



**2008 Annual Report
to the
Nunavut Water Board**

**Licensee: Department of National Defence,
Government of Canada**

Licence: NWB6DYE0409 - Type "B"

**Location: DYE-M North Warning System Site,
Cape Dyer, Baffin Region, Nunavut**

**Report submitted by: Nasittuq Corporation,
31 March 2009**



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Cape Dyer, Baffin Region, Nunavut
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Executive Summary

This 2008 Annual Report to the Nunavut Water Board (NWB) is submitted as required by Licence Number NWB6DYE0409 – Type “B”, Part B. General Conditions, para. 1.

DYE-M is an unattended (unmanned) North Warning System radar site at Cape Dyer, Nunavut. The site is visited quarterly for preventive maintenance inspections and as required for other work by Nasittuq staff based out of the Logistics Support Site - Iqaluit (LSS-Q), Iqaluit, Nunavut. The site was temporarily attended (manned) due to project activity periodically from May to August.

The annual water usage was 121.4 cubic meters of water.

Hazardous waste was removed from the site for disposal outside of Nunavut. The waste went to Clean Harbors, Thurso, Quebec. The waste was 22 drums of assorted waste (oil, glycol, etc.) and 3 crates of batteries.

Nonhazardous domestic solid waste was flown out to the Logistics Support Site - Iqaluit and disposed of at Iqaluit’s landfill.

The sewage effluent was sent for laboratory analysis.

One outdoor spill (fuel) occurred and was cleaned up.

The Spill Contingency Plan was revised. The main changes were: spills are now immediately reported to the NWSCC, and the Nasittuq Emergency Contact List (used only by Nasittuq Corp. staff) was updated to reflect changes in personnel.



Introduction

This 2008 Annual Report to the Nunavut Water Board (NWB) is submitted as required by Licence Number NWB6DYE0409 – Type “B”, Part B. General Conditions, para. 1.

DYE-M is an unattended (unmanned) North Warning System radar site at Cape Dyer, Nunavut. The site is visited quarterly for preventive maintenance inspections and as required for other work by Nasittuq staff based out of the Logistics Support Site - Iqaluit (LSS-Q), Iqaluit, Nunavut. The site was temporarily attended (manned) due to project activity periodically from May to August.

Water Usage

The annual water usage was 121.4 cubic meters which is an average of 0.33 cubic meters per day, well below the maximum of 10 cubic meters per day allowed by the licence.

Recording of the DYE-M flow meter readings began June 2008. Therefore, for January to May, the water usage in Table 1 below was calculated based on 150 liters per person per day multiplied by the actual daily site population.

Table 1. Monthly and annual water usage in 2008 at DYE-M.

Month	Water usage in cubic meters (m3)
January	4.2
February	0
March	0
April	0
May	15.0
June	25.6
July	28.7
August	24.5
September	17.9
October	3.4
November	0
December	2.1
TOTAL for 2008	121.4

Hazardous Waste and Waste Oil Disposal

Hazardous waste and waste oil were sent to an approved hazardous waste disposal site outside of Nunavut as required by the licence. The waste was sent to Clean Harbors, 200-7305 blvd Marie-Victorin, Brassard, QC, J4W 1A6. The receiving site address is Clean Harbors, 400 Galipeau, Rang 5, Thurso, QC, J0X 3B0.

Table 2 below lists the items sent for disposal.

Table 2. Summary of waste sent for disposal in 2008 from DYE-M.

Site	Description	Quantity
DYE-M	Waste oil	14 drums
DYE-M	Waste fuel and water mixture	2 drums
DYE-M	Waste glycol	2 drums
DYE-M	Waste varsol	1 drum
DYE-M	Waste oily rags	1 drum
DYE-M	Waste paint	1 drum
DYE-M	Waste fuel contaminated soil	1 drum
DYE-M	Waste batteries, wet, non-spillable	1 crate of 125 kg
DYE-M	Waste batteries, wet, filled with acid	2 crates total of 281 kg

Nonhazardous Solid Waste Disposal

Nonhazardous domestic solid waste was flown out to LSS-Q and disposed of at Iqaluit's landfill. Some solid waste was deposited at the on-site landfill (see Annex C).

Monitoring Program

See Annex A for the location of the sewage effluent outfall, DYE-2.

See Annex B for analysis of sewage effluent.

See Annex C for the location of the landfill.

Spills (Unauthorized Discharges)

One outdoor spill occurred. It is in Table 3 below.

Table 3. Outdoor spills in 2008 at DYE-M.

Date	Product	Quantity	Cause and follow-up action	Location at DYE-M
22 Sep 2008	Jet A1 fuel	75 liters	Cap on sealift refueling line leaked fuel. Contaminated soil was placed in drums.* Cap was replaced..	Beach tanks

* Drums are retrograded to a licensed waste disposal company outside of Nunavut.

Revisions to the Spill Contingency Plan

The Spill Contingency Plan was revised as follows:

- spills are immediately reported to the NWSCC instead of the LSS Manager;
- Spill Response Flow Chart was updated to show the immediate report to NWSCC;
- all spills, indoors and outdoors, must be reported;
- all statements about burning (i.e. burning recovered fuel, fuel soaked sorbent, etc.) and burn bins were removed; and
- two names (I. Wawryk, S. Cheng) were removed from the Nasittuq Emergency Contact List. This List is used only by Nasittuq Corp. staff.

