



2015 ANNUAL NUNAVUT WATER BOARD REPORT FOR FOX-M

FOR THE

North Warning System

Contract # W8485-100224/001/NX
CDRL 16.F.5.d

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Prepared for

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EXECUTIVE SUMMARY

This 2015 Annual Report for the Nunavut Water Board (NWB) has been prepared by Raytheon Canada Limited (RCL) for the Department of National Defence in order to meet the requirements of the licence issued 10 September 2009 3BC-FOH0919 – Type “B”, Part B. General Conditions, paragraph 1. This report covers the period from 01 January to 31 December 2015.

RCL is the Operation and Maintenance (O&M) Contractor for the North Warning System (NWS), including FOX-M. FOX-M is the attended (manned) NWS radar site located at Hall Beach, Nunavut. The site population increases due to project activity at FOX-M or at other radar sites that FOX-M supports.

The water usage for FOX-M in 2015 was 3,142.2 cubic meters, which is an average of 8.6 cubic meters per day. There is no water usage limit in the licence for FOX-M because water is drawn from an artificial (man-made) reservoir and not from a natural source. The quantity drawn is greater than what is actually used on-site because the water is recirculated to prevent the water line from freezing.

Sewage at FOX-M was processed by the tertiary wastewater treatment system. Some of the treated effluent is recycled as on site urinal/toilet flush water. The discharged treated effluent is of potable water quality. A sample of the treated effluent was sent for laboratory analysis each month in 2015.

Samples of the water contained in the berms of fuel storage facilities was sent for laboratory analysis and confirmed to be within effluent quality limits of the NWB licence 3BC-FOH0919, Part D, item 10 before the water was pumped out of the berms.

Hazardous waste was removed from FOX-M for disposal outside of Nunavut in 2015. The hazardous waste was shipped to Safety Kleen, 2730 boulevard Industriel, Chamby, QC, J3L 4V2. The hazardous waste consisted of 250 drums of assorted waste (oil, fuel, paint, etc.), 3 crates of batteries, and 1 crate of paint.

Non-hazardous domestic solid waste was disposed of at the local landfill through a contract with the Hamlet of Hall Beach. RCL has documented authorization from the community for receiving the waste.

There were no outdoor spills at FOX-M in 2015.

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EXECUTIVE SUMMARY IN INUKTITUT

フジテクノロジーズ株式会社 FOX-M-15c 2015

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1.0 INTRODUCTION

This 2015 Annual Report for the Nunavut Water Board (NWB) has been prepared by Raytheon Canada Limited (RCL) for the Department of National Defence in order to meet the requirements of the licence issued 10 September 2009 3BC-FOH0919 – Type “B”, Part B. General Conditions, paragraph 1. This report covers the period of 01 January to 31 December 2015.

RCL is the Operation and Maintenance (O&M) Contractor for the North Warning System (NWS), including FOX-M. FOX-M is an attended (manned) North Warning System radar site located at Hall Beach, Nunavut. The site population increases due to project activity at FOX-M or at other radar sites that FOX-M supports.

1.1 REPORT DETAILS

Licensee: Department of National Defence, Government of Canada
Licence: 3BC-FOH0919 – Type “B”
Location: FOX-M North Warning System Site,
Hall Beach, Qikiqtani Region, Nunavut
Report prepared by: Raytheon Canada Limited, 17-Mar-2016
Time Period Covered: 01 January to 31 December 2015

2.0 WATER USE

The water usage at FOX-M in 2015 was 3,142.2 cubic meters, which is an average of 8.6 cubic meters per day. See Table 2-1 for raw water usage.

There is no water usage limit in the licence for FOX-M because water is drawn from an artificial (man-made) reservoir and not from a natural source. The quantity drawn is greater than what is actually used on-site because the water is recirculated to prevent the water line from freezing.

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Table 2-1 Monthly Raw Water Usage at FOX-M in 2015

Month	Raw water usage in cubic metres (m ³)
January	108
February	92.8
March	164.5
April	145
May	381.9
June	349.1
July	253.0
August	137.0
September	287.8
October	417.5
November	397.4
December	408.2
TOTAL	3142.2

3.0 TREATED SEWAGE DISCHARGE

At FOX-M, the sewage and grey water are both processed through a *Cycle-let*®, advanced tertiary wastewater treatment system. The system was maintained by RCL in 2015. Some of the treated water is recycled as urinal/toilet flush water; the remainder is discharged at the designated outfall and is of potable water quality. See Table 3-1, for the volume of sewage and grey water treated by the *Cycle-let*® system.

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Table 3-1 Monthly and Annual Volume of Sewage and Grey Water Treated at FOX-M in 2015

Month	Volume of sewage and greywater treated then discharged or recycled in cubic metres (m ³)
January	70.6
February	63.7
March	70.6
April	68.3
May	70.6
June	68.3
July	70.6
August	70.6
September	94.8
October	161.0
November	124.7
December	99.6
Total	1,033.3

4.0 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 Safety Kleen, 2730 boulevard Industriel, Chamby, QC, J3L 4V2. The waste receiver number for Clean Harbors is 27011824-1.

See Table 4-1 for the list of items sent for disposal.

See **Annex A** for the shipping documents: the completed movement documents for waste regulated under the Transportation of Dangerous Goods Regulations (TDGR) and NWS Manifests for non-regulated waste.

Table 4-1 Hazardous Waste and Waste Oil Sent for Disposal from FOX-M in 2015

Site	Description, TDG shipping name	Quantity	Movement Document or Manifest #
FOX-M	Waste Activated Carbon Filter Not TDG Regulated	13 Drums	34558, 34559, 34563, 34588
FOX-M	Waste Aerosols	1 Drum	2581504-4
FOX-M	Waste Batteries, Wet, Filled With Acid	2 Crates	2581502-8
FOX-M	Waste Batteries, Wet, Non-Spillable	1 Crate	2581502-8
FOX-M	Waste Empty Drum with Oil Residues Not TDG Regulated	1 Drum	34577

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Site	Description, TDG shipping name	Quantity	Movement Document or Manifest #
FOX-M	Waste Glycol Filters, Glycol Soaked Rags, and Glycol Soaked Absorbent Not TDG Regulated	3 Drums	34513, 34564, 34560
FOX-M	Waste Glycol Not TDG Regulated	37 Drums	34480, 34481, 34505, 34512, 34550, 34551, 34569, 34574, 34576, 34577, 34578, 34586, 34592
FOX-M	Waste Jet A1 Fuel and Water Mixture Waste Fuel, Aviation, Turbine Engine Mixture	28 Drums	2581501-0
FOX-M	Waste Jet A1 Fuel Filters Waste Solids Containing Flammable Liquid, N.O.S. (Fuel, Aviation, Turbine Engine)	6 Drums	2581501-0
FOX-M	Waste Jet A1 Fuel Impacted Soil Waste Solids Containing Flammable Liquid, N.O.S. (Fuel, Aviation, Turbine Engine)	18 Drums	2581501-0
FOX-M	Waste Jet A1 Fuel Soaked Absorbents / Rags Waste Solids Containing Flammable Liquid, N.O.S. (Fuel, Aviation, Turbine Engine)	21 Drums	2581501-0, 2581503-6
FOX-M	Waste Jet A1 Fuel Waste Fuel, Aviation, Turbine Engine	18 Drums	2581501-0
FOX-M	Waste Lithium Metal Batteries	1 Drum	2581502-8
FOX-M	Waste Oil and Water Mixture Not TDG Regulated	1 Drum	34592
FOX-M	Waste Oil Filters Not TDG Regulated	1 Drum	34509
FOX-M	Waste Oil Not TDG Regulated	87 Drums	34513, 34548, 34473, 34474, 34476, 34477, 34478, 34479, 34482, 34483, 34484, 34504, 34506, 34507, 34511, 34512, 34514, 34516, 34547, 34550, 34551, 34554, 34561, 34562, 34567, 34569

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Site	Description, TDG shipping name	Quantity	Movement Document or Manifest #
FOX-M	Waste Oily Rags Waste Solids Containing Flammable Liquid, N.O.S. (Fuel, Aviation, Turbine Engine)	9 Drums	2581504-4, 2581501-0
FOX-M	Waste Paint	1 Crate	2581503-6
FOX-M	Waste Paint Related Material	3 Drums	2581503-6
FOX-M	Waste Petroleum Distillates N.O.S.	2 Drums	2581504-4, 2581501-0

5.0 NON-HAZARDOUS SOLID WASTE DISPOSAL

Non-hazardous domestic solid waste was disposed of at the local landfill through a contract with the Hamlet of Hall Beach. RCL has documented authorization from the community for receiving the waste. See Table 5-1 for the quantity of waste generated.

