Field Operations, CIRNAC

PHOTO LOG

Date	Camera	Inspector	
June 22, 2022	Galaxy S-9/Panasonic CF-33	Joseph Monteith	
Photo Log #	Location		
Photo 1	Pangnirtung, Qikiqtani Region, Nunavut		
			
Description: Pangnirtung Water Source. The Duval River. Withdrawal point does not appear to be drawn down. This activity is authorized under water license 1BW-DUV2025			



Photo Log #1

Location

Photo 2

Pangnirtung



**Description:** The Duval River, and its recharging pipes which go from the river to the water reservoir, and treatment plant. The River Redirection activity on the Duval River is at the end of the road at the river.

Photo Log #1

Location

Photo 3

Pangnirtung



**Description:** Water Reservoir capacity is 12,000m³ in the summer, and taking in considerations for the 1.8 metres of ice 71,000m³ in winter.

Photo Log #1

Location

Photo 4

Pangnirtung



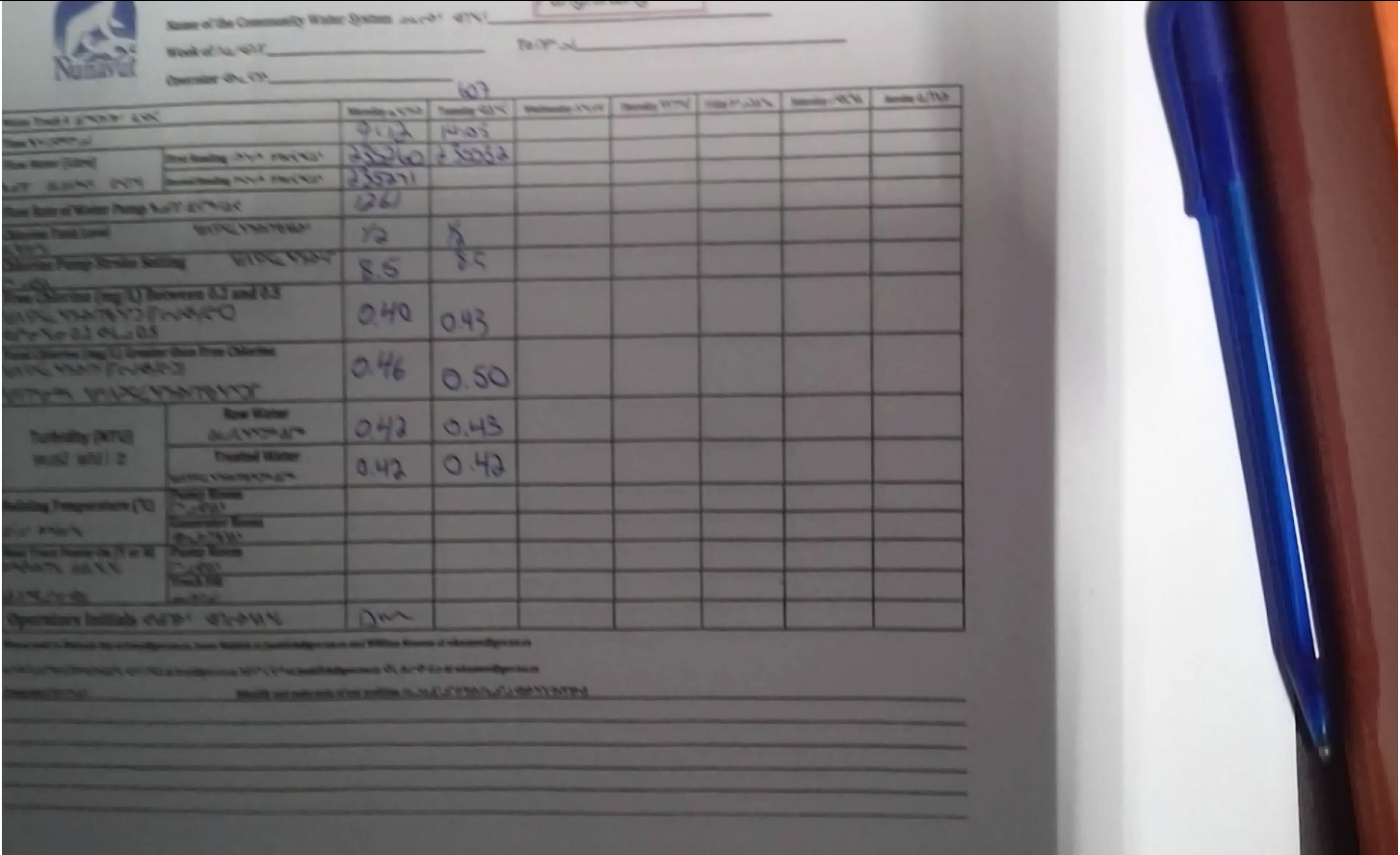
Description: Water Meter after reads 275587.9m³

Photo Log #1

Location

Photo 5

Pangnirtung



Description: Log Book in Water Treatment Facility. Readings appear to be in chronological order, but the dates haven't been filled in, so no date to ascertain the uniformity in recording. First reading is 235260m³ and the second reading is 235532m³

