

2024 BAF-3 ANNUAL NUNAVUT WATER BOARD REPORT

FOR THE NORTH WARNING SYSTEM

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EXECUTIVE SUMMARY

This 2024 Annual Report for the Nunavut Water Board (NWB) has been prepared by Nasittuq for the Department of National Defence (DND) in order to meet the requirements of Part B “General Conditions”, paragraph 1 of its licence 8BC-BAF1929 issued on 01-Sep-2019. This report covers 01 January to 31 December 2024.

Nasittuq is the Operations and Maintenance (O&M) Contractor for the North Warning System (NWS), including BAF-3, the North Warning System (NWS) radar site located on Brevoort Island, Nunavut. The site transitioned to fully attended in 2022 and is now staffed year-round.

866.3 cubic meters of water was drawn from the water supply lake in 2024. This is below the annual maximum of 3,000 cubic meters allowed by the current licence.

Fuel tanks within the berms were demolished in 2012 and 2013, and the berms were intentionally breached in 2012 and 2015. No effluent (berm water) samples were taken in 2024. This monitoring point was discontinued in licence 8BC-BAF1929.

Hazardous waste, including waste oil, from BAF-3 will be shipped to an approved hazardous waste disposal facility outside of Nunavut in 2025.

Non-hazardous domestic solid waste was incinerated on site or flown out to the Logistics Support Site (LSS) in Iqaluit and disposed of at Iqaluit’s landfill. Nasittuq has documented authorization from the community for receiving the waste.

Two spills to the environment occurred at BAF-3 in 2024:

- 27-May-2024, NTNU Spill # 2024-189: A leaking connection on heavy equipment caused a spill on to a gravel pad. Impacted gravel was removed and containerized for off-site disposal. The connection was repaired and the leak was stopped.
- 03-Jun-2024, NTNU Spill # 2024-208: A leaking connection on heavy equipment caused a spill of hydraulic fluid on to a gravel pad. Impacted gravel was removed and containerized for off-site disposal. The connection was repaired and the leak was stopped.

The Spill Contingency Plan was successfully implemented.

1.0 INTRODUCTION

This 2024 Annual Report for the Nunavut Water Board (NWB) has been prepared by Nasittuq for the Department of National Defence (DND) in order to meet the requirements of Part B “General Conditions”, paragraph 1 of its licence 8BC-BAF1929 issued 01 September 2019, and amended effective 14 April 2022. The amendment now allows for 3,000 cubic metres per year.

This report covers 01 January to 31 December 2024.

Nasittuq is the Operation and Maintenance (O&M) Contractor for the North Warning System (NWS), including BAF-3, the NWS radar site located on Brevoort Island, Nunavut. The site transitioned to fully attended in 2022 and is now staffed year-round.

1.1 Report Details

Licensee:	Department of National Defence, Government of Canada
Licence:	8BC-BAF1929 – Type “B”
Location:	BAF-3 North Warning System Site, Brevoort Island, Qikiqtani Region, Nunavut
Report Prepared by:	Alaina Leslie and Reviewed by Don Beattie Nasittuq Corporation, 14-Mar-2025
Time period covered:	01 January to 31 December 2024

2.0 WATER USE

866.3 cubic metres of water was drawn from the water supply lake in 2024. This is below the annual maximum of 3,000 cubic metres (299 cubic metres daily) allowed by the current licence. A maximum of **100.39 cubic metres per day** was drawn from the water supply lake. See Table 2-1 for the volume of water drawn at BAF-3 in 2024.

Table 2-1: Monthly Raw Water Usage at BAF-3 in 2024

Month	Raw water usage (m ³)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	187.5
September	678.8
October	0
November	0
December	0
TOTAL	866.3

3.0 HAZARDOUS WASTE AND WASTE OIL DISPOSAL

The movement of hazardous waste outside of Nunavut is regulated under both the *Transportation of Dangerous Goods Regulations* (TDG) and the *Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations* (XBR).

Hazardous waste, including waste oil, from BAF-3 were packaged to be sent to an approved hazardous waste disposal facility outside of Nunavut as required by the licence. The ship arrived at the site but cancelled the retrograde portion due to time constraints. The hazardous waste was shipped will be shipped to Qikiqtaaluk Environmental in 2025.

4.0 NON-HAZARDOUS SOLID WASTE DISPOSAL

Most of the non-hazardous domestic waste was incinerated on-site and the waste ash was containerized in drums and shipped south.

Some non-hazardous domestic solid waste was flown out to the Logistics Support Site (LSS) in Iqaluit and disposed of at Iqaluit’s landfill. Nasittuq has documented authorization from the community for receiving the waste.

See Table 4-1 for the quantity of waste generated.

Table 4-1: Non-hazardous Domestic Solid Waste Sent for Disposal from BAF-3 in 2024

Month	Waste Generated (kg)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	30
September	0
October	0
November	0
December	0
TOTAL	30

* In August, non-hazardous waste was planned to be shipped South via ship but was postponed to 2025.