Progressive reclamation work undertaken

None required.

Annex A

DYE-M Sewage Outfall Location with GPS Co-ordinates



Annex B

Analysis of Sewage Effluent in 2008 for DYE-M (samples taken monthly when sewage actively discharged)

January 2008 – page 1 of 2

REPORT OF ANALYSIS

ACCUTEST LABORATORIES LTD

Client: Nasittuq Corp. (Ottawa)
100-170 Laurier Ave. West
Ottawa, ON
K1P 5V5
Attention: Mr. Sam Chang

Report Number: 2803213
Date: 2008-02-25
Date Submitted: 2008-02-13
Project:

Chain of Custody Number: 72169

P.O. Number:
Matrix:

LAB ID: 604480		604481		Sewage	
Sample Date: 2008-01-25		2008-01-25		GUIDELINE	
Sample ID: DYE-M		B-2			
PARAMETER	UNITS	MRL	647	TYPE	LIMIT
Biochemical Oxygen Demand	mg/L	1	3860		
Conductivity	uS/cm	5	523		
N-NH3 (Ammonia)	mg/L	2.0	19.8		
NO2 + NO3 as N	mg/L	0.10	<0.10		
pH			5.32		
Phenols	mg/L	0.001	6.61		
Sulphate	mg/L	1	0.385		
Total Suspended Solids	mg/L	2	1		
Calcium	mg/L	1	466		
Magnesium	mg/L	1	8		
Potassium	mg/L	1	5		
Sodium	mg/L	1	23		
Arsenic	mg/L	0.05	64		
Cadmium	mg/L	0.01	0.06		
Chromium	mg/L	0.02	<0.01		
Copper	mg/L	0.01	0.06		
Iron	mg/L	0.1	1.88		
Lead	mg/L	0.01	4.4		
Mercury	mg/L	0.05	0.02		
Nickel	mg/L	0.01	<0.05		
Zinc	mg/L	0.05	0.02		
			0.88		

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:
Metals analysis performed on aqua-regia digest of sample material.

APPROVAL:
Lorna Wilson
Agriculture Lab Supervisor

REPORT OF ANALYSIS

ACCUTEST LABORATORIES LTD

Client: Nasittuq Corp. (Ottawa)
100-170 Laurier Ave. West
Ottawa, ON
K1P 5V5
Attention: Mr. Sam Chang

Report Number: 2803213
Date: 2008-02-25
Date Submitted: 2008-02-13
Project:

Chain of Custody Number: 72169

P.O. Number:

Matrix:

Sewage

PARAMETER	UNITS	MRL	LAB ID: Sample Date: Sample ID:	604480 2008-01-25 DYE-M	GUIDELINE		
					TYPE	LIMIT	UNITS
Oil & Grease							
Oil & Grease - Mineral	mg/L	1		6			
Oil & Grease - Non-mineral	mg/L	1		101			
Oil & Grease - Total	mg/L	1		107			

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:

Tony Zhao

Organic Lab Coordinator
Results made only in the parameters listed on the samples submitted for analysis

8-146 Colonnade Road, Ottawa, ON, K2E 7Y1 608 Norris Court, Kingston, ON, K7P 2R9

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REPORT OF ANALYSIS

ACCUTEST LABORATORIES - A New Bodycote Company

Client: Nasittuq Corp. (Ottawa)
100-170 Laurier Ave. West
Ottawa, ON
K1P 5V5

Attention: Ms. Carolyn Telewiak

Report Number: 2818221
Date: 2008-08-07
Date Submitted: 2008-07-28

Project: LSS-Q

P.O. Number: 280480

Matrix: Sewage

Chain of Custody Number: 45382

PARAMETER	UNITS	MRL	Sample Date: 644979 2008-07-21 Dye-Main	LAB ID: 644979 2008-07-21 Dye-Main	GUIDELINE		
					TYPE	LIMIT	UNITS
Biochemical Oxygen Demand	mg/L	1	858				
Conductivity	uS/cm	5	1520				
NH ₃ (Ammonia)	mg/L	2.0	108				
NO ₂ + NO ₃ as N	mg/L	0.10	<0.10				
pH			7.50				
Phenols	mg/L	0.1	0.478				
Sulphate	mg/L	1	3				
Total Suspended Solids	mg/L	2	212				
Calcium	mg/L	1	9				
Magnesium	mg/L	1	<1				
Potassium	mg/L	1	33				
Sodium	mg/L	2	71				
Arsenic	mg/L	0.05	<0.05				
Cadmium	mg/L	0.01	<0.01				
Chromium	mg/L	0.05	<0.05				
Copper	mg/L	0.01	0.83				
Iron	mg/L	0.1	3.0				
Lead	mg/L	0.01	0.02				
Mercury	mg/L	0.0001	<0.0001				
Nickel	mg/L	0.01	0.03				
Zinc	mg/L	0.05	0.28				

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment: 644979: Holding time for N-NO₂-N-NO₃ analysis was exceeded. Phenols MRL elevated due to matrix interference. Metals analysis performed on aqua-regia digest.