Table 5-1 Non-hazardous Domestic Solid Waste Sent for Disposal from FOX-M in 2015

Month	Waste Generated (kg)
January	2,434
February	2,883
March	2,030
April	2,939
May	2,624
June	2,463
July	2,582
August	1,739
September	1,306
October	1,644
November	1,606
December	1,241
Total	25,490

6.0 MONITORING PROGRAM

See **Annex B** for the location of the treated sewage effluent outfall, FOH-2, with co-ordinates.

See **Annex C** for analysis of treated sewage effluent.

See **Annex D** for the list of bermed fuel storage facilities, FOH-3, with co-ordinates.

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See **Annex E** for analysis of berm water (water contained in the berms of fuel storage facilities). The results were confirmed to be within effluent quality limits of the NWB licence 3BC-FOH0919, Part D, item 10 before the water was pumped out of the berms.

7.0 SPILLS (UNAUTHORIZED DISCHARGES)

Table 7-1 Outdoor Spills Reported at FOX-M in 2015

Date, Spill #	Product	Quantity	Cause and follow-up action	Location at FOX-M
There were no outdoor spills at FOX-M 2015.				

8.0 REVISIONS TO THE SPILL CONTINGENCY PLAN

The Spill Contingency Plan was successfully implemented. There were no revisions to the Spill Contingency Plan in 2015.

9.0 PROGRESSIVE RECLAMATION WORK UNDERTAKEN

None undertaken.

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10.0 ACRONYMS

Acronym	Definition
CC&C	Care, Custody, and Control
DEG	Diesel Engine Generator
DND	Department of National Defence
NWB	Nunavut Water Board
NWS	North Warning System
NWSO	North Warning System Office
O&M	Operations and Maintenance
PCB	Polychlorinated Biphenyl
RCL	Raytheon Canada Limited
TDGR	Transportation of Dangerous Goods Regulations

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MOVEMENT DOCUMENT / MANIFEST
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This document is equivalent to all Federal
and provincial transport and environmental legislation.
Ce document est équivalent à toutes les lois fédérales et provinciales
relatives au transport et à l'environnement.

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A Generator / consignor Producteur / expéditeur		Registration No. / Provincial ID No. N° d'immatriculation - n° provincial	B Carrier / Transporteur Registration No. / Provincial ID No. N° d'immatriculation - n° provincial		20															
Company name / Nom de l'entreprise DND G/RCL		Company name / Nom de l'entreprise MUNAVAVUT EASTERN ARCTIC SH. DRIVING	Mailing address / Adresse postale City / Ville Province Postcode / Code postal 22 Wing Bldg 109 Hornell Heights ON P0H 1P0		21															
Email / Courriel électronique ()		E-mail / Courriel électronique 100 Ruee Drury, Montreal, Qc H2C 3R5	Tel. No. / N° de tél. 514-225-6329		22															
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Intended Receiver / consignee Récipient / destinataire prévu Safety - Kleen		27011824-1	25	Center Certification : I certify that I have checked waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. Le certificat indique que j'ai vérifié les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au récepteur / destinataire, tel qu'il figure à la partie A et que les renseignements indiqués à la partie B sont exacts et complets.		26														
Mailing address / Adresse postale City / Ville Province Postcode / Code postal Clean Harbors 6785 route 132 Bégin 1B6		Name of authorized person (print) Nom de l'agent autorisé (imprimer) : Claire FORGREN	27	Tel. No. / N° de tél. ()		28														
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II		Waste Paint-Related Material *	3 1263	UN UN	400 L	1 01	L													
III		Waste solids containing Flammability Liquid No. & Fuel Aviation Turbine	4.1 3175	UN II	100 KG	1 01	S													
IV		Waste Paint Related Material *	3 1263	UN UN	231 L	1 07	L													
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International use only																	
24-hour Number: 705-494-2011 ext 3400 use in case of dangerous goods emergency																	
Comments / Avertissements supplémentaires : I certify that the information contained in Part A is correct and complete. I acknowledge that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/printed, and are in full respects in proper condition for transport according to applicable international and national governmental regulations.																	
Attention to the consignee: Please return to me the shipping name as stated on the dangerous goods document or to me if not contained above, any mark, despots, marks or placards affixed to it and any label affixed for identification purposes.																	
Signature: CRAG IVAN																	
Name of authorized person (print) MARGOTIE STRANO																	
Tel. No. / N° de tel. 705-494-2011 ext. 2861																	
Instructions on reverse Instructions au verso																	
Copy / Copie 1 (white) / blanc																	

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 20, 2015 2:43 PM	TCN-34473					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA	From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0					
Attention:	Attention:						
Carrier: NEAS	Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 785 KG			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4	PALLET	785 KG	2002406	WASTE - OIL (45 GALLON DRUM)	1.24M3	Assets 322629,325587,326116,326115	
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: MSTRANO	Date: Aug 20, 2015 4:27 PM	TCN-34476					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA	From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0					
Attention:	Attention:						
Carrier: NEAS	Routing: 2 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 280 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1	Pallet	280 kg	2002406	WASTE - OIL (45 GALLON DRUM)	1.36M3	Assets 334556	
1	pallet	2002343		WASTE - FUEL		Asset 331628	
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.					Received By:	Date	
					Received By:	Date	

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H6

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 20, 2015 4:30 PM	TCN-34477		
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987			Priority 0
Attention:		Attention:			
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 854 kg
QTY Order	Type	Line Weight	Item Description	WO or PO	B/Code or S/N
4	Pallet	854 kg	2002406 WASTE - OIL (45 GALLON DRUM)	Assets 329831,329984,329982,329983	
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 2H6

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 20, 2015 4:32 PM	TCN-34478		
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987			Priority 0
Attention:		Attention:			
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 854 kg
QTY Order	Type	Line Weight	Item Description	WO or PO	B/Code or S/N
4	Pallet	854 kg	2002406 WASTE - OIL (45 GALLON DRUM)	Assets 329833,328083,329834,329835	
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.			Received By:	Date	
			Received By:	Date	

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 20, 2015 4:34 PM	TCN-34479	
Ship To: CLEAN HARBORS CANADA INC 2730 BOULEVARD INDUSTRIEL CHAMBLEY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0	
Attention:		Attention:		
Carrier: NEAS	Routing: 4 drums on pallet	Waybill #:	Total Pcs: 1	Total Weight: 838 kg
QTY Order	Type Line Weight	Item Description	WO or PO B/Code or S/N	Remarks
4	838 kg	2002406 WASTE - OIL (45 GALLON DRUM)		Assets 323805,325583,324196,327268
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.				Received By: Received By:



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 20, 2015 4:36 PM	TCN-34480		
Ship To:	CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLEY, QC, J3L 4V2 CA		From:	LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	
			Priority 0		
Attention:		Attention:			
Carrier:	Routing:	Waybill #:	Total Pcs.	Total Weight:	
NEAS	4 drums on pallet		1	813 kg	
QTY Order	Type	Line Weight	Item Description	WO or PO B/Code or S/N	Remarks
4	Pallet	813 kg	2002344 WASTE - GLYCOL (DRUM)	Assets: 329994,329995,329997,329998	
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.					
Received By:				Date	
Received By:				Date	

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 20, 2015 4:38 PM	TCN-34481					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA	From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0					
Attention:	Attention:						
Carrier: NEAS	Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 828 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	Bi/Code or S/N	Remarks
4	Pallet	828 kg	2002344	WASTE - GLYCOL (DRUM)	2.75M3	Assets 329993,330000,329999,329998	
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: MSTRANO	Date: Aug 20, 2015 4:40 PM	TCN-34482					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA	From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0					
Attention:	Attention:						
Carrier: NEAS	Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 831 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	Bi/Code or S/N	Remarks
4	Pallet	831 kg	2002406	WASTE - OIL (45 GALLON DRUM)	2.75M3	Assets 331022,330911,328129,334548	
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.				Received By:	Date		
				Received By:	Date		

