



2015 ANNUAL NUNAVUT WATER BOARD REPORT FOR FOX-M

FOR THE North Warning System

Contract # W8485-100224/001/NX
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This sheet is a record of each issue of this document. When the revised document is issued, the previous issue is automatically superseded.

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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, Chambly, 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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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.

**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.

**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, Chambly, 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.



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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ANNEX A - FOX-M - HAZARDOUS WASTE AND WASTE OIL DISPOSAL IN 2015

2015 Movement Documents for TDG Regulated waste and NWS Manifests for non-TDG Regulated waste.

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.

2581501-0

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

A Generator / Consigneur Producteur / Expéditeur		Registration No. / Provincial ID No. N° d'immatriculation - n° provincial NU6100003		B Carrier Transporteur		Registration No. / Provincial ID No. N° d'immatriculation - n° provincial	
Company name / Nom de l'entreprise DND C6 RCL		Company name / Nom de l'entreprise MUNAVAT EASTERN ARCTIC SHIPPERS		Company name / Nom de l'entreprise MUNAVAT EASTERN ARCTIC SHIPPERS		Company name / Nom de l'entreprise MUNAVAT EASTERN ARCTIC SHIPPERS	
Mailing address / Adresse postale City / Ville 22 WING BLVD 109 Hornell Heights ON P0H 1P0		Mailing address / Adresse postale City / Ville 22 WING BLVD 109 Hornell Heights ON P0H 1P0		Mailing address / Adresse postale City / Ville 22 WING BLVD 109 Hornell Heights ON P0H 1P0		Mailing address / Adresse postale City / Ville 22 WING BLVD 109 Hornell Heights ON P0H 1P0	
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Registration No. / Provincial ID No. N° d'immatriculation - d'Id. provincial NU6100003		Registration No. / Provincial ID No. N° d'immatriculation - d'Id. provincial NSC 385		Registration No. / Provincial ID No. N° d'immatriculation - d'Id. provincial 27011824-1	
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Physical state / État phys. S		Physical state / État phys. S		Physical state / État phys. L	
National code in country of origin / Code du pays 15		National code in country of origin / Code du pays 15		National code in country of origin / Code du pays 15	
Export / Exportation 15		Export / Exportation 15		Export / Exportation 15	
Import / Importation 15		Import / Importation 15		Import / Importation 15	
Customs code(s) / Code(s) de douanes 15		Customs code(s) / Code(s) de douanes 15		Customs code(s) / Code(s) de douanes 15	
24-hour number / 24-heures 705-494-2011 ext 3400		24-hour number / 24-heures 705-494-2011 ext 3400		24-hour number / 24-heures 705-494-2011 ext 3400	
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Intended Receiver / consignee Réceptionnaire / destinataire prévu SAFETY-KLEEN 2701824-1 Mailing address / Adresse postale City / Ville Clean Harbors 6785 rte 132 QC J3C 1B6 E-mail / Courriel électronique Tel. No. / N° de tél.		Port of entry Point d'entrée International / international Part of exit Point de sortie Interprovincial / interprovincial		Date received / Date de réception Year / Année Month / Mois Day / Jour Time / Heure <input type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
Receiving site address / Adresse du lieu de destination City / Ville 2730 BOULEVARD INDUSTRIEL CHAMBLY QC J3L 4V2		Name of authorized person (print) Nom de l'agent autorisé (saisissez l'imprimé) CRAIG FOREMAN Year / Année Month / Mois Day / Jour 15/09/12		If waste or recyclable material is to be transferred, specify intended company name / Si les déchets ou matières recyclables doivent être transférés, précisez le nom du destinataire	
Proc. code Code proc.		Shipping name Appellation réglementaire		Quantity shipped Quantité expédiée	
(1) Waste Petroleum Distillates N.O.S.		3 UN 1268		205 L	
(2) Waste Paint Related Material		3 UN 1263		205 L	
(3) Waste Aerosols Flammable		2.1 UN 1950		50 KG	
(4) Liquid N.O.S. Fuel Aviation Turbine Engine		4.1 UN 3175		50 KG	
Hazard No. N° de classification		Hazard Label No. N° de signalisation		Hazard Code Code de danger	
(1) * flash point 60°C		(2) * flash point 38°C		(3) International use only	
(4) 24-hour Number: 705-494-2011 ext 3400 Use in case of dangerous goods emergency		Name of authorized person (print) Nom de l'agent autorisé (saisissez l'imprimé) CRAIG IVANY Tel. No. / N° de tél. 705-494-2011 ext. 2861		Signature MARGORIE STRAND May 15/12	
Special handling / Manutention spéciale <input type="checkbox"/> Abstract / Récept <input type="checkbox"/> As follows / Ci-dessus		Date shipped / Date d'expédition Year / Année Month / Mois Day / Jour 15/09/12		Time / Heure <input type="checkbox"/> A.M. <input type="checkbox"/> P.M.	