Photo Log #1

Photo 6

Location

Pangnirtung

Delivery Summary By Month and Year

Date Range From: Jan-01-2022 To: Sep-30-2022

Printed on: Oct 07 2022 @ 1:44:55PM

Page: 1 of 1

Total Litres

5000K

4500K

4000K

3500K

3000K

2500K

2000K

1500K

1000K

500K

0K

1/2022

2/2022

3/2022

4/2022

5/2022

6/2022

7/2022

8/2022

9/2022

Month/Year

1/2022

2/2022

3/2022

4/2022

5/2022

6/2022

7/2022

8/2022

9/2022

Month / Year	Litres Delivered
January 2022	4,169,175.70
February 2022	4,068,095.80
March 2022	4,531,005.64
April 2022	4,284,897.11
May 2022	4,242,305.40
June 2022	4,433,358.50
July 2022	3,881,449.70
August 2022	4,152,015.70
September 2022	4,246,852.00
Grand Total:	38,019,155.55

Description: Water Usage Report from January 1, 2022 to September 30, 2022. Report shows 38,019,155.55 Litres delivered.

Photo Log #1

Photo 7

Location

Pangnirtung



Description: Inside the receiving station of the Waste Water Treatment Facility on the right side of the road.



Photo Log #1

Location

Photo 8

Pangnirtung



Description: Discharge Location. Greater than 31 metres from the high water mark. Monitoring station observed.

Photo Log #1

Location

Photo 9


Pangnirtung



Description: The drainage ditch next to the fenced in burn and cap facility. Littered with domestic wind blown debris.



Photo Log #1	Location
Photo 10	Pangnirtung



Description: Bulk Metals section. East Corner of the Bulk Metals Facility. The wall to divert water from entering the facility has washed away. The washed away wall, allows surface water to move through one of three hazardous waste facilities.

Photo Log #1	Location
Photo 11	Pangnirtung



Description: Hazardous Waste in the Bulk Metals section. A couple of parts of the walls on the East side of the Bulk Metal appear to have washed out. These washed out walls need to be repaired to ensure that no water is entering the facility, and taking waste with it as it exits the facility.



Photo Log #1

Location

Photo 12

Pangnirtung



**Description:** The Bulk Metal Debris in front of Hazardous Waste Sea Can. New deposits of bulk metal along the entrance of the bulk metals and hazardous waste facilities.

Photo Log #1

Location

Photo 13

Site of Spill Report 2019-244



**Description:** Site of Spill Report 2019-244. All the sources of the spills were removed and placed into a non-engineered berm on the opposite side of the road, and at the entrance to the Bulk Metals facility. The spills that leaked out of the drums hasn't been cleaned up, and the spill report will remain open till it has been cleaned up. A report should be generated as per the license to provide a status update, and plans to clean up the spill.



Photo Log #1

Location

Photo 14

Site of Spill Report 2019-244



Description: Although the source of contamination has stopped, there is still clean up required of the historic spills.

Photo Log #1

Location

Photo 15

Latitude: 66°9.370

Longitude 65° 40.274'W



Description: The drums from Spill Report 2019-244, placed into a non-engineered secondary containment. New spill migrating towards the opening of the non-engineered berm for hazardous waste. A spill report should be generated for this spill, and mitigate the migration of it. To date no spill reports have been submitted for the spills in the hazardous waste facility.



Photo Log #1

Location

Photo 16

Pangnirtung



Description: subsurface water drainage exposed and migrating out of non-engineered berm used to house the hazardous waste. A drum is situated in the drainage ditch, and new spill can be observed migrating towards the drainage ditch.

Photo Log #1

Location

Photo 17

Pangnirtung



Description: Bulk Woods section, hazardous waste mixed with bulk woods.



Photo Log #1

Location

Photo 18

Pangnirtung



Description: Water exiting the south east corner of the Bulk Metals section of the solid waste facility.

Photo Log #1

Location

Photo 19

Pangnirtung

Pangnirtung Emergency Sewage Discharge Estimates

Date	Sewage Discharge (m3)
05-Apr-22	178
06-Apr-22	178
07-Apr-22	178
08-Apr-22	178
09-Apr-22	178
10-Apr-22	178
11-Apr-22	178
12-Apr-22	178
13-Apr-22	178
14-Apr-22	178
15-Apr-22	178
16-Apr-22	178
17-Apr-22	178
18-Apr-22	178
19-Apr-22	178
20-Apr-22	178
21-Apr-22	178
22-Apr-22	178
23-Apr-22	178
24-Apr-22	178
25-Apr-22	178
26-Apr-22	178
27-Apr-22	178
28-Apr-22	178
29-Apr-22	178
30-Apr-22	178
01-May-22	178
02-May-22	178
03-May-22	178
04-May-22	178
05-May-22	178
06-May-22	178
07-May-22	178
08-May-22	178
09-May-22	178
10-May-22	178
11-May-22	178
12-May-22	178
13-May-22	178
14-May-22	178
15-May-22	178
16-May-22	178
17-May-22	178
18-May-22	178
19-May-22	178
20-May-22	178
21-May-22	178
22-May-22	178
23-May-22	178
24-May-22	178
25-May-22	178
26-May-22	178
27-May-22	178
Total	9434

Description: A total of 9434m³ of sewage was deposited to the receiving environment between April 5, 2022, and May 27, 2022. Deposits are a result of spill report 2022-119.