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 20, 2015 4:42 PM	TCN-34483		
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority	0
Attention:		Attention:			
Carrier: NEAS		Routing: 4 drums on pallet		Waybill #:	Total Pcs.: 1
QTY Order		Type Line Weight	Item Description	WO or PO	B/Code or S/N
4		Pallet 857 kg	2002406 WASTE - OIL (45 GALLON DRUM)	2.69 M3	Assets 334558,327075,303621,171471
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: MSTRANO		Date: Aug 20, 2015 4:44 PM	TCN-34484		
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority	0
Attention:		Attention:			
Carrier: NEAS		Routing: 4 drums on pallet		Waybill #:	Total Pcs.: 1
QTY Order		Type Line Weight	Item Description	WO or PO	B/Code or S/N
4		Pallet 857 kg	2002406 WASTE - OIL (45 GALLON DRUM)	2.75M3	Assets 326232,329900,330912,151658
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.					
Received By:			Date:		
Received By:			Date:		

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 25, 2015 10:01 AM	TCN-34504				
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLEY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987			Priority 0		
Attention:		Attention:					
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 766 kg		
QTY Order	Type	Line Weight	Item	Description	WO or PO 1.24M3	B/Code or S/N	Remarks
4	Pallet	766 kg	2002406	WASTE - OIL (45 GALLON DRUM)			Assets 320985, 151657,334554,334555
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: MSTRANO		Date: Aug 25, 2015 10:03 AM	TCN-34505				
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLEY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987			Priority 0		
Attention:		Attention:					
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 1017 kg		
QTY Order	Type	Line Weight	Item	Description	WO or PO 1.24M3	B/Code or S/N	Remarks
4	pallet	1017 kg	2002344	WASTE - GLYCOL (DRUM)			Assets 328191,328192,328193,328194
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.				Received By:	Date		
				Received By:	Date		

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 25, 2015 10:06 AM	TCN-34506				
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0		
Attention:		Attention:					
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 851 kg		
QTY Order	Type	Line Weight	Item	Description	WO or PO 1.24M3	Bi/Code or S/N	Remarks
4	Pallet	851 kg	2002406	WASTE - OIL (45 GALLON DRUM)		Assets 331658,331766,329893,329892	
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: MSTRANO		Date: Aug 25, 2015 10:08 AM	TCN-34507				
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0		
Attention:		Attention:					
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 796 kg		
QTY Order	Type	Line Weight	Item	Description	WO or PO 1.24M3	Bi/Code or S/N	Remarks
4	Pallet	796 kg	2002406	WASTE - OIL (45 GALLON DRUM)		Assets 331626,331627,331724,331625	
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.					Received By:	Date	
					Received By:	Date	

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H6

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 25, 2015 10:12 AM	TCN-34509			
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLEY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0	
Attention:		Attention:				
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs.: 1	Total Weight: 519 kg	
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N	Remarks
2	Pallet	519 kg	2002356	WASTE - OIL FILTERS (DRUM)	Assets 315005,303211	
2	Pallet	519 kg	2002505	WASTE - OILY RAGS	Assets 329636,331285	
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 2H6

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 25, 2015 10:20 AM	TCN-34511			
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLEY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0	
Attention:		Attention:				
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs.: 1	Total Weight: 788 kg	
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N	Remarks
4	pallet	788 kg	2002406	WASTE - OIL (45 GALLON DRUM)	1.24M3	Assets: 328610,329830,329832,334557
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.					Received By:	Date
					Received By:	Date

UNCONTROLLED WHEN PRINTED



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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 25, 2015 10:22 AM	TCN-34512		
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987			Priority 0
Attention:		Attention:			
Carrier: NEAS		Routing: 4 drums on pallet			Waybill #: Total Pcs.: Total Weight: 1 1 813 kg
QTY Order	Type	Line Weight	Item	Description	WO or PO: B/Code or S/N Remarks
2	Pallet	813 kg	2002406	WASTE - OIL (45 GALLON DRUM)	1.24M3 Assets 331020,331021
2	Pallet	2002344		WASTE - GLYCOL (DRUM)	Assets 323001,330849
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: MSTRANO		Date: Aug 25, 2015 10:29 AM	TCN-34513		
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987			Priority 0
Attention:		Attention:			
Carrier: NEAS		Routing: 4 drums on pallet			Waybill #: Total Pcs.: Total Weight: 1 1 571 kg
QTY Order	Type	Line Weight	Item	Description	WO or PO: B/Code or S/N Remarks
1	Pallet	2002356		WASTE - OIL FILTERS (DRUM)	Asset 319974
1	Pallet	2009565		WASTE - GLYCOL CONTAMINATED RA	Asset 326610
2	Pallet	2002505		WASTE - OILY RAGS	Assets 322589,326609
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.					Received By: Date: Received By: Date:

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 25, 2015 10:35 AM	TCN-34514			
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0		
Attention:		Attention:				
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 571 kg	
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N	Remarks
4	Pallet	571 kg	2002406	WASTE - OIL (45 GALLON DRUM)	2.57M3	Assets 325083,171470,323441,325082
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: MSTRANO		Date: Aug 25, 2015 10:42 AM	TCN-34516			
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0		
Attention:		Attention:				
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 750 kg	
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N	Remarks
4	Pallet	750 kg	2002406	WASTE - OIL (45 GALLON DRUM)	2.69M3	Assets 326120,334559,334547,328458
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.				Received By:	Date	
				Received By:	Date	

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 27, 2015 6:19 PM	TCN-34547		
Ship To: CLEAN HARBORS CANADA INC 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0	
Attention:		Attention:			
Carrier: NEAS		Routing: 4 drums on pallet		Waybill #:	Total Pcs. 1
QTY Order	Type Line Weight	Item Description	WO or PO 2.75M3	B/Code or S/N	Remarks Assets 330756,326121,334550,334549
4 Pallet 832 kg 2002406 WASTE - OIL (45 GALLON DRUM)			Received By: Date		
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.			Received By: Date		



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 27, 2015 6:30 PM	TCN-34548		
Ship To: CLEAN HARBORS CANADA INC 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0	
Attention:		Attention:			
Carrier: NEAS		Routing: 4 drums on pallet		Waybill #:	Total Pcs. 1
QTY Order	Type Line Weight	Item Description	WO or PO	B/Code or S/N	Remarks Assets 328079,325586,328078
3	pallet	496 kg 2002356 WASTE - OIL FILTERS (DRUM)	Asset 308093		
1		2003635 WASTE - FUEL FILTERS (DRUM)	Asset 308093		
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.			Received By: Date		
			Received By: Date		

UNCONTROLLED WHEN PRINTED



UNCLASSIFIED

SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 27, 2015 6:36 PM	TCN-34550			
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987			Priority 0	
Attention:		Attention:				
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 1003 kg	
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N	Remarks
3	pallet	1003 kg	2002344	WASTE - GLYCOL (DRUM)	2.69M3	Assets 331630,331631,331633
1			2002406	WASTE - OIL (45 GALLON DRUM)		Asset 334545
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: MSTRANO		Date: Aug 27, 2015 6:39 PM	TCN-34551			
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987			Priority 0	
Attention:		Attention:				
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 832 kg	
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N	Remarks
2	pallet	832 kg	2002406	WASTE - OIL (45 GALLON DRUM)		Assets 334552,334553
1			2002344	WASTE - GLYCOL (DRUM)		Asset 331632
1			3001574	WASTE - CLEANER / DEGREASER, 6		Asset 334580
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.				Received By:	Date	
				Received By:	Date	

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 27, 2015 6:55 PM	TCN-34554			
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0	
Attention:		Attention:				
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 669 kg	
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N	Remarks
4	pallet	669 kg	2002406	WASTE - OIL (45 GALLON DRUM)	2.69M3	Assets 326007,325106,334551,334544
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: MSTRANO		Date: Aug 27, 2015 7:09 PM	TCN-34558			
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0	
Attention:		Attention:				
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 1008 kg	
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N	Remarks
0	pallet	1008 kg	2002351	WASTE - ACTIVATED CARBON FILTE	2.62M3	Assets 328869,334562,334563,334564
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.				Received By:	Date	
				Received By:	Date	

