WATER LICENCE INSPECTION FORM

☒ Original
☐ Follow-Up Report

Licensee	Licensee Representative
Hamlet of Pangnirtung	Bhabesh Roy
Licence No. / Expiry	**Representative's Title**
3AM-PAN1828 expiry May 3, 2028	Municipal Engineer
Land / Other Authorizations	**Land / Other Authorizations**
1BW-DUV2025	
Date of Inspection	**Inspector**
October 7, 2021	Joseph Monteith

Activities Inspected

☐ Camp ☐ Drilling ☐ Mining ☐ Construction ☐ Reclamation ☐ Fuel Storage

☐ Roads/Hauling ☒ Other: Potable Water Source, Waste Water Treatment, and Solid Wastes, spill reports ☐ Other:

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	9-15
F: CONDITIONS APPLYING TO MODIFICATIONS	NI	
G: CONDITIONS APPLYING TO CONSTRUCTION	NI	
H: CONDITIONS APPLYING TO EMERGENCY RESPONSE AND CONTINGENCY PLANNING	U	15
I: CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE PLANNING	NI	
J: CONDITIONS APPLYING TO MONITORING	NI	
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"
☐ Yes ☒ No	

SECTION 1 ☒ **Comments** (s) ☐ **Non-Compliance with Act or Licence** (s.__) ☐ **Action Required** (s.__)

Background

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 Facility, Solid Waste Facility, and a Hazardous Waste Storage Facility.

Inspector Statement

On October 7, 2021, Water License inspection was conducted by WR0 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.

General Condition

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. ftp://ftp.nwb-oen.ca/registry/1%20INDUSTRIAL/1B/1BW%20-%20Watercourse/1BW-DUV2025/3%20TECH/B%20GENERAL/2%20ANNUAL%20RPT/

Water Use and Related Structures

Duval River – Water Source (See photo 1)

1. 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. (photo 2).
2. Water is transferred by pipes from Duval River to the Water Storage Reservoir (photo 3).

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 319037.2m³ (photo 4).
6. Water Technician log sheet were up to date and provided at the Waste Water Treatment Facility. First reading is 235260m^3 and the second reading is 235532m^3 (photo 5).
7. The Water Storage Reservoir capacity is 12,000m³ in the summer, and taking in considerations for the 1.8 metres of ice 71,000m³ 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 120,000m³.
   Water usage records were emailed to WRO Monteith on October 7, 2021. In the report it showed that the community had withdrawn and delivered from January 1, 2021, to September 30, 2021, 39, 109m^3 (photo 6).

Waste Water Treatment Plant (WWTP)(photo 7)

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; Equalization; Bioreactor tanks; Membranes; UV 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.

9. Liquid waste is discharged from the WWTP towards the ocean from a pipe that extends out 19 metres out (See photo 8). At the time of the inspection the WWTP was discharging waste directly to the receiving environment, it may be because the facility was decommissioned due to a mechanical issue within the facility.

Solid Waste Facility

10. 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).
11. 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 water, and possibly mixed with waste. (photo 9, 10, and 18).
12. Hazardous Waste was found throughout the Bulk woods section such as paint cans, and batteries(photo 16).
13. The Bulk Metals section is merged with the Hazardous Waste section (photo 9).
14. 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 9 &11).
15. A separate and standalone Hazardous Waste non-engineered berm was constructed to address Spill Report 2019-244 (photos 12, 13, & 14). 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). 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 14, & 15). The spill observed appeared to be migrating towards the entrance to the non engineered hazardous waste berm (photo 15).
16. A monitoring station on the South East Side of the Bulk Metal Solid Waste Facility (photo 17).

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:

- Clean up the site is Spill Report 2019-244
- 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
- Confirm whether the Waste Water treatment facility was decommissioned and discharging directly to the receiving environment at the time of the inspection.

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.