APPROVAL:

Ewan McRobbie
Inorganic Lab Supervisor

Results relate only to the parameters listed on the samples as identified for analysis

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608 Norris Court, Kinston, ON K7P 2R9

8-146 Colonnade Road, Ottawa, ON K2E 7Y1

July 2008 – page 2 of 3

REPORT OF ANALYSIS

ACCUTEST LABORATORIES - A New Bodycote Company

Client: Nasittuq Corp. (Ottawa)
100-170 Laurier Ave. West
Ottawa, ON
K1P 5V5
Attention: Ms. Carolyn Telewski

Report Number: 2818221
Date: 2008-08-07
Date Submitted: 2008-07-28
Project: LSS-Q
P.O. Number: 280-480
Matrix: Sewage

Chain of Custody Number: 45382

LAB ID: 644879		Sample Date: 2008-07-21		Dye-Main		GUIDELINE	
PARAMETER		UNITS	MRL			TYPE	LIMIT
Oil & Grease							
Oil & Grease - Mineral		mg/L	1	<1			
Oil & Grease - Non-mineral		mg/L	1	45			
Oil & Grease - Total		mg/L	1	45			

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:

Mina Nasirai
Organic Lab Supervisor

B-148 Colonnade Road Ottawa ON K2P 7Y1 #011 Marie Perle Kingston ON K7B 5G6

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Residue solids only in the concentration tested are the same as the residue solids in the sample.

July 2008 - page 3 of 3

REPORT OF ANALYSIS

ACCUTEST LABORATORIES - A New Bodycote Company

Client: Nasittuq Corp. (Ottawa)
100-170 Laurier Ave. West
Ottawa, ON
K1P 5V5
Attention: Ms. Carolyn Telewiak

Report Number: 2818215
Date: 2008-07-29
Date Submitted: 2008-07-28
Project: LSS-Q
P.O. Number: 280480
Matrix: Sewage

Chain of Custody Number: 45382

PARAMETER	UNITS	MRL	Sample Date: 2008-07-21 Sample ID: Dye-Main	LAB ID: 84673	GUIDELINE		
					TYPE	LIMIT	UNITS
Faecal Coliforms	cf/100mL	120000					

MRL = Method Reporting Limit. INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL: Jennifer Mitchell
Microbiology Lab Supervisor
Does the table only in the parameters listed on the samples submitted for analysis.

August 2008 – page 1 of 3

REPORT OF ANALYSIS

ACCUTEST LABORATORIES - A New Bodycote Company

Client: Nasitting Corp. (Ottawa)
100-170 Laurier Ave. West
Ottawa, ON
K1P 5V5

Report Number: 2620423
Date: 2008-08-29
Date Submitted: 2008-08-18
Project:

Attention: Ms. Carolyn Telewjak

Chain of Custody Number: 88437

P.O. Number: _____
Matrix: _____
Washington

[illegible]

URL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:

Ewan McRobbie
Inorganic Lab Supervisor

August 2008 – page 2 of 3

REPORT OF ANALYSIS

ACCUTEST LABORATORIES • A New Bodycode Company

Client: Nasittuq Corp. (Ottawa)
100-170 Laurier Ave. West
Ottawa, ON
K1P 5V5
Attention: Ms. Carolyn Telewiak

Report Number: 2820423
Date: 2008-08-29
Date Submitted: 2008-08-18
Project:

Chain of Custody Number: 89437

P.O. Number:
Matrix: Wastewater

PARAMETER	UNITS	MRL	LAB ID: Sample Date: Sample ID:	651273 2008-08-12 Wastewater	Wastewater		
					TYPE	LIMIT	UNITS
Oil & Grease							
Oil & Grease - Mineral	mg/L	1		3			
Oil & Grease - Non-mineral	mg/L	1		35			
Oil & Grease - Total	mg/L	1		38			

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:

Mina Nasirai
Organic Lab Supervisor
Results valid only in the parameters listed on this certificate submitted for analysis

8-146 Colonnade Road, Ottawa, ON K2E 7Y1 608 Norris Court, Kingston, ON K7P 2P9

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REPORT OF ANALYSIS

ACCUTEST LABORATORIES - A New Bodycote Company

Client: Nasitug Corp. (Ottawa) 100-170 Laurier Ave. West Ottawa, ON K1P 5V5	Report Number: 2820412 Date: 2008-08-20 Date Submitted: 2008-08-18 Project:
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DYE-N added by BT

LAB ID:		Matrix:		Wastewater		
Sample Date:				GUIDELINE		
Sample ID:						
651261	2008-08-12					
Nasir-1	Aug					
12-08						
PARAMETER	UNITS	MRL		TYPE	LIMIT	UNITS
Faecal Coliforms	cf/100mL		8600000			

MPL = Method Reporting Limit INC = Incomplete AO = Analytical Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:

Jennifer Mitchell
Microbiology Lab Supervisor

Annex C

Location of Landfill at DYE-M with GPS Co-ordinates

