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SOW Ref: 16.F.5.d

2020 ANNUAL NUNAVUT WATER BOARD

REPORT FOR DYE-M

FOR THE

North Warning System

Contract # W8485-100224/001/NX

SOW Ref: 16.F.5.d

Document Number

NWB-DM-2020, Rev 1, 18-Mar-2021

Prepared for
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EXECUTIVE SUMMARY IN ENGLISH FOLLOWS

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EXECUTIVE SUMMARY

This 2020 Annual Report for the Nunavut Water Board (NWB) has been prepared by Raytheon Canada (RC) 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 2020.

RC is the Operation and Maintenance 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 RC 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 was below the annual maximum of 1,440 cubic meters 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.

Hazardous waste and waste oil were sent to an approved hazardous waste disposal outside of Nunavut as required by the licence. The hazardous waste was shipped to Qikiqtaaluk Environmental, through their subcontractor Veolia, 2630, boul. Industriel, Chamby, QC J3L 4V2.

The hazardous waste consisted of 78 drums of assorted waste (oil, fuel, glycol, etc.), and two crates of waste batteries.

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

Three spills to the environment occurred at DYE-M in 2020:

- On 01-Jul-2020, the technicians on site at Cape Dyer (DYE-M) were using their loader when the hydraulic line broke resulting in a spill of 20L of hydraulic fluid on the ground. The technicians on site shut down the loader immediately and cleaned up the area. The technicians laid down oil absorbent pads and booms on the ground and placed a drip tray under the loader until repairs could be completed. All soil impacted by hydraulic fluid was containerized for southern disposal .
- On 28-Aug-2020 during sealift, the Sterling dump truck was on route from the beach to the main site when the hydraulic oil tank broke off the truck. The hydraulic tank has a total volume of 113 L but wasn't full at the time. The hydraulic oil tank was about half full when it broke off the dump truck but only ~10 L spilled out of the tank onto the ground. An area of 1m² was impacted by the spill. The technicians on site used shovels and transferred the contaminated soil into a salvage drum. The spill was remediated and is considered closed.
- On 27-Aug-2020, the technicians on site at DYE-M moved their retrograde waste from the hangar to the beach. On 01-Sep-2020, the technicians were inspecting the staging area at the beach site when they noticed a leaking 45 gallon drum containing Jet-A1. It was determined that the leak was of about 5 L of Jet-A1 which impacted an area of 1m² of soil. The technicians on site used shovels to pick up the contaminated soil which they then transferred into a salvage drum and placed for retrograde. The spill has been cleaned up. The spill is now closed.

The Spill Contingency Plan was successfully implemented.

No progressive reclamation work was undertaken in 2020.

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TABLE OF CONTENTS

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	7
5.0	Monitoring Program.....	7
6.0	Spills (Unauthorized Discharges).....	8
7.0	Revisions to the Spill Contingency Plan	9
8.0	Progressive Reclamation Work Undertaken	9
9.0	Acronyms	9
Annex A.	Hazardous Waste and Waste Oil Disposal in 2020	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 2020.....	4
Table 3-1: Hazardous Waste and Waste Oil Sent for Disposal from DYE-M in 2020.....	6
Table 4-1: Non-hazardous Domestic Solid Waste Sent for Disposal from DYE-M in 2020	7
Table 6-1: Unauthorized Discharges at DYE-M in 2020	8
Table 9-1: Acronyms.....	9
Table D-1: Location of Bermed Fuel Storage Facilities and Date Sampled in 2020.....	D-1

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 2020 Annual Report for the Nunavut Water Board (NWB) has been prepared by Raytheon Canada (RC) 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. This report covers 01 January to 31 December 2020.

RC is the Operation 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 RC 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: Jeremie Berube and reviewed by Don Beattie
Raytheon Canada , 17-Mar-2021
Time period covered: 01 January to 31 December 2020

2.0 WATER USE

In 2020, 54.0 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 1,440 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 2020.