Instructions on reverse
Instructions au verso

Copy / Copie 1 (white / blanche)

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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 20, 2015 2:43 PM		TCN-34473			
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: 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 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

Filed By: MSTRANO		Date: Aug 20, 2015 4:27 PM		TCN-34476			
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. 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 filled with Raytheon within 45 hours of receipt.

Received By:	Date
Received By:	Date

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UNCLASSIFIED

Raytheon
Canada Limited

SOW REF: 16.F.5.d

**SHIPPING MANIFEST**

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

NON NEGOTIABLE

Filed 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
4	Pallet	854 kg	2002406	WASTE - OIL (45 GALLON DRUM)	B/Code or S/N
					Remarks Assets 329831,329884,329882,329883

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

Filed 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
4	Pallet	854 kg	2002406	WASTE - OIL (45 GALLON DRUM)	B/Code or S/N
					Remarks Assets 329833,3298083,329834,329835

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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Raytheon
Canada Limited

SOW REF: 16.F.5.d

**SHIPPING MANIFEST**

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

NON NEGOTIABLE

Filed By: MSTRANO	Date: Aug 20, 2015 4:34 PM	TCN-34479
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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
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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	2002408	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:	Date
Received By:	Date

**SHIPPING MANIFEST**

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

NON NEGOTIABLE

Filed By: MSTRANO	Date: Aug 20, 2015 4:36 PM	TCN-34480
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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
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Attention:	Attention:			
Carrier: NEAS	Routing: 4 drums on pallet	Waybill #:	Total Pcs. 1	Total Weight: 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 filled with Raytheon within 45 hours of receipt.

Received By:	Date
Received By:	Date

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Canada Limited

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 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: 828 kg	
QTY Order	Type	Line Weight	Item	Description	WO or PO
4	Pallet	828 kg	2002344	WASTE - GLYCOL (DRUM)	
					B/Code or S/N Assets 329993,330000,329999,329998

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 4:40 PM		TCN-34482	
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: 831 kg	
QTY Order	Type	Line Weight	Item	Description	WO or PO
4	Pallet	831 kg	2002406	WASTE - OIL (45 GALLON DRUM)	2.75M3
					B/Code or S/N Assets 331022,330911,328129,334548

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

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Received By:	Date

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Canada Limited

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SHIPPING MANIFEST

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

NON NEGOTIABLE

Filed 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		
				Total Weight: 857 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
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

Filed 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		
				Total Weight: 891 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4	Pallet		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.

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Received By:	Date

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SHIPPING MANIFEST

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

NON NEGOTIABLE

Filed By: MSTRANO		Date: Aug 25, 2015 10:01 AM		TCN-34504			
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: 766 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4	Pallet	766 kg	2002406	WASTE - OIL (45 GALLON DRUM)	1.24M3		Assets 329985, 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

Filed By: MSTRANO		Date: Aug 25, 2015 10:03 AM		TCN-34505			
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: 1017 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4	pallet	1017 kg	2002344	WASTE - GLYCOL (DRUM)	1.24M3		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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Canada Limited

SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filed By: MSTRANO		Date: Aug 25, 2015 10:06 AM		TCN-34506			
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: 851 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4	Pallet	851 kg	2002406	WASTE - OIL (45 GALLON DRUM)	1.24M3		Assets 331658,331766,329893,329892

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

Filed By: MSTRANO		Date: Aug 25, 2015 10:08 AM		TCN-34507			
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: 796 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4	Pallet	796 kg	2002406	WASTE - OIL (45 GALLON DRUM)	1.24M3		Assets 331626,331627,331724,331625