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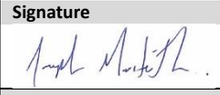
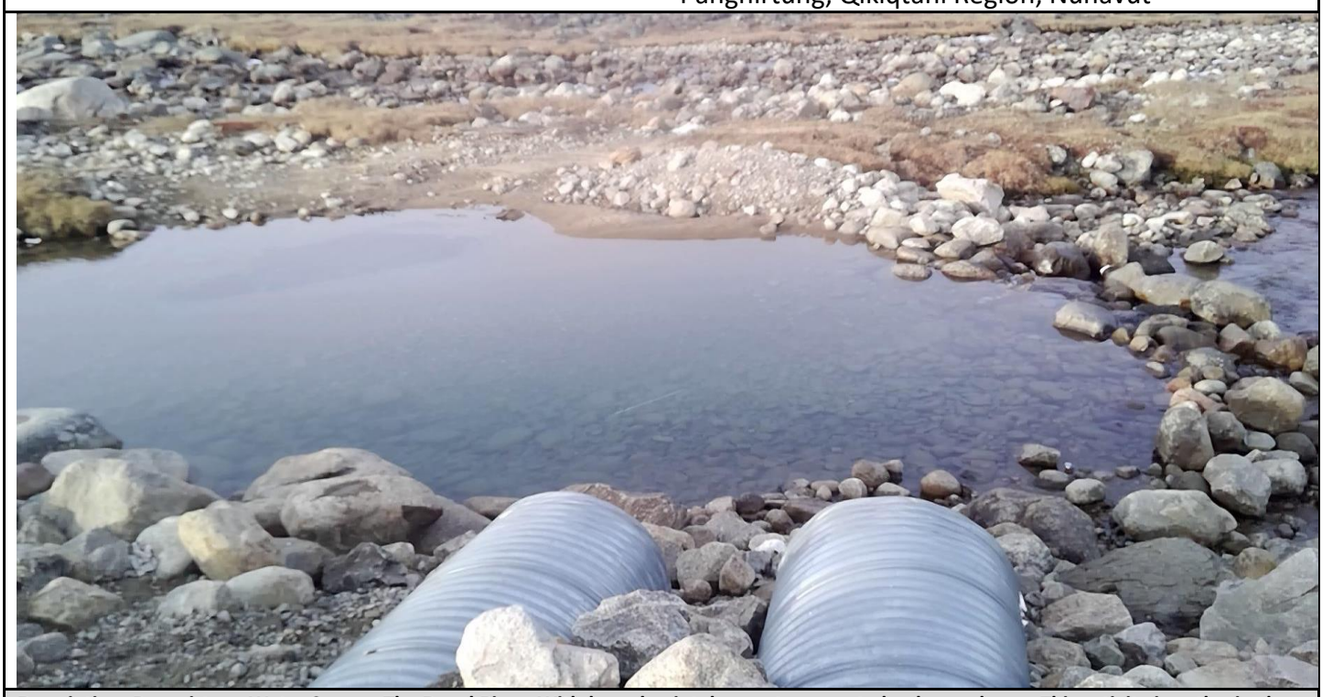
Licensee or Representative	Inspector's Name
Bhabesh Roy	Joseph Monteith
Signature	**Signature**
	
Date	**Date**
	November 12, 2021

CC: Licensing Department, NWB
Justin Hack, Manager of Field Operations, INAC

PHOTO LOG

Date	Camera	Inspector	
September 20, 2020	Nikon Coolpix	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