Table 2-1: Monthly Raw Water Usage at DYE-M in 2020

Month	Raw water usage (m ³)
January	0
February	0
March	0
April	0
May	0
June	11.34
July	11.44
August	16.34
September	14.88
October	0
November	0
December	0
TOTAL	54.0

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3.0 HAZARDOUS WASTE AND WASTE OIL DISPOSAL

Hazardous waste and waste oil were sent to an approved hazardous waste disposal facility outside of Nunavut as required by the licence. The hazardous waste was shipped to Qikiqtaaluk Environmental, through their subcontractor Veolia, 2630, boul. Industriel, Chambly, QC J3L 4V2.

The hazardous waste consisted of 78 drums of assorted waste (oil, fuel, glycol, etc.), and two crates of waste batteries.

See Table 3-1, below, for the list of items sent for disposal. See **Annex A** for the shipping document including the completed movement documents for waste regulated under the Transportation of Dangerous Goods Regulations (TDGR) and NWS Manifests for non-regulated waste.

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Page: 5-9

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Table 3-1: Hazardous Waste and Waste Oil Sent for Disposal from DYE-M in 2020.

Description, TDG shipping name	Quantity	Movement Document or Manifest #
Waste batteries, filled with acid	1 crate	Movement Document 2539191-3
Waste batteries, wet, non-spillable	1 crate	Movement Document 2539189-7
Waste Asbestos containing Material	8 drums	NWS Manifest 42382, 42383, 42384, 42386
Not TDG Regulated		
Waste Fuel, Aviation, Turbine Engine	1 drums	Movement Document 2539189-7
Waste tank bottom water/tank cleaning effluent	17 drums*	Movement Document 2539189-7
Waste Fuel, Aviation, Turbine Engine Mixture		
Waste Fuel/Water Mixture	12 drums*	Movement Document 2539189-7
Waste Fuel, Aviation, Turbine Engine Mixture		
Waste glycol	2 drums	NWS Manifest 42173, 40520
Not TDG Regulated		
Waste Oil	18 drums	NWS Manifest 42173, 42174, 42252, 42256, 38685, 40516, 40517, 40518, 40520
Not TDG Regulated		
Waste oily rags	5 Drums	Movement Document 2539191-3 (2 drums) and 2539189-7 (3 drums)
Waste Solids Containing Flammable Liquid, N.O.S. (Fuel, Aviation, Turbine Engine)		
Waste POL soaked absorbent	1 Drum	Movement Document 2539189-7
Waste solids containing flammable liquids, n.o.s (fuel, aviation, turbine engine)		
Waste glycol soaked rags	1 Drum	NWS Manifest 40520
Not TDG Regulated		
Waste Jet-A1 fuel soaked rags	3 Drums	Movement Document 2539189-7
Waste solids containing flammable liquids, n.o.s (fuel, aviation, turbine engine)		
Waste fuel contaminated soil**	8 Drums	NWS Manifest 40502, 40508, 40509, 40510
Waste Sewage Sludge***	2 drums	NWS Manifest 42253
Not TDG Regulated		

* 30 drums of "waste fuel aviation, turbine, engine" listed on Movement Document 2539189-7 include waste fuel/water mixture and Waste tank bottom water/tank cleaning effluent. Three empty drums

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were deemed to be scrap metal but were recorded on the NWS Manifest “waste fuel/water mixture”. Because the three drums were empty they are not included on the movement document.

** The waste fuel contaminated soil was not high in fuel concentrations and was deemed to be non-regulated.

*** Sewage sludge was collected from the indoor sewage sump tank, (no sewage sludge was collected, or discharged, from the sewage outfall.)