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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Raytheon
Canada Limited

SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filed By: MSTRANO		Date: Aug 25, 2015 10:12 AM		TCN-34509			
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: 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		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 2H8

NON NEGOTIABLE

Filed By: MSTRANO		Date: Aug 25, 2015 10:20 AM		TCN-34511			
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: 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 329810,329830,329832,334557

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

Received By:	Date
Received By:	Date

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Raytheon
Canada Limited

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. 1	Total Weight: 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. 1	Total Weight: 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	1.24M3		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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Raytheon
Canada Limited

SOW REF: 16.F.5.d



SHIPPING MANIFEST

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

NON NEGOTIABLE

Filed 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	BiCode 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 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

Filed 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	BiCode 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 filled with Raytheon within 45 hours of receipt.

Received By:	Date
Received By:	Date

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Raytheon
Canada Limited

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 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		
				Total Weight: 832 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4	Pallet	832 kg	2002406	WASTE - OIL (45 GALLON DRUM)	2.75M3		Assets 330758,326121,334550,334549

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

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**SHIPPING MANIFEST**

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

NON NEGOTIABLE

Filed 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		
				Total Weight: 496 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
3	pallet	496 kg	2002356	WASTE - OIL FILTERS (DRUM)			Assets 328079,325586,328078
1			2003635	WASTE - FUEL FILTERS (DRUM)			Asset 308093

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

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Received By:	Date

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Canada Limited

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 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, XDA 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	BiCode 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

Filed 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, XDA 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	BiCode 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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SHIPPING MANIFEST

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

NON NEGOTIABLE

Filed By: MSTRANO		Date: Aug 27, 2015 6:55 PM		TCN-34554			
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: 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 328007,325106,334551,334544

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

Filed By: MSTRANO		Date: Aug 27, 2015 7:09 PM		TCN-34558			
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: 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 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

Filed By: MSTRANO		Date: Aug 27, 2015 7:12 PM		TCN-34559			
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: 739 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	BiCode or S/N	Remarks
0	pallet	739 kg	2002351	WASTE - ACTIVATED CARBON FILTE	2.68M3		Assets 328870,331019,331018,331017

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

Filed By: MSTRANO		Date: Aug 27, 2015 7:14 PM		TCN-34560			
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: 495 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	BiCode or S/N	Remarks
1	pallet	495 kg	3005411	WASTE - GLYCOL SOAKED ABSORBEN			Asset 328901
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 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

Filed By: MSTRANO		Date: Aug 27, 2015 7:18 PM		TCN-34561			
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: 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 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

Filed By: MSTRANO		Date: Aug 27, 2015 7:24 PM		TCN-34562			
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: 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 334560,334561,171570,326269

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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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 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

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 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 7:44 PM		TCN-34567			
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: 849 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
4	pallet	849 kg	2002406	WASTE - OIL (45 GALLON DRUM)	2.69M3		Assets 329899,334541,334540,334539

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 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. 1	Total Weight: 510 kg			
QTY Order	Type	Line Weight	Item	Description	WO or PO	B/Code or S/N	Remarks
1	pallet	510 kg	2002406	WASTE - OIL (45 GALLON DRUM)	1.30M3		Asset 331857
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

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

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 28, 2015 11:41 AM	TCN-34574
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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
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Attention:		Attention:	
Carrier: NEAS	Routing: 4 EMPTY DRUMS ON PALLET	Waybill #:	Total Pcs. 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
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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
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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)	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	90 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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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:	Routing:	Waybill #:	Total Pcs.	Total Weight:			
NEAS	4 EMPTY drums on pallet		1	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:	Routing:	Waybill #:	Total Pcs.	Total Weight:			
NEAS	1 drum on pallet		1	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 48 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: 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 328287
1	Pallet		3004927	WASTE - OIL AND WATER MIXTURE			Asset 334883
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	Parameter				
	pH	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