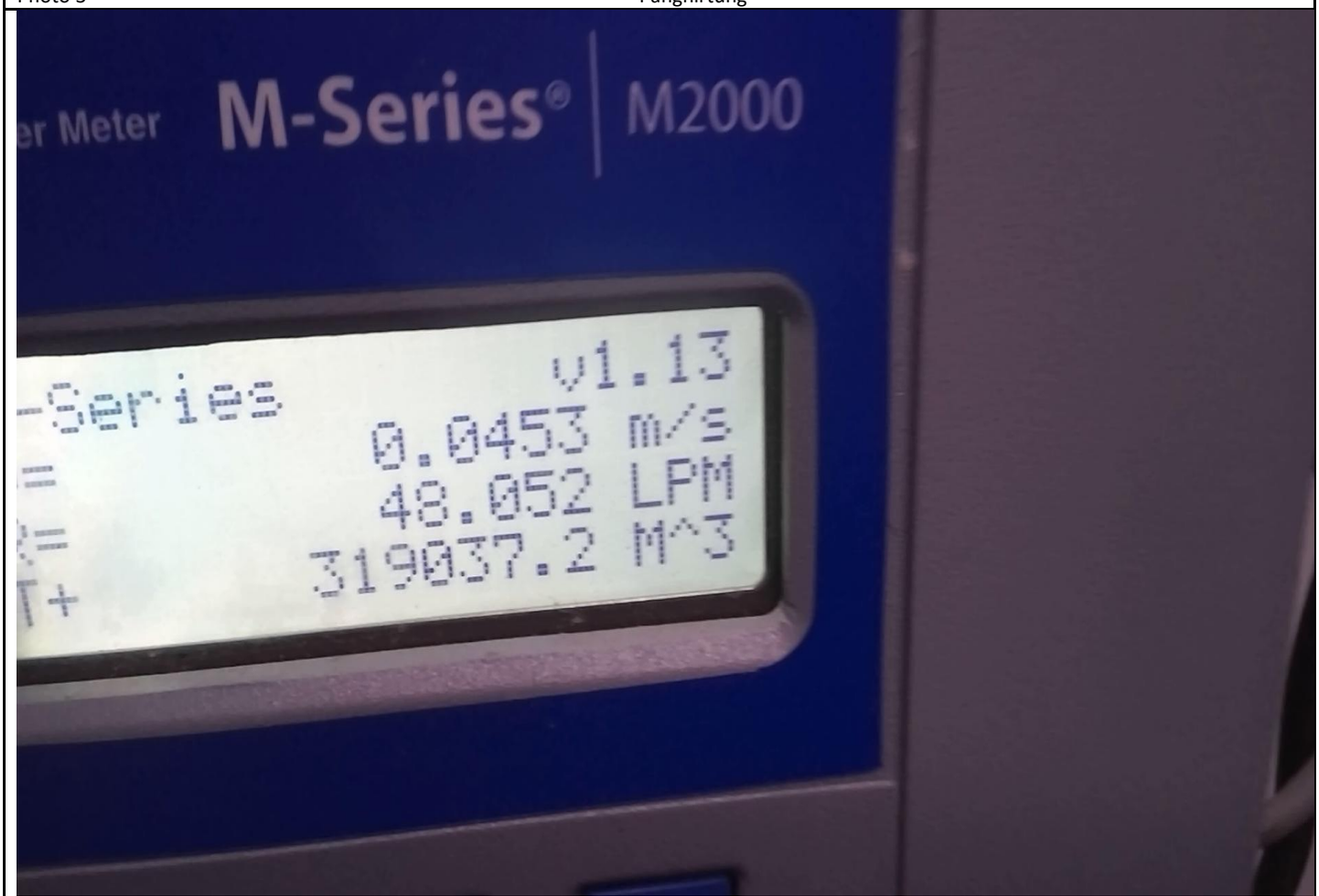
Photo Log #1	Location
Photo 2	Pangnirtung

Description: Culvert Bridge as observed from the Duval River Bridge. The culverts appear to be working as intended, but cobble stone mean to maintain structural integrity of road appears to have fallen to the entrances of the culverts.

Photo Log #1	Location
Photo 2	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.