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. RC 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 2020

Month	Waste Generated (kg)
January	0
February	145
March	0
April	0
May	0
June	508
July	318
August	249
September	0
October	499
November	0
December	0
TOTAL	1,719

5.0 MONITORING PROGRAM

In 2020, 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 2020.
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 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 were constructed in 2010. The outfalls were not discharged in 2020 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

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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)

Table 6-1: Unauthorized Discharges at DYE-M in 2020

Date, NT-NU Spill #	Product	Quantity	Cause and follow-up action	On-site location
01-Jul-2020 Spill # 20-205	Hydraulic Fluid	20L	<p>On 01-Jul-2020, the technicians on site at Cape Dyer (DYE-M) were using their loader when the hydraulic line broke resulting in a spill of 20L of hydraulic fluid on the ground. The technicians on site shut down the loader immediately and cleaned up the area. The technicians laid down absorbents pads and oil booms on the ground and placed a drip tray under the loader until the repairs can be done.</p> <p>All soil impacted by hydraulic fluid was containerized for off-site disposal.</p>	66°39'8.75"N, 61°25'8.95"W
28-Aug-2020 Spill # 20-293	Hydraulic Fluid	10L	<p>On 28-Aug-2020 during sealift, the Sterling dump truck was on route from the beach to the main site when the hydraulic oil tank broke off the truck. The hydraulic tank has a total volume of 113 L but wasn't full at the time. The hydraulic oil tank was about half full when it broke off the dump truck but only ~10 L spilled out of the tank onto the ground. An area of 1 m² was impacted by the spill. The technicians on site used shovels and transferred the contaminated soil into salvage drum. The spill has been cleaned up. The dump truck is now repaired.</p>	66°35'47.21"N, 61°36'57.80"W

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Date, NT-NU Spill #	Product	Quantity	Cause and follow-up action	On-site location
1-Sep-2020 Spill # 20-306	Jet-A1	5L	<p>On 27-Aug-2020, the technicians on site at DYE-M moved their retrograde waste from the hangar to the beach.</p> <p>On 01-Sep-2020, the technicians were inspecting the staging area at the beach site when they noticed a leaking 45 gallon drum containing Jet-A1. It was determined that the leak was of about 5 L of Jet-A1 which impacted an area of 1 m² of soil. The technicians on site used shovels to pick up the impacted soil which they then transferred into a salvage drum for off-site disposal. The spill has been remediated and closed.</p>	66°35'35.3"N 61°38'23.0"W

7.0 REVISIONS TO THE SPILL CONTINGENCY PLAN

The Spill Contingency Plan was updated on 6-Jan-2021. 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 2020.

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
RC	Raytheon Canada
TDGR	Transportation of Dangerous Goods Regulations

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ANNEX A. HAZARDOUS WASTE AND WASTE OIL DISPOSAL IN 2020

The 2020 Movement Document for TDG Regulated waste and NWS Manifests for non-TDG Regulated waste (as previously described in Table 3-1) are included in the following pages.

1. Movement Document 2539191-3
2. Movement Document 2539189-7
3. NWS Manifest 38685
4. NWS Manifest 40502
5. NWS Manifest 40508
6. NWS Manifest 40509
7. NWS Manifest 40510
8. NWS Manifest 40516
9. NWS Manifest 40517
10. NWS Manifest 40518
11. NWS Manifest 40520
12. NWS Manifest 42173
13. NWS Manifest 42174
14. NWS Manifest 42252
15. NWS Manifest 42253
16. NWS Manifest 42256
17. NWS Manifest 42382
18. NWS Manifest 42383
19. NWS Manifest 42384
20. NWS Manifest 42386

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MOVEMENT DOCUMENT / MANIFEST DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial transport and environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport.

2539189-7

Movement Document / Manifest Reference No.
N° de référence du document de mouvement/manifeste

MOVEMENT DOCUMENT / MANIFEST

DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial transport and environmental legislation.

Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport.

2539191-3

Movement Document / Manifest Reference No.
N° de référence du document de mouvement/manifeste