Client: Canadian Base Operators
400 Cooper St., Suite 3000
Ottawa, ON
KCP 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	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry		pH	1.00			1158828 Sewage
		Total Suspended Solids	2	mg/L		2015-02-01 Cyclot FOX - M
Nutrients		BOD5	1	mg/L		
		Oil & Grease - Mineral	1	mg/L		
Oil & Grease		Oil & Grease - Non-mineral	1	mg/L		
		Oil & Grease - Total	1	mg/L		
Visible Sheen		Visible Sheen		P/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 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 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		2015-03-03 Fox-Main Cyclelet
Nutrients		BOD5	1	mg/L		
		Oil & Grease - Mineral	1	mg/L		
Oil & Grease		Oil & Grease - Non-mineral	1	mg/L		
		Oil & Grease - Total	1	mg/L		
Visible Sheen		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).
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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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February 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: 1503958
Date Submitted: 2015-03-16
Date Reported: 2015-03-19
Project: 140340
COC #: 177760

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1164171 Sewage 2015-03-03 Fox-Main Cycle 1	1164172 Sewage 2015-03-03 Fox-Main Cycle 2	1164173 Sewage 2015-03-03 Fox-Main Cycle 3
Group	Analyte	MRL	Units	Guideline			
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).
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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

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

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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: 1506744
Date Submitted: 2015-04-29
Date Reported: 2015-05-11
Project: 140340
COC #: 177776

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	
				1170964 Wastewater	
				2015-03-25 Cyclot Fox-M	
Group	Analyte	MRL	Units	Guideline	
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
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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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			
Microbiology	Faecal Coliforms	0	ct/100mL		2015-03-25	Cyclot Fox-M A			
					1170942	Sewage			
					2015-03-25	Cyclot Fox-M B			
					1170943	Sewage			
					2015-03-25	Cyclot Fox-M C			

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

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

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April 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: 1507613
Date Submitted: 2015-05-11
Date Reported: 2015-05-19
Project: 140340
COC #: 177761

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

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1172985	1172986	1172987
						Sewage	Sewage	Sewage
						2015-04-16	2015-04-16	2015-04-16
						Fox-M Cyclelet A	Fox-M Cyclelet B	Fox-M Cyclelet C
Group	Analyte	MRL	Units	Guideline				
Microbiology	Faecal Coliforms	0	ct/100mL	Water	149	336	249	

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, PIWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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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

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	
Group	Analyte	MRL	Units	Guideline	
General Chemistry	pH	1.00			7.37
Nutrients	BOD5	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

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.
145 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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May 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

Report Number: 1508212
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
Microbiology	Faecal Coliforms	0	ct/100mL		1177522	Wastewater	-	2015-05-18	Fox Main Cycle III-B
					1177523	Wastewater	-	2015-05-18	Fox Main Cycle III-C

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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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

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	
				1182916 Sewage	
				2015-06-18 Fox Main Cyclet	
Group	Analyte	MRL	Units	Guideline	
General Chemistry	pH	1.00			6.06
	Total Suspended Solids	1	mg/L		<1
Oil & Grease	Oil & Grease - Mineral	1	mg/L		<1
	Oil & Grease - Non-mineral	1	mg/L		<1
	Oil & Grease - Total	1	mg/L		<1
Subcontract	BOD5	2	mg/L		<6
Visible Sheen	Visible Sheen		P/A		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 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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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

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

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.
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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July 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#: 15-00344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1513597
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.
General Chemistry		pH	1.00			1188936 Sewage
		Total Suspended Solids	1	mg/L		2015-07-08 Fox-Man Cyclelet 1
Subcontract		BOD5	2	mg/L		
		Oil & Grease - Mineral	1.0	mg/L		
		Oil & Grease - Non-mineral	1.0	mg/L		
		Oil & Grease - Total	1.0	mg/L		
		Visible Sheen	1.0	P/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 references and/or additional QA/QC information available on request.

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

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

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

Group	Analyte	MRL	Units	Guideline	1188774	1188775	1188776
					Sample Matrix Sample Type Sampling Date Sample I.D.	Sample Matrix Sample Type Sampling Date Sample I.D.	Sample Matrix Sample Type Sampling Date Sample I.D.
Microbiology	Faecal Coliforms	0	cf/100mL		Sewage 2015-07-08 Fox-Man Cyclelet A	Sewage 2015-07-08 Fox-Man Cyclelet B	Sewage 2015-07-08 Fox-Man Cyclelet C
					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.
1485 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, PWQO = Provincial Water Quality Guideline, IPWQO = 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



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: 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 Cycle I
Microbiology	Faecal Coliforms	0	cf/100mL		1199043	Water		2015-08-31	Fox-Man Cycle II
					1199044	Water		2015-08-31	Fox-Man Cycle III
					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.