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SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 27, 2015 7:12 PM	TCN-34559				
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0		
Attention:		Attention:					
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 739 kg		
QTY Order	Type	Line Weight	Item	Description	WO or PO 2.68M3	B/Code or S/N	Remarks
0	pallet	739 kg	2002351	WASTE - ACTIVATED CARBON FILTE			Assets 328870,331019,331018,331017
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: MSTRANO		Date: Aug 27, 2015 7:14 PM	TCN-34560				
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0		
Attention:		Attention:					
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 495 kg		
QTY Order	Type	Line Weight	Item	Description	WO or PO 2.68M3	B/Code or S/N	Remarks
1	pallet	495 kg	3005411	WASTE - GLYCOL SOAKED ABSORBEN			Asset 328081
2		2002699		WASTE - POL SOAKED ABSORBENT			Assets 328909,328908
1		2003635		WASTE - FUEL FILTERS (DRUM)			Asset 309091
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.				Received By:	Date		
				Received By:	Date		

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 27, 2015 7:18 PM	TCN-34561				
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0		
Attention:		Attention:					
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 853kg		
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4	pallet	853 kg	2002406	WASTE - OIL (45 GALLON DRUM)	2.81M3	Assets 331426,331428,331427,334546	
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: MSTRANO		Date: Aug 27, 2015 7:24 PM	TCN-34562				
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA			From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987		Priority 0		
Attention:		Attention:					
Carrier: NEAS		Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 853kg		
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4	pallet	721 kg	2002406	WASTE - OIL (45 GALLON DRUM)	2.81 M3	Assets 334560,334561,171570,326289	
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.					Received By:	Date	
					Received By:	Date	

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filed By: MSTRANO	Date: Aug 27, 2015 7:27 PM	TCN-34563					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA	From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0					
Attention:	Attention:						
Carrier: NEAS	Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 884 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4		884 kg	2002351	WASTE - ACTIVATED CARBON FILTE	2.80M3	Assets 328868,334565,334566,334567	
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

Filed By: MSTRANO	Date: Aug 27, 2015 7:28 PM	TCN-34564					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA	From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0					
Attention:	Attention:						
Carrier: NEAS	Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 570 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1		570 kg	2002355	WASTE - PAINT FLAMMABLE (DRUM)	2.80M3	Asset 326256	
1			2003634	WASTE - GLYCOL FILTERS (DRUM)		Asset 151103	
1			2002699	WASTE - POL SOAKED ABSORBENT		Asset 329592	
1			2007951	WASTE - PAINT RELATED MATERIAL		Asset 327151	
NOTE: All claims related to this shipment have to be filed with Raytheon within 45 hours of receipt.					Received By:	Date	
					Received By:	Date	

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SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 27, 2015 7:44 PM	TCN-34567					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA	From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0					
Attention:	Attention:						
Carrier: NEAS	Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1				
Total Weight: 849 kg							
QTY Order	Type	Line Weight	Item	Description	WO or PO 2.89M3	B/Code or S/N	Remarks Assets 329899,334541,334540,334539
4	pallet	849 kg	2002406	WASTE - OIL (45 GALLON DRUM)			
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: MSTRANO	Date: Aug 27, 2015 7:50 PM	TCN-34569					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLAY, QC, J3L 4V2 CA	From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0					
Attention:	Attention:						
Carrier: NEAS	Routing: 2 drums on pallet	Waybill #:	Total Pcs. 1				
Total Weight: 510 kg							
QTY Order	Type	Line Weight	Item	Description	WO or PO 1.30M3	B/Code or S/N	Remarks Asset 331657
1	pallet	510 kg	2002408	WASTE - OIL (45 GALLON DRUM)			
1	pallet	2002344		WASTE - GLYCOL (DRUM)			Asset 334542
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.				Received By:	Date		
				Received By:	Date		

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SHIPPING MANIFEST

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NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 28, 2015 11:41 AM	TCN-34574		
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0	
Attention:		Attention:		
Carrier: NEAS	Routing: 4 EMPTY DRUMS ON PALLET	Waybill #:	Total Pos. 1	Total Weight: 91 KG
QTY Order	Type Line Weight	Item Description	WO or PO B/Code or S/N	Remarks
4	PALLET 91 KG	2002344 WASTE - GLYCOL (DRUM)	48"X48"X41"	Assets 334632,334633,334634,334635- residue only
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: MSTRANO	Date: Aug 28, 2015 11:49 AM	TCN-34576		
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0	
Attention:		Attention:		
Carrier: NEAS	Routing: 4 empty drums on pallet	Waybill #:	Total Pos. 1	Total Weight: 90 kg
QTY Order	Type Line Weight	Item Description	WO or PO B/Code or S/N	Remarks
4	pallet	90 kg	2002344 WASTE - GLYCOL (DRUM)	48"X48"X44" Assets 334640,334641,334642,334643- residue only
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.			Received By:	Date
			Received By:	Date

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SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 28, 2015 11:52 AM	TCN-34577					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0				
Attention:		Attention:					
Carrier: NEAS	Routing: 4 empty drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 90 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1		3000929	WASTE - OIL, EMPTY DRUM WITH R				Asset 334647
3	pallet	80 kg	2002344	WASTE - GLYCOL (DRUM)	48"X48"X44"		Assets 334644,334645,334646
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: MSTRANO	Date: Aug 28, 2015 11:54 AM	TCN-34578					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0				
Attention:		Attention:					
Carrier: NEAS	Routing: 2 empty drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 90 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
2		90 kg	2002344	WASTE - GLYCOL (DRUM)	24"X48"X41"		Assets 334648,334649 residue only
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.					Received By:	Date	
					Received By:	Date	

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SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO		Date: Aug 28, 2015 4:56 PM	TCN-34586		
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987			Priority 0
Attention:		Attention:			
Carrier: NEAS		Routing: 4 EMPTY drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 90 KG
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N Remarks
4	Pallet	90 kg	2002344	WASTE - GLYCOL (DRUM)	Assets 334657,334658,334659,334660- residue only

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: MSTRANO		Date: Aug 28, 2015 4:59 PM	TCN-34588		
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA		From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987			Priority 0
Attention:		Attention:			
Carrier: NEAS		Routing: 1 drum on pallet	Waybill #:	Total Pcs. 1	Total Weight: 225 kg
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N Remarks
1	Pallet	225 kg	2002351	WASTE - ACTIVATED CARBON FILTE	Asset 334662

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

Received By:	Date
Received By:	Date

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SHIPPING MANIFEST

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

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 28, 2015 5:27 PM	TCN-34592					
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA	From: LSS-F/FOX-M, HALL BEACH, DND Storeroom Raytheon Canada Limited, LSS Hall Beach: P.O. Box 46 Hall Beach, NU, X0A 0K0 867-928-8987	Priority 0					
Attention:	Attention:						
Carrier: NEAS	Routing: 2 drums on pallet	Waybill #: Total Pcs. Total Weight: 1 230 kg					
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1	Pallet		2002344	WASTE - GLYCOL (DRUM)			Asset 326267
1	Pallet		3004927	WASTE - OIL AND WATER MIXTURE			Asset 334663

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

Received By:	Date
Received By:	Date

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ANNEX B - FOX-M - TREATED SEWAGE EFFLUENT OUTFALL (FOH-2) LOCATION WITH CO-ORDINATES



Coordinates of sewage treatment outfall: 63° 45'39.50"N, 81°13'28.40"W.

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ANNEX C - FOX-M - ANALYSIS OF TREATED SEWAGE EFFLUENT

Table C-1 Summary of Analysis of Treated Sewage Effluent at FOX-M in 2015

Date	pH	Parameter			
		Oil and Grease (Present - P / Absent - A)	Biological Oxygen Demand (mg/L)	Total Suspended Solids (mg/L)	Faecal Coliforms ¹
Maximum Concentration	6.0 to 9.0 (pH units)	No visible sheen	120 mg/L	180 mg/L	10,000 CFU/100 mL
1-Feb-15 ²	8.05	A	39	<2	Not available ³
3-Mar-15 ⁴	7.81	A	3	<2	0
25-Mar-15	7.59	A	49	<2	0
16-Apr-15	7.32	A	9	<2	244.7
18-May-15	7.37	A	<1	<1	0
16-Jun-15	6.06	A	<6	<1	3.3
8-Jul-15	6.61	A	<2	3	0.3
31-Aug-15	No sample taken. ⁵				0
23-Sep-15	6.59	A	<1	<2	14
14-Oct-15	5.66 ⁶	A	1	<3	20
10-Nov-15	6.09	A	<1	<1	10.67
14-Dec-15	7.11	A	<1	3	0

¹ Average of the Cyclet 1A, Cyclet 1B, and Cyclet 1C.

