



2022 DYE-M ANNUAL NUNAVUT WATER BOARD REPORT

FOR THE NORTH WARNING SYSTEM

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EXECUTIVE SUMMARY IN ENGLISH FOLLOWS

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EXECUTIVE SUMMARY

This 2022 Annual Report for the Nunavut Water Board (NWB) has been prepared by Nasittuq for the Department of National Defence in order to meet the requirements of Part B “General Conditions”, paragraph 1 of its licence 8BC-DYE-1929. This report covers 01 January to 31 December 2022.

As of 1-Aug-2022, Nasittuq is the Operations and Maintenance (O&M) Contractor for the North Warning System (NWS), including DYE-M, the unattended (unmanned) North Warning System radar site located at Cape Dyer, Nunavut. The site is visited quarterly by Nasittuq staff based in Iqaluit for preventive maintenance inspections and as required for other work.

All water was taken from the melt-water water source, listed in the licence as “DYE-1(b)”. The quantity of water taken (20.4 cubic metres) was below the annual maximum of 3,000 cubic metres allowed by the licence.

Samples of the water contained in the berms of fuel storage facilities were tested on-site using hydrocarbon test strips and confirmed to be within effluent quality limits of the NWB licence before the water was pumped out of the berms.

No hazardous waste and waste oil were shipped off-site in 2022 due to the NWS contract transition. In 2023 hazardous waste and waste oil will be sent to an approved hazardous waste disposal site outside of Nunavut as required by the licence.

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

No spills to the environment occurred in 2022.

No progressive reclamation work was undertaken in 2022.

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TABLE OF CONTENTS

Executive Summary	2
Table of Contents	3
List of Tables.....	3
List of Figures	3
1.0 Introduction	4
1.1 Report Details.....	4
2.0 Water Use	4
3.0 Hazardous Waste and Waste Oil Disposal	5
4.0 Non-Hazardous Solid Waste Disposal	5
5.0 Monitoring Program.....	5
6.0 Spills (Unauthorized Discharges).....	6
7.0 Revisions to the Spill Contingency Plan	6
8.0 Progressive Reclamation Work Undertaken	6
9.0 Acronyms	6
Annex A. Hazardous Waste and Waste Oil Disposal	A-1
Annex B. Sewage Outfall Location (DYE-2) with Coordinates	B-1
Annex C. Analysis of Discharged Sewage Effluent	C-1
Annex D. Location of Bermed Fuel Storage Facilities	D-1
Annex E. Analysis of Berm Water.....	E-1

LIST OF TABLES

Table 2-1: Monthly Raw Water Usage at DYE-M in 2022	4
Table 4-1: Non-hazardous Domestic Solid Waste Sent for Disposal from DYE-M in 2022	5
Table 9-1: Acronyms	6

LIST OF FIGURES

Figure B-1: Coordinates of Sewage Outfall Location (DYE-2): 66° 39' 51.26"N, 61° 21' 16.54"W.....	B-1
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1.0 INTRODUCTION

This 2022 Annual Report for the Nunavut Water Board (NWB) has been prepared by Nasittuq for the Department of National Defence in order to meet the requirements of Part B “General Conditions”, paragraph 1 of its licence 8BC-DYE0919 issued on 01-Sep-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 2022.

As of 1-Aug-2022, Nasittuq is the Operation and Maintenance (O&M) Contractor for the North Warning System (NWS), including DYE-M, the unattended (unmanned) NWS radar site located at Cape Dyer, Nunavut. An O&M contract transition occurred over the summer of 2022.

The site is visited quarterly by Nasittuq staff based in Iqaluit for preventive maintenance inspections and as required for other work.

1.1 Report Details

Licensee:	Department of National Defence, Government of Canada
Licence:	8BC-DYE-1929 – Type “B”
Location:	DYE-M North Warning System Site, Cape Dyer, Qikiqtani Region, Nunavut
Report Prepared by:	Alaina Leslie and reviewed by Don Beattie Nasittuq Corporation , 21-Mar-2022
Time period covered:	01 January to 31 December 2022

2.0 WATER USE

In 2022, **20.4 cubic metres** of water was drawn from the water source. All water was taken from the melt-water water source, listed in the licence as “DYE-1(b)”. The quantity of water taken was below the annual maximum of 3,000 cubic meters allowed by the licence.

See Table 2-1 for the volume of water drawn from the water source at DYE-M each month in 2022.