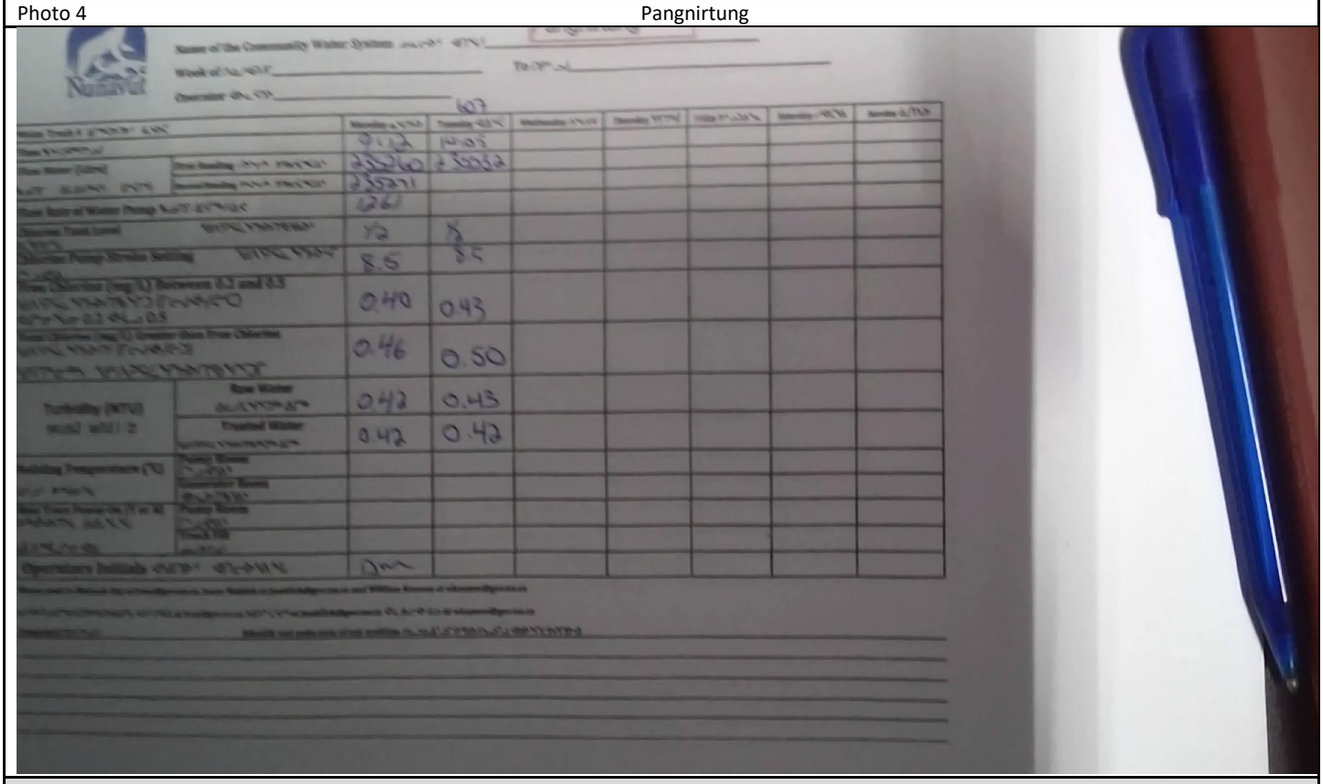
Photo Log #1	**Location**
Photo 3	Pangnirtung