² The sample for January 2015 was taken on 01Feb2015.

³ These results were not available. The samples were frozen when they arrived at the laboratory, so they could not be analyzed for faecal coliforms.

⁴ The sample for February 2015 was taken on 03Mar2015.

⁵ There was a miscommunication on-site and the Oil and Grease, Biological Oxygen Demand, and Total Suspended Solids sample was not taken. This requirement has been clarified.

⁶ The pH was out of the acceptable range. The INAC Water Licence Inspector was notified.

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January 2015 – Page 1 of 1.

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Canadian Base Operators
400 Cooper St., Suite 3000
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
Invoice to: Canadian Base Operators

Report Number: 1501916
Date Submitted: 2015-02-06
Date Reported: 2015-02-17
Project: 140340
COC #: 177799

Group	Analyte	MRL	Units	Guideline
General Chemistry	pH	1.00		8.05
	Total Suspended Solids	2	mg/L	<2
Nutrients	BOD ₅	1	mg/L	30
Oil & Grease	Oil & Grease - Mineral	1	mg/L	<1
	Oil & Grease - Non-mineral	1	mg/L	<1
Visible Sheen	Oil & Grease - Total	1	mg/L	<1
	Visible Sheen	PIA		A

Guideline =

" = Guideline Exceedence

All analysis completed in Ottawa, Ontario unless otherwise indicated by " which indicates analysis was completed in Mississauga, Ontario.
Results relate only to the parameters listed on the samples submitted.
Methods, references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

146 Colombe Rd, Unit 8, Ottawa, ON K2E 7Y1

Page 2 of 3

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February 2015 – Page 1 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Raytheon Canada Limited Ottawa
400 Cooper St., Suite 3000
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1503959
Date Submitted: 2015-03-16
Date Reported: 2015-03-23
Project: 140340
COC #: 177760

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00			1164174 Sewage
	Total Suspended Solids	2	mg/L	<2	2015-03-03 Fox-Main Cyclelet
Nutrients	BOD5	1	mg/L	3	
	Oil & Grease - Mineral	1	mg/L	<1	
	Oil & Grease - Non-mineral	1	mg/L	<1	
Oil & Grease	Oil & Grease - Total	1	mg/L	<1	
	Visible Sheen	P/A		No	

Guideline =
* = Guideline Exceedence
All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

146 Colonnade Rd. Unit 8, Ottawa, ON K2E 7Y1

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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February 2015 – Page 2 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St., Suite 3000
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1503958
Date Submitted: 2015-03-16
Date Reported: 2015-03-19
Project: 140340
COC #: 177760

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1164171 Sewage 2015-03-03 Fox-Main Cyclot 1	1164172 Sewage 2015-03-03 Fox-Main Cyclot 2	1164173 Sewage 2015-03-03 Fox-Main Cyclot 3
Microbiology	Faecal Coliforms	0	ct/100mL			0	0	0

Guideline = * = Guideline Exceedence
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Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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March 2015 – Page 1 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Raytheon Canada Limited Ottawa
400 Cooper St., Suite 3000
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 15-00345-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1508744
Date Submitted: 2015-04-29
Date Reported: 2015-05-11
Project: 140340
COC #: 177776

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00		7.59	
	Total Suspended Solids	2	mg/L	<2	
Nutrients	BOD5	1	mg/L	49	
Oil & Grease	Oil & Grease - Mineral	1	mg/L	<1	
	Oil & Grease - Non-mineral	1	mg/L	3	
	Oil & Grease - Total	1	mg/L	3	
Visible Sheen	Visible Sheen		P/A	A	

Guideline = * = Guideline Exceedence
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Methods references and/or additional QA/QC information available on request.

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March 2015 – Page 2 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Raytheon Canada Limited Ottawa
400 Cooper St., Suite 3000
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1506733
Date Submitted: 2015-04-29
Date Reported: 2015-04-30
Project: CAM-Main
COC #: 177776

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1170941 Sewage 2015-03-25 Cyclet Fox-M A	1170942 Sewage 2015-03-25 Cyclet Fox-M B	1170943 Sewage 2015-03-25 Cyclet Fox-M C
Microbiology	Faecal Coliforms	0	ct/100mL		1	3	1	

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April 2015 – Page 1 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 15-00345-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1507613
Date Submitted: 2015-05-11
Date Reported: 2015-05-19
Project: 140340
COC #: 177781

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1173008 Sewage 2015-04-16 Fox-M-Cyclelet
Group	Analyte	MRL	Units	Guideline	
General Chemistry	pH	1.00			7.32
	Total Suspended Solids	2	mg/L		<2
Nutrients	BOD5	1	mg/L		9
Oil & Grease	Oil & Grease - Mineral	1	mg/L		<1
	Oil & Grease - Non-mineral	1	mg/L		<1
	Oil & Grease - Total	1	mg/L		<1
Visible Sheen	Visible Sheen		P/A		A

Guideline = * = Guideline Exceedence
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Methods references and/or additional QA/QC information available on request.

146 Colonnade Rd. Unit 8, Ottawa, ON K2E 7Y1

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April 2015 – Page 2 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 15-00345-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1507599
Date Submitted: 2015-05-11
Date Reported: 2015-05-12
Project:
COC #: 177761

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1172985 Sewage 2015-04-16 Fox-M Cyclelet A	1172988 Sewage 2015-04-16 Fox-M Cyclelet B	1172987 Sewage 2015-04-16 Fox-M Cyclelet C
Microbiology	Faecal Coliforms	0	ct/100mL	Water	149	336	249	

Guideline = * = Guideline Exceedence
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Methods references and/or additional QA/QC information available on request.

146 Colonnade Rd. Unit 8, Ottawa, ON K2E 7Y1

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May 2015 – Page 1 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 15-00345-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1509237
Date Submitted: 2015-05-29
Date Reported: 2015-06-12
Project: 140340
COC #: 177771

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00			7.37
Nutrients	BOD ₅	1	mg/L		<1
Oil & Grease	Oil & Grease - Mineral	1	mg/L		<1
	Oil & Grease - Non-mineral	1	mg/L		28
	Oil & Grease - Total	1	mg/L		28
Subcontract	Total Suspended Solids	1	mg/L		<4
Visible Sheen	Visible Sheen		P/A		A

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May 2015 – Page 2 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
Invoice to: Raytheon Canada Limited

Report Number: 1509212
Date Submitted: 2015-05-29
Date Reported: 2015-05-31
Project:
COC #: 177771

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1177521 Wastewater 2015-05-18 Fox Main Cycle III-A	1177522 Wastewater 2015-05-18 Fox Main Cycle III-B	1177523 Wastewater 2015-05-18 Fox Main Cycle III-C
Microbiology	Faecal Coliforms	0	ct/100mL		0	0	0	

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Methods references and/or additional QA/QC information available on request.