145 Colomade Rd. Unit 6, 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 Objective, 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

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

Group		Analyte	MRL	Units	Guideline
General Chemistry		pH	1.00		6.55
		Total Suspended Solids	2	mg/L	<2
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
Visible Sheen		Visible Sheen		P/A	A

Lab I.D.
Sample Matrix
Sample Type
Sampling Date
Sample I.D.
1206822
Sewage
2015-09-23
Cyclotol For Main

Guideline = * = Guideline Exceedance
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 6, 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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September 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: 1520201
Date Submitted: 2015-10-08
Date Reported: 2015-10-09
Project:
COC #: 177782

Group	Analyte	MRL	Units	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	Guideline		
					1206847 Sewage 2015-09-23 Cyclot Fox-Main 1	1206848 Sewage 2015-09-23 Cyclot Fox-Main 2	1206849 Sewage 2015-09-23 Cyclot Fox-Main 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.
Methods references and/or additional QA/QC information available on request.

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

MRL = Method Reporting Limit, AO = Aesthetic Objective, OQ = 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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Effective Date: 17-Mar-2016

Page: 50 - 69

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October 2015 – Page 1 of 3

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
KCP 2H5
Attention: Mr. Will Wyman
PO#: 15-00344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1521232
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			1209690 Sewage
		Total Suspended Solids	3	mg/L		2015-10-19 Fox-M-Cyclot 1
Subcontract		BOD5	1	mg/L		
		Oil & Grease - Mineral	1	mg/L		
		Oil & Grease - Non-mineral	1	mg/L		
		Oil & Grease - Total	1	mg/L		
Visible Sheen		Visible Sheen		PIA		A

Guideline = * = Guideline Exceedance
All analysis completed in Ottawa, Ontario unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario.
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Methods references and/or additional QA/QC information available on request.
146 Colonnade Rd, Unit 8, Ottawa, ON K2E 7V1

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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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
COC #: 177792

Group	Analyte	MRL	Units	Guideline	1209582	1209583	1209584
					Life I.D. Sample Matrix Sample Type Sampling Date Sample I.D. 1209582 Sewage - 2015-10-14 Fox-M-Cydet 1A	1209583 Sewage - 2015-10-14 Fox-M-Cydet 1B	1209584 Sewage - 2015-10-14 Fox-M-Cydet 1C
Microbiology	Faecal Coliforms	0	cf/100mL		13	12	35

Guideline =

*** = Guideline Exceedence**

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

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October 2015 – Page 3 of 3

NWB Sewage Quality Exceedances

■ **William Wyman** to: Justin Hack

12/01/2015 09:50 AM

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

[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

+1 613-787-3655 (office)
+1 613-298-5123 (cell)
+1 613-787-3704 (fax)
william.wyman@raytheon.com

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www.raytheon.ca



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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#: 15-00344-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1522066
Date Submitted: 2015-11-19
Date Reported: 2015-11-27
Project: 140340
COC #: 177756

Group		Analyte	MRL	Units	Guideline
General Chemistry		pH	1.00		5.05
		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

Lab I.D.
Sample Matrix
Sample Type
Sampling Date
Sample I.D.
1214859
Sewage
2015-11-10
Cyclot For Main

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 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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EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis



Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H5
Attention: Mr. Will 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 #: 177708

					Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.							
Group	Analyte	MRL	Units	Guideline	1214860	Sewage	2015-11-10	Cyclot - Fox Main A	1214861	Sewage	2015-11-10	Cyclot - Fox Main B	1214862	Sewage	2015-11-10	Cyclot - Fox Main C
Microbiology	Faecal Coliforms	0	cf/100mL		2		7		25							

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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EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
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
COC #: 177775

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1219758 Sewage 2015-12-14 Cyclot-Fox Main
Group	Analyte	MRL	Units	Guideline	
General Chemistry	pH	1.00			7.11
	Total Suspended Solids	1	mg/L		3
PHC (Hydrocarbons)	Visible Sheen	0	A/P		A
	BOD5	1	mg/L		<1
Subcontract	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 references and/or additional QA/QC information available on request.