5.0 MONITORING PROGRAM

In 2024, a monitoring program was implemented at BAF-3 as required by the water licence, Part J. The monitoring program included the following:

1. Volume of raw water drawn from the water Supply Lake (BAF-1). The information gathered from this requirement is shown in **Section 2.0 Water Use**. The volume of water drawn was within the limit stated in the water licence.

2. Quality of sewage discharged from the final discharge point of the sewage disposal facility (BAF-2). The location of the sewage effluent outfall is shown in **Annex C: Sewage Effluent Outfall (BAF-2) Location with Coordinates**. A sump for the sewage outfall was constructed in 2010. **Analysis of Discharged Sewage Effluent** is shown in **Annex D**.
3. Final Discharge Point from the Landfarm Facility (BAF-3). (inactive)
4. Final Discharge Point of the Bulk Fuel Storage Facility (BAF-4). Fuel tanks within the berms were demolished in 2012 and 2013, and the berms were intentionally breached in 2012 and 2015. As there are no intact berms, sampling location BAF-4 has been discontinued in licence 8BC-BAF1929. **Analysis of Berm Water** has been left blank.
5. Groundwater monitoring activities (BAF-5). Responsibility for groundwater monitoring of the 19-Mar-2015 Jet A1 spill is to be determined by DND.

6.0 SPILLS (UNAUTHORIZED DISCHARGES)

Two spills to the environment occurred at BAF-3 in 2024. Table 6-1, below, describes the spill (unauthorized discharge) details.

The Spill Contingency Plan was successfully implemented.

Table 6-1: Unauthorized Discharges at BAF-3 in 2023

Date, NT-NU Spill #	Product	Quantity	Cause and follow-up action	On-site location
27-May-2024, Spill # 2024-189	Jet-A1	10 L	A leaking connection on heavy equipment caused a spill on to a gravel pad. Impacted gravel was removed and containerized for off-site disposal. The connection was repaired and the leak was stopped.	North side between TSM and Accommodation module (63° 20' 26" N, 64° 09' 26" W)
03-Jun-2024, Spill # 2024-208	Hydraulic fluid	1 L	A leaking connection on heavy equipment caused a spill of hydraulic fluid on to a gravel pad. Impacted gravel was removed and containerized for off-site disposal. The connection was repaired and the leak was stopped.	Outside TSM on west side (65° 20' 25" N, 64° 09' 30" W)

7.0 REVISIONS TO THE SPILL CONTINGENCY PLAN

The Spill Contingency Plan was updated on **27-Mar-2025**. An updated copy of the Spill Contingency Plan has been submitted to the NWB with this annual report.

8.0 PROGRESSIVE RECLAMATION WORK UNDERTAKEN

On 19-Mar-2015 a fuel spill occurred at the BAF-3 summit site. Responsibility for this reclamation work is to be determined by DND.

9.0 ACRONYMS

Table 9-1: Acronyms

Acronym	Definition
MW	Monitoring Well
NAPL	Non-Aqueous Phase Liquids
NWB	Nunavut Water Board
NWS	North Warning System
NWSO	North Warning System Office
PHC	Petroleum Hydrocarbons
RW	Recovery Well
SVE	Soil Vapor Extraction
TDGR	Transportation of Dangerous Goods Regulations
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compounds
XBR	Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations



ANNEX A. HAZARDOUS WASTE AND WASTE OIL DISPOSAL

Hazardous waste was not shipped south in 2025 due to the ship's time constraints.

The Movement Documents for TDG Regulated waste and non-TDG Regulated waste will be copied in this Annex in 2025.

ANNEX B. LOCATION OF LANDFILL (INACTIVE) WITH COORDINATES



Figure 9-1 Coordinates of Landfill (inactive) Location: 63° 20' 30.00"N, 64° 10' 02.00"W

ANNEX C. BAF-3 SEWAGE EFFLUENT OUTFALL LOCATION WITH COORDINATES



Figure 9-2: Coordinates of Sewage Outfall Location (Location ID: BAF-2): 63° 20' 21.40"N, 64° 09' 26.63"W



ANNEX D. ANALYSIS OF DISCHARGED SEWAGE EFFLUENT

The sewage outfall was not discharged in 2024 therefore samples were not required.



ANNEX E. ANALYSIS OF BERM WATER¹

Fuel tanks within the berms were demolished in 2012 and 2013, and the berms were intentionally breached in 2012 and 2015. As there are no intact berms, no effluent (berm water) samples (Location ID: "BAF-4") were taken in this period and this section has been left blank.

Sampling location ID "BAF-4" was discontinued in licence 8BC-BAF1929.

¹ Effluent from bermed fuel storage facilities.



ANNEX F. MONITORING ACTIVITIES

To be determined by DND.