Description: Water Meter after reads 319037.2m³

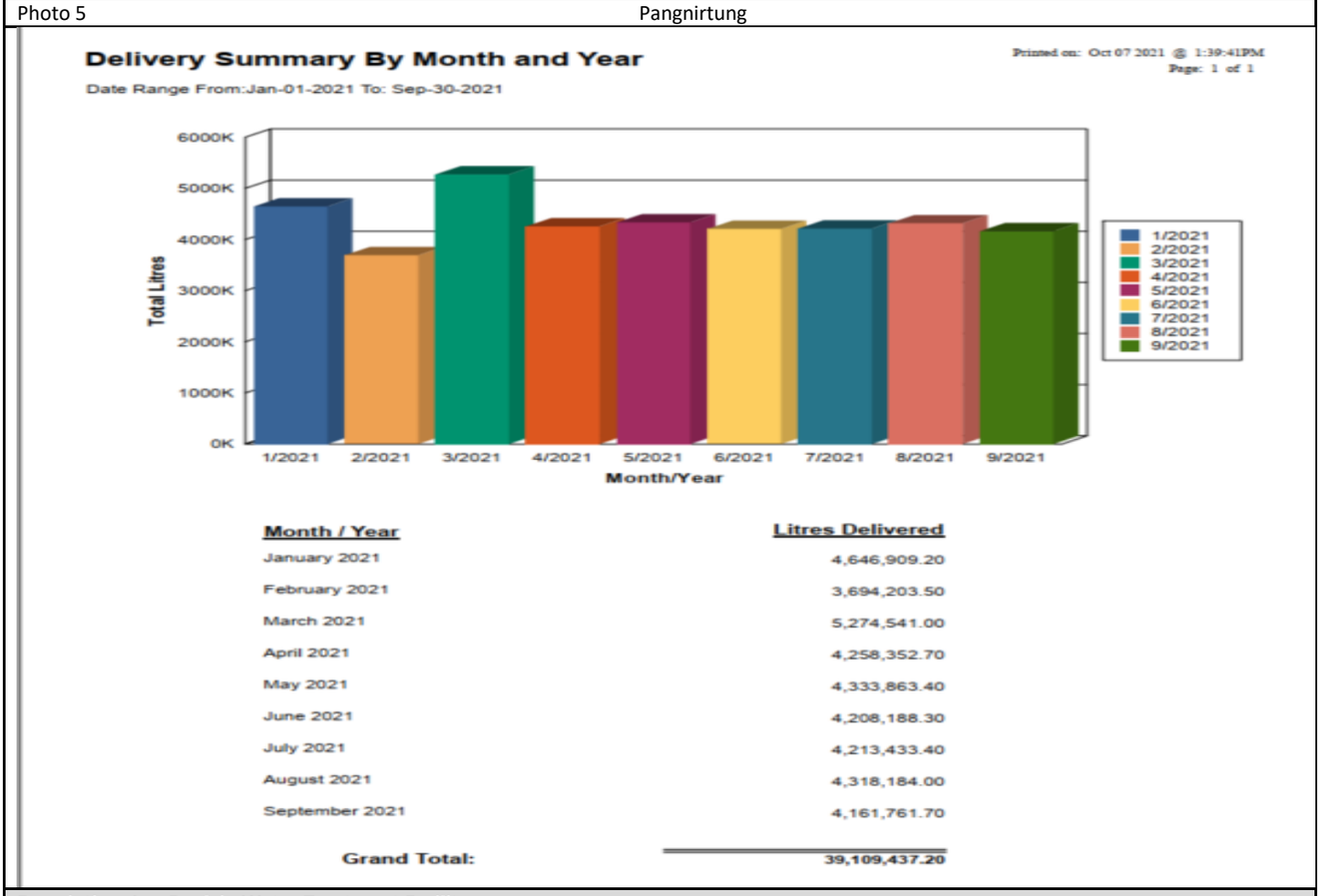
Photo Log #1	**Location**

Photo 4	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	**Location**
Photo 5	Pangnirtung



Delivery Summary By Month and Year

Printed on: Oct 07 2021 @ 1:39:41PM
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Date Range From:Jan-01-2021 To: Sep-30-2021

Month / Year	Litres Delivered
January 2021	4,646,909.20
February 2021	3,694,203.50
March 2021	5,274,541.00
April 2021	4,258,352.70
May 2021	4,333,863.40
June 2021	4,208,188.30
July 2021	4,213,433.40
August 2021	4,318,184.00
September 2021	4,161,761.70
Grand Total:	**39,109,437.20**

Description: Log Book in Water Treatment Facility.

Photo Log #1	**Location**
Photo 6	Pangnirtung

Description: Inside the receiving station of the Waste Water Treatment Facility on the right side of the road. Drainage basin on the side of the road. No issues with water entering facility. Waste from facility could migrate to this drainage basin. A truck had just deposited waste into the facility.

Photo Log #1	Location
Photo 7	Pangnirtung

Description: Spill from within the facility. Spill drains into a sump pit in the receiving side of the waste water facility. At the time of the inspection, it was unknown if the facility was operating as intended as there was no operator, and it appears that a truck that discharged into the facility, had triggered this decant. It is unknown whether the facility was doing any treatment.

Photo Log #1	Location
Photo 8	Pangnirtung

Description: Burning is conducted on the left, and the storage of the solid waste from the Waste Water Treatment Plant is on the right. Windblown garbage litters the drainage ditches on the sides of the Burn and Cap waste disposal facility. The beach side was cleaned up, the drainage ditch wasn't cleaned up.

Photo Log #1	**Location**
Photo 9	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 water to move through one of three hazardous waste facilities, and makes it haz

Photo Log #1	**Location**

Photo 10	Pangnirtung

Description: Hazardous Waste in the Bulk Metals section. . A couple of parts of the walls on the East side of the Bulk Metal, and Treated Wood 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 11	Pangnirtung

Description: The Bulk Metal Debris in front of Hazardous Waste Sea Can. Sea can is damaged; the wall observed in 2019 to be pushed out. New deposits of bulk metal along the entrance of the bulk metals and hazardous waste facilities.

Photo Log #1	Location	
Photo 12	Latitude: 66°9.370	Longitude: 65° 40.274

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 its 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 13	Latitude: 66°9.370	Longitude 65° 40.274'W

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

Photo Log #1	Location	
Photo 14	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.

Photo Log #1	Location
Photo 15	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 16	Pangnirtung

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

Photo Log #1	Location
Photo 17	Pangnirtung

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

Photo Log #1	Location

Photo 18	Pangnirtung

Description: Buildup of surface water within the Bulk Metals section of the Solid Waste Facility.