A Generator / consignor Producteur / expéditeur		Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial		B Carrier Transporteur		Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial		23		Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés													
Company name / Nom de l'entreprise <i>Dept of National Defense 90 RCL</i>		Mailing address / Adresse postale <i>22 Wing Bldg 109 Horneil Heightson P.O. - PO</i>		City / Ville <i>105 494-2011/2861</i>		Province <i>P.E.I.</i>		Postal code / Code postal		24		C Receiver / consignee Réceptionnaire / destinataire											
E-mail / Courrier électronique <i>Qamutik - verif@near.ca</i>		Mailing address / Adresse postale <i>NWS LSS Igloolik (Care Dyer) D-M</i>		City / Ville <i>Igloolik, NU</i>		Province <i>X0A - OHO</i>		Postal code / Code postal		25		Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial											
Shipping site address / Adresse du lieu de l'expédition <i>Wikigatuk Enviro. 7610-16-01-6348154-42</i>		Mailing address / Adresse postale <i>2630 Boul Industriel</i>		City / Ville <i>Chambly</i>		Province <i>QC</i>		Postal code / Code postal		26		Receiver / consignee information same as in Part A Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A											
Intended Receiver / consignee Réceptionnaire / destinataire prévu		2 Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial		Vehicle / Véhicule Trailer - Rail car No. 1 1 ^{re} remorque - wagon		Registration No. / N° d'immatriculation		Prov. 24		27		<input type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the box below / Non, remplir la case ci-dessous											
E-mail / Courrier électronique <i>jean-Philippe.Rivard</i>		Mailing address / Adresse postale <i>International Recycling</i>		Point of entry Point d'entrée <i>CARTIER</i>		Point of exit Point de sortie <i>Vancouver</i>		28		29		Company name / Nom de l'entreprise											
Receiving site address / Adresse du lieu de l'expédition <i>Chambly QC</i>		E-mail / Courrier électronique <i>()</i>		Year / Année <i>2020</i>		Month / Mois <i>09</i>		Day / Jour <i>14</i>		Signature <i>Jean-Philippe.Rivard</i>		Date received / Date de réception Year / Année Month / Mois Day / Jour											
Prov. code Code prov.		3 Shipping name Appellation réglementaire		4 Class / Classe ⁵ Sub. class(es) Classe(s) sub.		6 UN No. N°NU		7 Packing / risk gr. Gr. d'emballage/ de risque		8 Quantity shipped Quantité expédiée		9 Unit Lor/ou Kg Unités		10 Packaging/Contenant No. / N° Codes Int-ext.		11 Phys. state Etat phys.							
(i) waste solids containing Flammable Liquid, N.o.s. (Fuel, Aviation, Turbine Engines)		4.1 3175 11		288		KG 2 015		12		13		14		15		16		17		18		19	
(ii) waste Batteries, wet filled with Acid		8 2794 111		545		KG 1 075		Basel Annex VIII or OECD Code Annexe VIII de l'Algé ou Code OCDE		National code in country of / Code du pays		Customs code(s) Code(s) de douanes		If handling code "Other" (specify) Si code de manutention « autre » (spécifier)		30 Registration No./Provincial ID No. N° d'immatriculation/d'id provincial							
(iii)		24 Hour contact number - 613-996-6666		11		12		13		14		15		16		17		18		19		31	
(iv)		international use only		11		12		13		14		15		16		17		18		19		32	
Notice No. N° de notification		Notice Line No N° de ligne de la notification		Shipment Envoi		Of / De		D or R code Code É ou R		C code Code C		H code Code H		Y code Code Y		Export Exportation		Import Importation		Comments Commentaires		33	
(i)		(ii)		(iii)		(iv)		(v)		(vi)		(vii)		(viii)		(ix)		(x)		(xi)		34	
Generator / consignor certification: I certify that the information contained in Part A is correct and complete. Attestation du producteur / expéditeur: J'atteste que tous les renseignements à la partie A sont exacts et complets.		Name of authorized person (print) Nom de l'agent autorisé (caractère d'imprimerie)		Signature <i>Rick Ranson</i>		Tel. No. / N° de tél. <i>105 494-2011</i>		20		35		36		37		38		39		40			
Instructions for completion and distribution on reverse / Instructions pour compléter et distribuer au verso		Copy / Copie 1 (white / blanche)																					



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 31, 2018, 8:10 AM	Project ID:	Task ID:
			TCN-38685

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS			1	200 LBS

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
2	PALLET	750LBS	2002406	WASTE - OIL, 45 GAL	PALLET #4		ASSETS 341068,345524

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By:	Date
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Received By:	Date
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SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: BMCLAREN	Date: Sep 21, 2019, 9:00 AM	Project ID:	Task ID:
			TCN-40502