146 Colonade Rd. Unit 8, Ottawa, ON K2E 7Y1

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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June 2015 – Page 1 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511187
Date Submitted: 2015-06-22
Date Reported: 2015-07-03
Project: 140340
COC #: 177800

Group	Analyte	MRL	Units	Guideline	Lab ID Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00			1182916 Sewage
Oil & Grease	Total Suspended Solids	1	mg/L		2015-06-18 Fox Main Cyclst
	Oil & Grease - Mineral	1	mg/L	<1	
	Oil & Grease - Non-mineral	1	mg/L	<1	
Subcontract	Oil & Grease - Total	1	mg/L	<1	
	BOD ₅	2	mg/L	<6	
Visible Sheen	Visible Sheen	P/A		A	

Guideline = * = Guideline Exceedence
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146 Colonnade Rd. Unit 8, Ottawa, ON K2E 7Y1

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June 2015 – Page 2 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511217
Date Submitted: 2015-06-22
Date Reported: 2015-06-23
Project: 140340
COC #: 177800

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1182966 Sewage 2015-06-18 Fox Main Cyclct A	1182967 Sewage 2015-06-18 Fox Main Cyclct B	1182968 Sewage 2015-06-18 Fox Main Cyclct C
Microbiology	Faecal Coliforms	0	ct/100mL		3	5	2	

Guideline = * = Guideline Exceedence
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146 Colonnade Rd. Unit 8, Ottawa, ON K2E 7Y1

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July 2015 – Page 1 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
15-00344-0T
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1513587
Date Submitted: 2015-07-16
Date Reported: 2015-07-27
Project: 140340
COC #: 177772

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1188936 Sewage 2015-07-08 Fox-Man Cyclelet 1
General Chemistry	pH	1.00				6.61
Subcontract	Total Suspended Solids	1	mg/L			3
	BOD5	2	mg/L			<2
	Oil & Grease - Mineral	1.0	mg/L			<1.0
	Oil & Grease - Non-mineral	1.0	mg/L			<1.0
Visible Sheen	Oil & Grease - Total	1.0	mg/L			<1.0
	Visible Sheen	PIA				A

Guideline ■ ■ = Guideline Exceedence

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Methods references and/or additional QA/QC information available on request.

146 Colonnade Rd, Unit 8, Ottawa, ON K2E 7Y1

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July 2015 – Page 2 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2B 2H8
Attention: Mr. Will Wyman
PO#:
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1513545
Date Submitted: 2015-07-16
Date Reported: 2015-07-17
Project: 140340
COC #: 177772

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1188774 Sewage 2015-07-08 Fox-Man Cyclst A	1188775 Sewage 2015-07-08 Fox-Man Cyclst B	1188776 Sewage 2015-07-08 Fox-Man Cyclst C
Microbiology	Faecal Coliforms	0	cf/100mL		1	0	0	

Guideline # * = Guideline Exceedence

All analysis completed in Ottawa, Ontario unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario.
Results relate only to the parameters tested on the samples submitted.
Methods, references, and/or additional QA/QC information available on request.

140 Colborne Rd, Unit 8, Ottawa, ON K2E 7Y1

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQG = Provincial Water Quality Guideline, IPWQG = Interim Provincial Water Quality Objective, TDR = Typical Desired Range.

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August 2015 – Page 1 of 1

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2B 2H6
Attention: Mr. Will Wyman
PO#:
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1517342
Date Submitted: 2015-09-01
Date Reported: 2015-09-03
Project: 140340
COC #: 177718

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1199042 Water 2015-08-31 Fox-Man Cyclone I	1199043 Water 2015-08-31 Fox-Man Cyclone II	1199044 Water 2015-08-31 Fox-Man Cyclone II
Microbiology	Faecal Coliforms	0	ct/100mL		0	0	0	

Guideline = = **Guideline Exceedence**

All analysis completed in Ottawa, Ontario unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario.
Results relate only to the parameters tested on the samples submitted.
Methods referenced and/or additional QA/QC information available on request.

146 Colborne Rd, Unit 6, Ottawa, ON K2B 7Y1

MRL = Method Reporting Limit; AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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September 2015 – Page 1 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H6
Attention: Mr. Will Wyman
PO#: 15-00544-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1520191
Date Submitted: 2015-10-08
Date Reported: 2015-10-27
Project: COC # 177782

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1206822 Sewage 2015-09-23 Cyclone For Man
General Chemistry	pH	1.00			6.58	
Subcontract	Total Suspended Solids	2	mg/L		<2	
	BOD5	1	mg/L		<1	
	Oil & Grease - Mineral	1	mg/L		<1	
	Oil & Grease - Non-mineral	1	mg/L		<1	
Visible Sheen	Oil & Grease - Total	1	mg/L		<1	
	Visible Sheen		FA		A	

Guideline =

*** = Guideline Exceedence**

All analysis completed in Ottawa, Ontario unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario.
Results relate only to the parameters tested on the samples submitted.
Methods referenced and/or additional QA/QC information available on request.

146 Colmorate Rd, Unit 6, Ottawa, ON K2B 7Y1

MRL = Method Reporting Limit; AO = Aesthetic Objective; OG = Operational Guideline; MAC = Maximum Acceptable Concentration; IMAC = interim Maximum Acceptable Concentration; STD = Standard; PWQG = Provincial Water Quality Guideline; IPWQG = Interim Provincial Water Quality Guideline; TDR = Typical Desired Range

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September 2015 – Page 2 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H6
Attention: Mr. Will Wyman
PO#:
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1520201
Date Submitted: 2015-10-08
Date Reported: 2015-10-09
Project:
COC #: 177782

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1206847 Sewage 2015-09-23 Cydel Fox-Man 1	1206848 Sewage 2015-09-23 Cydel Fox-Man 2	1206849 Sewage 2015-09-23 Cydel Fox-Man 3
Microbiology	Faecal Coliforms	0	cf/100mL		9	13	20	

Guideline # **# = Guideline Exceedence**

All analysis completed in Ottawa, Ontario (unless otherwise indicated by **) which indicates analysis was completed in Mississauga, Ontario.

Results relate only to the parameters tested on the samples submitted.

Method references and/or additional QAC/C information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQG = Provincial Water Quality Guideline, IPWQG = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

140 Colomac Rd, Unit 8, Ottawa, ON K2E 7Y1

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October 2015 – Page 1 of 3

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H6
Attention: Mr. Will Wyman
PO# 15-00344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1501230
Date Submitted: 2015-10-26
Date Reported: 2015-11-02
Project: 140340
COC #: 177792

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00			5.66
Subcontract	Total Suspended Solids	3	mg/L		<3
	BOD5	1	mg/L		1
	Oil & Grease - Mineral	1	mg/L		<1
	Oil & Grease - Non-mineral	1	mg/L		<1
	Oil & Grease - Total	1	mg/L		<1
Visible Sheen	Visible Sheen	P/A			A

Guideline =

" = Guideline Exceeded

All analysis completed in Ottawa, Ontario, unless otherwise indicated by " which indicates analysis was completed in Mississauga, Ontario.

Results relate only to the parameters tested on the samples submitted.

Methods references and/or additional OAGC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQG = Provincial Water Quality Guideline, IPWQG = Interim Provincial Water Quality Objective, TDR = Typical Desired Range.

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October 2015 – Page 2 of 3

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Canadian Base Operators
400 Cooper St., Suite 3000
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
Invoice to: Canadian Base Operators

Report Number: 1521190
Date Submitted: 2015-10-24
Date Reported: 2015-10-25
Project: 140340
DOC #: 177792

Group	Analyte	MRL	Units	Guideline	Lab ID: Sample Matrix Sample Type Sampling Date Sample ID	1209582 Sewage 2015-10-14 Fox-M-Cyclst 1A	1209583 Sewage 2015-10-14 Fox-M-Cyclst 1B	1209584 Sewage 2015-10-14 Fox-M-Cyclst 1C
Microbiology	Faecal Coliforms	0	cf/100mL		13	12	35	

Guideline □

▪ Guideline Exceedence

All analysis completed in Ottawa, Ontario (unless otherwise indicated by □ which indicates analysis was completed in Mississauga, Ontario). Results relate only to the parameters tested on the samples submitted. Methods references and/or additional QAC/C information available on request.

146 Coronation Rd, Unit 8, Ottawa, ON K2E 7Y1

MRL = Method Reporting Limit, AD = Aesthetic Objective, GG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guidelines, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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October 2015 – Page 3 of 3

NWB Sewage Quality Exceedances

William Wyman to: Justin Hack

Cc: Don Beattie, SCOTT.CHARLAND, IAN.CREIGHTON3

12/01/2015 09:50 AM

[Show Details](#)

Hello Mr. Hack,

On three occasions, the criteria for sewage discharge set out in Nunavut Water Board Licences have been exceeded as follows:

1. BAF-3: The sewage sump was pumped out on 25-Aug-2015. A sample was taken and the faecal coliform levels were 770,000 CFU/100 mL. The limit in the site's water licence is 10,000 CFU/100 mL.