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

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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#: 15-00344-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			
Others	Faecal Coliforms	0	cf/100mL		2015-12-14	Cyclot For Main A			
					1219761	Sewage			
					2015-12-14	Cyclot For Main B			
					1219762	Sewage			
					2015-12-14	Cyclot For Main C			

Guideline = * = **Guideline Exceedence**
All analyses 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.
Analytical Method: AMBCOLINI
Additional QA/QC information available on request.
145 Colomade Rd. Unit 6, Ottawa, ON K2E 7Y1

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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 (µg/L)	W22A 19-Jun-15	W22B 19-Jun-15	W20B 19-Jun-15	W20F 19-Jun-15	W20D & W20E 19-Jun-15
Date						
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

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

				Lab I.D.	1184420
				Sample Matrix	Wastewater
				Sample Type	
				Sampling Date	2015-06-19
				Sample I.D.	W 22 A Power Plant Diss Metals
Group	Analyte	MRL	Units	Guideline	
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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Summit (near PGS building), Berm of tank W22A

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

				Lab I.D.	1184412
				Sample Matrix	Wastewater
				Sample Type	
				Sampling Date	2015-06-19
				Sample I.D.	W 22 A Power Plant
Group	Analyte	MRL	Units	Guideline	
General Chemistry	pH	1.00			7.94
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	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

Guideline = * = Guideline Exceedence
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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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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: 1511737
Date Submitted: 2015-06-26
Date Reported: 2015-07-02
Project: W 22 B
COC #: 172479

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1184417 Wastewater
Group	Analyte	MRL	Units	Guideline	2015-06-19 W 22 B Summit 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		0.003
	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.
146 Colonnade Rd. Unit 8, Ottawa, ON K2E 7Y1

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Summit (near PGS building), Berm of tank W22B

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

				Lab I.D.	1184409
				Sample Matrix	Wastewater
				Sample Type	
				Sampling Date	2015-06-19
				Sample I.D.	W22B Summit Power Plant
Group	Analyte	MRL	Units	Guideline	
General Chemistry	pH	1.00			7.86
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	%		92

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

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Beach, Berm of tank W20B

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

Group		Analyte	MRL	Units	Guideline
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

Lab I.D. 1184419
Sample Matrix Wastewater
Sample Type
Sampling Date 2015-06-19
Sample I.D. W 20 B Beach Tank
Diss Metals

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

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Beach, Berm of tank W20B

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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: 1511731
Date Submitted: 2015-06-26
Date Reported: 2015-07-08
Project: W 20 B
COC #: 168319

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1184411 Wastewater 2015-06-19 W 20 B Beach Tank
Group	Analyte	MRL	Units	Guideline	
General Chemistry	pH	1.00			7.90
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.
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, IPIWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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Beach, Berm of tank W20F

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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: 1511738
Date Submitted: 2015-06-26
Date Reported: 2015-07-02
Project: W 20 F
COC #: 166321

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1184418 Wastewater
					2015-06-19 W 20 F Beach Tank Diss Metals
Group	Analyte	MRL	Units	Guideline	
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
All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
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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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Beach, Berm of tank W20F

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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: 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
Mercury		Hg	0.0001	mg/L		2015-06-15 W 20 F Beach Tank
Metals		Aqua-Regia Digest				
		As	0.02	mg/L		
		Zn	0.04	mg/L		
Oil & Grease		Oil & Grease - Total	1	mg/L		
PCBs		Polychlorinated Biphenyls (PCBs)	0.1	ug/L		
Phenols-4AAP		Phenols	0.002	mg/L		
VOCs		Benzene	0.5	ug/L		
		Ethylbenzene	0.5	ug/L		
		Toluene	0.5	ug/L		
VOCs Surrogates (%)		Toluene-d8	0	%		

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

Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.					1184424 Wastewater 2015-06-19 W 20 D+E Audition Tanks Diss Metals
Group	Analyte	MRL	Units	Guideline	
Metals	Cd	0.0001	mg/L		<0.0001
	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 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, TOR = Typical Desired Range

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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

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1184416 Wastewater 2015-06-19 W 20 D+E Audition Tanks
Group	Analyte	MRL	Units	Guideline	
General Chemistry	pH	1.00			8.11
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	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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