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS			1	454 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1		227 kg	2002357	WASTE - FUEL CONTAMINATED SOIL			Asset # 352865 - Waste-fuel contaminated soil
1		227 kg	2002357	WASTE - FUEL CONTAMINATED SOIL			Asset # 352866 - Waste-fuel contaminated soil

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By: Date:

Received By: Date:



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: BMCLAREN	Date: Sep 21, 2019, 10:21 AM	Project ID:	Task ID:
			TCN-40508

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	Sealift		1	454 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1	227 kg	2002357	WASTE - FUEL CONTAMINATED SOIL				Asset # 353063
1	227 kg	2002357	WASTE - FUEL CONTAMINATED SOIL				Asset # 353064

NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: BMCLAREN	Date: Sep 21, 2019, 10:39 AM	Project ID:	Task ID:
			TCN-40509

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	Sealift		1	454 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1	227 kg	2002357	WASTE - FUEL CONTAMINATED SOIL				Asset # 353065
1	227 kg	2002357	WASTE - FUEL CONTAMINATED SOIL				Asset # 353066

NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: BMCLAREN	Date: Sep 21, 2019, 10:45 AM	Project ID:	Task ID:
			TCN-40510

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	Sealift		1	454 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1	227 kg	2002357	WASTE - FUEL CONTAMINATED SOIL				Asset # 353068
1	227 kg	2002357	WASTE - FUEL CONTAMINATED SOIL				Asset # 353067

NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: BMCLAREN	Date: Sep 21, 2019, 12:26 PM	Project ID:	Task ID:
			TCN-40516

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	Sealift		1	908 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1		227 kg	2002358	WASTE - TANK BOTTOM WATER/ TAN			Asset # 349780
1		227 kg	2002406	WASTE - OIL, 45 GAL			Asset # 347423
1		227 kg	2002358	WASTE - TANK BOTTOM WATER/ TAN			Asset # 349779
1		227 kg	2002406	WASTE - OIL, 45 GAL			Asset # 347422

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: BMCLAREN	Date: Sep 21, 2019, 12:38 PM	Project ID:	Task ID:
			TCN-40517

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	Sealift		1	908 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1	227 kg	2002358	WASTE - TANK BOTTOM WATER/ TAN				Asset # 352446
1	227 kg	2002406	WASTE - OIL, 45 GAL				Asset # 352439
1	227 kg	2002358	WASTE - TANK BOTTOM WATER/ TAN				Asset # 352447
1	227 kg	3000731	WASTE - FUEL CONTAMINATED RAGS				Asset # 352454

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: BMCLAREN	Date: Sep 21, 2019, 12:49 PM	Project ID:	Task ID:
			TCN-40518

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	Sealift		1	908 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1		227 kg	2002343	WASTE - FUEL			Asset # 335179
1		227 kg	2002406	WASTE - OIL, 45 GAL			Asset # 347421
1		227 kg	2002350	WASTE - FUEL AND OIL MIXTURE (Asset #351941
1		227 kg	2002406	WASTE - OIL, 45 GAL			Asswt # 349691

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: BMCLAREN	Date: Sep 21, 2019, 1:31 PM	Project ID:	Task ID:
			TCN-40520

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	Sealift		1	908 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1	227 kg	2002406	WASTE - OIL, 45 GAL				Asset # 353049
1	227 kg	2009565	WASTE - GLYCOL CONTAMINATED RA				Asset #350075
1	227 kg	2002406	WASTE - OIL, 45 GAL				Asset # 317989
1	227 kg	2002344	WASTE - GLYCOL (DRUM)				Asset #353052

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: CIVANY	Date: Aug 19, 2020, 2:58 PM	Project ID:	Task ID:
			TCN-42173

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	48" x 24" x 43		1	478 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1			2002344	WASTE - GLYCOL (DRUM)			Asset 353310
1			2002406	WASTE - OIL, 45 GAL			Asset 354388

NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.