The BAF-3 sewage sump is located at 63°20'21"N, 64°9'27"W and the sewage was discharged about 5 m south of the sump. A melt water stream starts at the bottom of the hill from where the sewage was discharged, approximately 500 to 600 m down slope from where the sewage was discharged. Staff have been on site all summer responding to the 19-Mar-15 fuel spill, creating a higher than normal site loading. The sump filled up because it was not designed for this purpose. (It is not large enough for constant use by a number of people.) Once full, the sewage sump was pumped out on 25-Aug-15. Additionally, the sump is made from native fill containing high amounts of silt and clay which prevent water from filtering through the sump as designed. RCL and NWSO will examine this issue to determine whether the sewage sump needs to be replaced with a larger one constructed of more permeable material.

2. BAF-3: The sewage sump was pumped out on 17-Sep-15. A sample was taken and the faecal coliform levels were 38,000 CFU/100 mL. The limit in the site's water licence is 10,000 CFU/100 mL.

The sewage sump was emptied to make repairs to the sump wall.

3. FOX-M: The sewage effluent was sampled on 14-Oct-15 and the pH was found to be 5.66. The licence stipulates that the pH must fall between 6 and 9.

Staff monitoring the sewage treatment plant identified losses in biomass and lab results showing the pH outside of the allowable range. Investigation for a root cause showed that some cleaning activities were using greater amounts of acidic cleaners than expected. These higher amounts of acidic materials impacted the biomass in the sewage treatment plant and adversely affected the effluent quality. The use of the acidic cleaners has since been stopped and alternative products have been found.

Please let me know if you have any questions or comments about these discharges.

Regards,

Will Wyman, EP(CEA)
Environmental Specialist
North Warning System
Raytheon Canada
Raytheon Company

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November 2015 – Page 1 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 15-00344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1522988
Date Submitted: 2015-11-19
Date Reported: 2015-11-27
Project: 140340
COC #: 177798

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00			6.08
	Total Suspended Solids	1	mg/L		<1
Oil & Grease	Visible Sheen		A/P		A
Subcontract	BOD5	1	mg/L		<1
	Oil & Grease - Mineral	1	mg/L		<1
	Oil & Grease - Non-mineral	1	mg/L		<1
	Oil & Grease - Total	1	mg/L		<1

Guideline = * = Guideline Exceedence

All analysis completed in Ottawa, Ontario unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario.

Results relate only to the parameters tested on the samples submitted.

Methods, references, and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AQ = Aesthetic Objective, OG = Operational Guideline, IMAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQG = Provincial Water Quality Guideline, IPWQG = Interim Provincial Water Quality Objective, TDR = Typical Desired Range.

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400 Cooper St.
Ottawa, ON
K2B 2H6
Attention: Mr. WM Wyman
PO#: 15-00344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1522989
Date Submitted: 2015-11-19
Date Reported: 2015-11-20
Project:
COC #: 177798

Group	Analyte	MRL	Units	Guideline	Lab ID: Sample Matrix Sample Type Sampling Date Sample I.D.	1214860 Sewage 2015-11-10 Cyclit - Fox Main A	1214861 Sewage 2015-11-10 Cyclit - Fox Main B	1214862 Sewage 2015-11-10 Cyclit - Fox Main C
Microbiology	Faecal Coliforms	0	cfu/100mL	2			7	23

Guideline * **** Guideline Exceedence**

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Methods references and/or additional QA/QC information available on request.

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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guidelines, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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Ottawa, ON
K2P 2H6
Attention: Mr. Will Wyman
PO#: 15-00344-01
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1524726
Date Submitted: 2015-12-17
Date Reported: 2015-12-24
Project: 140340
CCC #: 177775

Group	Analyte	MRL	Units	Guideline	Lab ID Sample Matrix Sample Type Sampling Date Sample ID.
General Chemistry	pH	1.00		7.11	
PHC (Hydrocarbons)	Total Suspended Solids	1	mg/L	3	
	Visible Sheen	0	A/P	A	
Subcontract	BOD5	1	mg/L	<1	
	Oil & Grease - Mineral	1	mg/L	<1	
	Oil & Grease - Non-mineral	1	mg/L	<1	
	Oil & Grease - Total	1	mg/L	<1	

Guideline * * = Guideline Exceedence

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Results relate only to the parameters tested on the samples submitted.
Methods reference and/or additional QAC/QC information available on request.

MRL = Method Reporting Limit; AD = Aesthetic Objective; OG = Operational Guideline; MAC = Maximum Acceptable Concentration; IMAC = Interim Maximum Acceptable Concentration; STD = Standard; PWQO = Provincial Water Quality Guideline; IPWQO = Interim Provincial Water Quality Objective; TDR = Typical Desired Range.

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400 Cooper St.
Ottawa, ON
K2P 2H6
Attention: Mr. Will Wyman
PO#: 15-00544-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1524721
Date Submitted: 2015-12-17
Date Reported: 2015-12-18
Project: 140340
COC #: 177775

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1219760 Sewage 2015-12-14 Cydel Fox Man A	1219761 Sewage 2015-12-14 Cydel Fox Man B	1219762 Sewage 2015-12-14 Cydel Fox Man C
Others	Faecal Coliforms	0	cf/100mL			0	0	0

Guideline =

*** = Guideline Exceedence**

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Results relate only to the parameters tested on the samples submitted.

Analytical Method: AMBCOLM1

additional QA/QC information available on request.

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ANNEX D - FOX-M - LOCATION OF BERMED FUEL STORAGE FACILITIES WITH CO-ORDINATES

Licence	Location	Monitoring Station # (Final discharge point of bermed fuel storage facility)	Berm's location on-site	Berm's co-ordinates
3BC-FOH0919 Type "B"	FOX-M North Warning System Site, Hall Beach, Melville Peninsula, Qikiqtani Region, Nunavut	FOH-3	Summit (near PGS building), berm of tank W22A	68° 45' 42" N 81° 13' 24" W
			Summit (near PGS building), berm of tank W22B	68° 45' 43" N 81° 13' 26" W
			Airfield (near hangar) berm of tanks W20D and W20E	68° 46' 16" N 81° 13' 59" W
			Beach, Berm of tank W20F	68° 46' 24" N 81° 12' 47" W
			Beach, Berm of tank W20B	68° 46' 24" N 81° 12' 50" W

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ANNEX E - FOX-M - ANALYSIS OF BERM WATER (EFFLUENT FROM BERMED FUEL STORAGE FACILITIES)

Table E-1 Analysis of Berm Water at FOX-M in 2015

Berm	Maximum Concentration of any Grab Sample	W22A	W22B	W20B	W20F	W20D & W20E
Date	(µg/L)	19-Jun-15	19-Jun-15	19-Jun-15	19-Jun-15	19-Jun-15
pH	6 to 9	7.94	7.86	7.9	7.93	8.11
Oil and Grease (ug/L)	5000	<1000	<1000	<1000	<1000	<1000
Arsenic (total) (ug/L)	100	<20	<20	<20	<20	<20
Cadmium (dissolved) (ug/L)	10	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium (dissolved) (ug/L)	100	<1	<1	<1	<1	<1
Cobalt (dissolved) (ug/L)	50	<0.2	<0.2	<0.2	<0.2	0.7
Copper (dissolved) (ug/L)	200	2	3	2	2	2
Lead (dissolved) (ug/L)	50	<1	<1	<1	<1	<1
Mercury (total) (ug/L)	0.6	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel (dissolved) (ug/L)	200	<5	<5	<5	<5	<5
PCB (total) (ug/L)	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Phenols (ug/L)	20	<2	<2	<2	<2	<2
Zinc (total) (ug/L)	500	<40	<40	70	<40	<40
Benzene (ug/L)	370	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene (ug/L)	2	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl benzene (ug/L)	90	<0.5	<0.5	<0.5	<0.5	<0.5

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Summit (near PGS building), Berm of tank W22A

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EXOVA ENVIRONMENTAL ONTARIO

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Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 15-0344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511740
Date Submitted: 2015-06-26
Date Reported: 2015-07-02
Project: W 22 A
COC #: 172483

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1184420 Wastewater 2015-06-19 W 22 A Power Plant Diss Metals
Metals	Cd	0.0001	mg/L	<0.0001		
	Co	0.0002	mg/L	<0.0002		
	Cr	0.001	mg/L	<0.001		
	Cu	0.001	mg/L	0.002		
	Ni	0.005	mg/L	<0.005		
	Pb	0.001	mg/L	<0.001		

Guideline = * = Guideline Exceedence
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Methods references and/or additional QA/QC information available on request.