Table 2-1: Monthly Raw Water Usage at DYE-M in 2022

Month	Raw water usage (m ³)
January	0
February	0
March	0
April	0
May	0
June	0
July	6.4
August	11.1
September	0
October	2.9
November	0
December	0
TOTAL	20.4

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3.0 HAZARDOUS WASTE AND WASTE OIL DISPOSAL

No hazardous waste and waste oil were shipped off-site in 2022 due to the NWS contract transition. In 2023 hazardous waste and waste oil will be sent to an approved hazardous waste disposal site outside of Nunavut as required by the licence.

4.0 NON-HAZARDOUS SOLID WASTE DISPOSAL

Non-hazardous domestic solid waste was flown out to the Logistics Support Site in Iqaluit and was 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 DYE-M in 2022

Month	Waste Generated (kg)
January	0
February	227
March	0
April	0
May	91
June	20
July	227
August	1363
September	235
October	236
November	118
December	0
TOTAL	2,517

5.0 MONITORING PROGRAM

In 2022, a monitoring program was implemented at DYE-M as required by the water licence. The monitoring program included the following:

1. Volume of raw water drawn from the water Supply Lake (DYE-1(a)). No water was drawn from the water lake in 2022.
2. Volume of raw water drawn from the melt water source (DYE-1(b)). The information from this monitoring program is shown in **Section 2.0 Water Use**. The volume of water drawn was within the limit stated in the water licence.
3. Quality of sewage discharged from the final discharge point of the sewage disposal facility (DYE-2). The location of the sewage effluent outfall is shown in **Annex B**. Two sumps for the sewage outfall

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were constructed in 2010. The outfalls were not discharged in 2022 and therefore no sampling was required. **Annex C** has been left blank.

4. Accumulated rain and meltwater contained in the berms of fuel storage facilities was analyzed with hydrocarbon test strips and confirmed to be within the effluent quality limits listed in the water licence, Part D, prior to discharge (DYE-3). The coordinates and the results of the analysis are shown in **Annex D**. All samples met the effluent requirements of the water licence, Part D.
5. Final Discharge Point from the Landfarm (DYE-4). No landfarm has been established at DYE-M, so this monitoring station remains inactive.

6.0 SPILLS (UNAUTHORIZED DISCHARGES)

No spills to the environment occurred in 2022.

7.0 REVISIONS TO THE SPILL CONTINGENCY PLAN

The Spill Contingency Plan was updated on **1-Aug-2022**. An updated copy of the Spill Contingency Plan has been submitted to the NWB with this annual report.

8.0 PROGRESSIVE RECLAMATION WORK UNDERTAKEN

No progressive reclamation work was undertaken in 2022.

9.0 ACRONYMS

Table 9-1: Acronyms

Acronym	Definition
n.o.s.	not otherwise specified
NWB	Nunavut Water Board
NWS	North Warning System
PCB	Polychlorinated Biphenyl
TDGR	Transportation of Dangerous Goods Regulations

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ANNEX A. HAZARDOUS WASTE AND WASTE OIL DISPOSAL

Hazardous waste was not shipped off site in 2022.

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ANNEX B. SEWAGE OUTFALL LOCATION (DYE-2) WITH COORDINATES



Figure B-1: Coordinates of Sewage Outfall Location (DYE-2): 66° 39' 51.26"N, 61° 21' 16.54"W

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ANNEX C. ANALYSIS OF DISCHARGED SEWAGE EFFLUENT

The sewage outfall sump was not discharged in 2022 and therefore samples were not required.

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ANNEX D. LOCATION OF BERMED FUEL STORAGE FACILITIES

Table D-1 contains the locations and sampling dates for the wastewater discharged from the bermed fuel storage facilities.

Table D 1: Location of Bermed Fuel Storage Facilities and Date Sampled in 2022

Berm	Location on-site	Discharge Latitude ¹	Discharge Longitude	Date
DYE W20A	Summit	66°40'00.13"N	61°21'25.76"W	Jul-2022
DYE W22K, W22J, W22I & W20B	Summit	66°39'53.59"N	61°21'23.78"W	Jul-2022

¹ Final discharge point of bermed fuel storage facility

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ANNEX E. ANALYSIS OF BERM WATER²

Accumulated rain and meltwater in the bulk fuel storage tank berms at DYE-M was analysed using hydrocarbon test strips as per the approved QA/QC Plan for Berm Water Sampling as stated in the water licence 8BC-DYE1929, PART D, Item 12. The photo log of the hydrocarbon test strips was misplaced due to the NWS contract transition.

² Effluent from bermed fuel storage facilities.