Received By: _____ Date _____

Received By: _____ Date _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: CIVANY	Date: Aug 19, 2020, 2:58 PM	Project ID:	Task ID:
			TCN-42174

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	dims: 48" x 48" x 44"		1	840 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4			2002406	WASTE - OIL, 45 GAL			asset 353307 / 346365 / 353328 / 355027

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By:	Date
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Received By:	Date
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SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: CIVANY	Date: Aug 25, 2020, 7:54 AM	Project ID:	Task ID:
			TCN-42252

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	29" x 57" x 46			288 KG

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1			2002406	WASTE - OIL, 45 GAL			Asset 354391
1			2002505	WASTE - OILY RAGS			Asset 355811

NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: CIVANY	Date: Aug 25, 2020, 7:59 AM	Project ID:	Task ID:
			TCN-42253

Ship To: QIKIQTALUK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
	: 29" x 57" x 46"			500 KG

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
2			4003111	WASTE - SEWAGE SLUDGE (NON-HAZ)			Asset 355606/355754

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: CIVANY	Date: Aug 25, 2020, 8:03 AM	Project ID:	Task ID:
			TCN-42256

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
	48" x 48" x 44"			700 KG

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
3			2002406	WASTE - OIL, 45 GAL			Asset 354385/ 353327 / 354384

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By:	Date
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Received By:	Date
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SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: CIVANY	Date: Sep 4, 2020, 7:20 AM	Project ID:	Task ID:
			TCN-42382

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	60 x 60 x 46	TM10546		475 KG

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4		475 KG	2008311	WASTE - ASBESTOS (DRUM)			assets 355610 / 355758 / 355757 / 355611

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: CIVANY	Date: Sep 4, 2020, 7:22 AM	Project ID:	Task ID:
			TCN-42383

Ship To: QIKIQTALUK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	60 x 30 x 46	TM10546	1	150 kg

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
2		150 kg	2008311	WASTE - ASBESTOS (DRUM)			assets 355847 / 355848

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: CIVANY	Date: Sep 4, 2020, 7:24 AM	Project ID:	Task ID:
			TCN-42384

Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	72 x 51 x 51	TM10546	1	250 KG

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1	250 KG	2008311	WASTE - ASBESTOS (DRUM)				Asset 355849

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: CIVANY	Date: Sep 4, 2020, 7:28 AM	Project ID:	Task ID:
			TCN-42386

Ship To: QIKIQTALUK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLEY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0
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Attention:	
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Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:
NEAS	30 x 30 x 46	TM 10546	1	150 KG

QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1	150 KG	2008311	WASTE - ASBESTOS (DRUM)				Asset 355612

NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.

Received By: _____ Date: _____

Received By: _____ Date: _____



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

UNCONTROLLED WHEN PRINTED



UNCLASSIFIED

SOW Ref: 16.F.5.d

ANNEX C. ANALYSIS OF DISCHARGED SEWAGE EFFLUENT

The sewage outfalls were not discharged in 2020 and therefore sampling was not required. This annex has been left blank.

UNCONTROLLED WHEN PRINTED



UNCLASSIFIED

 **Raytheon**
Canada

SOW Ref: 16.F.5.d

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 2020

Berm	Location on-site	Discharge Latitude ¹	Discharge Longitude	Date
DYE W20A	Summit	66°40'00.13"N	61°21'25.76"W	29-Jun-2020
DYE W22K, W22J, W22I &W20B	Summit	66°39'53.59"N	61°21'23.78"W	29-Jun-2020

¹ Final discharge point of bermed fuel storage facility

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UNCLASSIFIED

 **Raytheon**
Canada

SOW Ref: 16.F.5.d

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 is included in pages which follow.

The following documents are enclosed:

1. Hydrocarbon Test Strip Photo Log

² Effluent from bermed fuel storage facilities.

UNCONTROLLED WHEN PRINTED

SOW Ref: 16.F.5.d



Photo E-1: Hydrocarbon test strips used in berm of tank W20A (29-Jun-2020)



Photo E-2: Hydrocarbon test strips used in berm of tank W22K, W22J, W22I & W20B (29-Jun-2020)

UNCONTROLLED WHEN PRINTED