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Attention: Mr. Will Wyman
PO#: 15-0344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511732
Date Submitted: 2015-06-26
Date Reported: 2015-07-14
Project: W 22 A
COC #: 172483

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00			1184412 Wastewater 2015-06-19 W 22 A Power Plant
Mercury	Hg	0.0001	mg/L		<0.0001
Metals	Aqua-Regia Digest			Y	
	As	0.02	mg/L		<0.02
Oil & Grease	Zn	0.04	mg/L		<0.04
	Oil & Grease - Total	1.0	mg/L		<1.0
PCBs	Polychlorinated Biphenyls (PCBs)	0.1	ug/L		<0.1
Phenols-4AAP	Phenols	0.002	mg/L		<0.002
VOCs	Benzene	0.5	ug/L		<0.5
	Ethylbenzene	0.5	ug/L		<0.5
	Toluene	0.5	ug/L		<0.5
VOCs Surrogates (%)	Toluene-d8	0	%		95

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Methods references and/or additional QA/QC information available on request.

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Summit (near PGS building), Berm of tank W22B

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K2P 2H8

Attention: Mr. Will Wyman
PO#:
15-0344-OT

Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511737
Date Submitted: 2015-06-26
Date Reported: 2015-07-02
Project: W 22 B
COC #: 172479

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	
Metals	Cd	0.0001	mg/L		1184417 Wastewater	<0.0001
	Co	0.0002	mg/L			<0.0002
	Cr	0.001	mg/L			<0.001
	Cu	0.001	mg/L			0.003
	Ni	0.005	mg/L			<0.005
	Pb	0.001	mg/L			<0.001

Guideline = * = Guideline Exceedence
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Methods references and/or additional QA/QC information available on request.

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Revision No. 1

Effective Date: 17-Mar-2016

Page: 62 - 69

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Summit (near PGS building), Berm of tank W22B

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Client: Raytheon Canada Limited Ottawa
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Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 15-0344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511729
Date Submitted: 2015-06-26
Date Reported: 2015-07-08
Project: W.22 B
COC #: 172479

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1184409 Wastewater 2015-06-19 W22B Summit Power Plant
General Chemistry	pH	1.00				7.86
Mercury	Hg	0.0001	mg/L			<0.0001
	Aqua-Regia Digest					Y
	As	0.02	mg/L			<0.02
Metals	Zn	0.04	mg/L			<0.04
	Oil & Grease - Total			1	mg/L	<1
	PCBs	0.1	ug/L			<0.1
Phenols-4AAP	Polychlorinated Biphenyls (PCBs)	0.002	mg/L			<0.002
	Phenols					
	Benzene	0.5	ug/L			<0.5
VOCs	Ethylbenzene	0.5	ug/L			<0.5
	Toluene	0.5	ug/L			<0.5
	Toluene-d8	0	%			92
VOCs Surrogates (%)						

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Methods references and/or additional QA/QC information available on request.

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Beach, Berm of tank W20B

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400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
15-0344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511739
Date Submitted: 2015-06-26
Date Reported: 2015-07-02
Project: W 20 B
COC #: 169319

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
Metals	Cd	0.0001	mg/L	<0.0001	1184419 Wastewater 2015-06-19 W 20 B Beach Tank Diss Metals
	Co	0.0002	mg/L	<0.0002	
	Cr	0.001	mg/L	<0.001	
	Cu	0.001	mg/L	0.002	
	Ni	0.005	mg/L	<0.005	
	Pb	0.001	mg/L	<0.001	

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Methods references and/or additional QA/QC information available on request.

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Beach, Berm of tank W20B

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400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
15-0344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511731
Date Submitted: 2015-06-26
Date Reported: 2015-07-08
Project: W 20 B
COC #: 169319

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00			1184411 Wastewater 2015-06-19 W 20 B Beach Tank
Mercury	Hg	0.0001	mg/L		<0.0001
Metals	Aqua-Regia Digest			Y	
	As	0.02	mg/L		<0.02
	Zn	0.04	mg/L		0.07
Oil & Grease	Oil & Grease - Total	1	mg/L		<1
PCBs	Polychlorinated Biphenyls (PCBs)	0.1	ug/L		<0.1
Phenols-4AAP	Phenols	0.002	mg/L		<0.002
VOCs	Benzene	0.5	ug/L		<0.5
	Ethylbenzene	0.5	ug/L		<0.5
	Toluene	0.5	ug/L		<0.5
VOCs Surrogates (%)	Toluene-d8	0	%		91

Guideline = * = Guideline Exceedence
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Results relate only to the parameters tested on the samples submitted.
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Beach, Berm of tank W20F
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400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 15-0344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511738
Date Submitted: 2015-06-26
Date Reported: 2015-07-02
Project: W 20 F
COC #: 169321

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
Metals	Cd	0.0001	mg/L	<0.0001	1184418 Wastewater 2015-06-19 W 20 F Beach Tank Diss Metals
	Co	0.0002	mg/L	<0.0002	
	Cr	0.001	mg/L	<0.001	
	Cu	0.001	mg/L	0.002	
	Ni	0.005	mg/L	<0.005	
	Pb	0.001	mg/L	<0.001	

Guideline = * = Guideline Exceedence
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Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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Beach, Berm of tank W20F
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Attention: Mr. Will Wyman
PO#: 15-0344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511730
Date Submitted: 2015-06-26
Date Reported: 2015-07-08
Project: W 20 F
COC #: 169321

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00			1184410 Wastewater 2015-06-15 W 20 F Beach Tank
Mercury	Hg	0.0001	mg/L		<0.0001
Metals	Aqua-Regia Digest				Y
	As	0.02	mg/L		<0.02
	Zn	0.04	mg/L		<0.04
Oil & Grease	Oil & Grease - Total	1	mg/L		<1
PCBs	Polychlorinated Biphenyls (PCBs)	0.1	ug/L		<0.1
Phenols-4AAP	Phenols	0.002	mg/L		<0.002
VOCs	Benzene	0.5	ug/L		<0.5
	Ethylbenzene	0.5	ug/L		<0.5
	Toluene	0.5	ug/L		<0.5
VOCs Surrogates (%)	Toluene-d8	0	%		98

Guideline = * = Guideline Exceedence
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19Jun2015

Airfield (near hangar), Berm of tanks W20D and W20E

Page 1 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#:
15-0344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511744
Date Submitted: 2015-06-26
Date Reported: 2015-07-02
Project: W 20 D+E
COC #: 172476

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
Metals	Cd	0.0001	mg/L	<0.0001	1184424 Wastewater 2015-06-19 W 20 D+E Audit Tanks Diss Metals
	Co	0.0002	mg/L	0.0007	
	Cr	0.001	mg/L	<0.001	
	Cu	0.001	mg/L	0.002	
	Ni	0.005	mg/L	<0.005	
	Pb	0.001	mg/L	<0.001	

Guideline =
* = Guideline Exceedence
All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods referenced and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

146 Colonade Rd. Unit 8, Ottawa, ON K2E 7Y1

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SOW REF: 16.F.5.d

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Airfield (near hangar), Berm of tanks W20D and W20E

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EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 15-0344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1511736
Date Submitted: 2015-06-26
Date Reported: 2015-07-14
Project: W 20 D+E
COC #: 172476

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sampling Date Sample I.D.
General Chemistry	pH	1.00			1184416 Wastewater 2015-06-19 W 20 D+E Audition Tanks
Mercury	Hg	0.0001	mg/L		<0.0001
Metals	Aqua-Regia Digest				Y
	As	0.02	mg/L		<0.02
	Zn	0.04	mg/L		<0.04
Oil & Grease	Oil & Grease - Total	1.0	mg/L		<1.0
	PCBs	0.1	ug/L		<0.1
Phenols-4AAP	Phenols	0.002	mg/L		<0.002
VOCs	Benzene	0.5	ug/L		<0.5
	Ethylbenzene	0.5	ug/L		<0.5
	Toluene	0.5	ug/L		<0.5
VOCs Surrogates (%)	Toluene-d8	0	%		96

Guideline = * = Guideline Exceedence
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