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SOW REF: 16.F.5.d

# 2014 ANNUAL NUNAVUT WATER BOARD REPORT FOR FOX-M

FOR THE

## North Warning System

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

Document Number  
FM-EHS-13 Rev 1, 16-Mar-2015

### Prepared for

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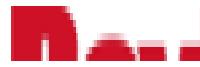
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## CHANGE HISTORY

This sheet is a record of each issue of this document. When the revised document is issued, the previous issue is automatically superseded.

| Version   | Date        | Configuration Management | Pages Changed | Reason for Change                 |
|---|-------------|--------------------------|---------------|-----------------------------------|
| 1   | 16-Mar-2015 | -                        | -             | Initial Document Release.         |
|   |             |                          |               |                                   |
|   |             |                          |               |                                   |
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|   |             |                          |               |                                   |
| <b>Document Title:</b> 2014 Annual Nunavut Water Board Report for FOX-M |             |                          |               | <b>Document Number:</b> FM-EHS-13 |

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Document Number: FM-EHS-13

Revision No. 1

Effective Date: 16-Mar-2015

Page: ii - v

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## EXECUTIVE SUMMARY

This 2014 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 2014.

The Operation and Maintenance (O&M) Contractor for the North Warning System (NWS) changed in 2014. Nasittuq was the O&M Contractor of the NWS from 01 January to 31 July 2014 and had Care, Custody, and Control (CC&C) of the site. On 01 August 2014, RCL became the O&M Contractor and took over CC&C of the NWS sites, including FOX-M Long Range Radar site.

FOX-M is an attended (manned) North Warning System radar site located at Hall Beach, Nunavut. The site population increases from due to project activity at FOX-M and similarly at other radar sites within FOX-M’s zone.

The water usage from January to December was 15,688.7 cubic meters, which is an average of 43.0 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 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. The treated effluent was sent for laboratory analysis.

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.

No hazardous waste and waste oil were disposed of in 2014.

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

One outdoor spill occurred at FOX-M in 2014. The spill was:

- a. NT-NU Spill Line Report # 14-177. On 23 May 2014, 20 liters of Jet A1 fuel leaked from a broken gasket on a fuel line between the power plant and tanks W22J and W22K. The spilled fuel was contained by snow and ice. The spilled fuel was cleaned up with absorbent pads, and the contaminated snow was placed in a salvage drum for future disposal at a licensed hazardous waste disposal facility outside of Nunavut. The broken gasket was replaced.

The Spill Contingency Plan was successfully implemented.

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## የኢትዮጵያና የደንብ

γ<math>\Gamma</math> d&theta;σ<sup>gb</sup>C<sup>gb</sup>bc><sup>gb</sup> at FOX-M 2014<sup>J</sup> at J. d&theta;σ<sup>gb</sup> >ad>C<sup>gb</sup>>gb.

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## 1.0 INTRODUCTION

This 2014 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 2014.

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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 and similarly at other radar sites within FOX-M’s zone.

### 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, 16-Mar-2015  
Time Period Covered: 01 January to 31 December 2014

## 2.0 WATER USE

The water usage from January to December was 15,688.7 cubic meters, which is an average of 43.0 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. Water usage decreased in December because the water line froze on 11 December 2014 and the site started trucking water from the reservoir.

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**Table 2-1 Monthly Raw Water Usage at FOX-M in 2014**

| Month        | Raw water usage in cubic metres (m <sup>3</sup> ) | Company with CC&C of the site |
|--------------|---|-------------------------------|
| January      | 1,423.6   | Nasittuq Corporation          |
| February     | 1,919.8   | Nasittuq Corporation          |
| March        | 1,231.4   | Nasittuq Corporation          |
| April        | 1,396.5   | Nasittuq Corporation          |
| May          | 1,437.5   | Nasittuq Corporation          |
| June         | 1,187.3   | Nasittuq Corporation          |
| July         | 1,400.3   | Nasittuq Corporation          |
| August       | 1,340.7   | RCL                           |
| September    | 1,225.9   | RCL                           |
| October      | 1,323.4   | RCL                           |
| November     | 1,264.7   | RCL                           |
| December     | 537.6   | RCL                           |
| <b>TOTAL</b> | <b>15,688.7</b>                                   |                               |

### **3.0 TREATED SEWAGE DISCHARGE**

The sewage and grey water are both processed through an advanced tertiary wastewater treatment system, *Cycle-let®*. The system was maintained by Nasittuq from 01 January to 31 July 2014, and is now maintained by RCL. Some of the treated water is recycled as urinal/toilet flush water. The remainder is of potable water quality and is discharged at the designated outfall. As noted in Table 3-1, refer to the year-end report for the volume of sewage and grey water treated by the *Cycle-let* system.

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**Table 3-1 Monthly and Annual Volume of Sewage and Grey Water Treated at FOX-M in 2014**

| Month        | Volume of sewage and greywater treated then discharged or recycled in cubic metres (m <sup>3</sup> ) | Company with CC&C of the site |
|--------------|--|-------------------------------|
| January      | 137.5  | Nasittuq Corporation          |
| February     | 130.4  | Nasittuq Corporation          |
| March        | 124.3  | Nasittuq Corporation          |
| April        | 93.5   | Nasittuq Corporation          |
| May          | 104.1  | Nasittuq Corporation          |
| June         | 131.5  | Nasittuq Corporation          |
| July         | 141.8  | Nasittuq Corporation          |
| August       | 111.0  | RCL                           |
| September    | 145.8  | RCL                           |
| October      | 114.7  | RCL                           |
| November     | 94.0   | RCL                           |
| December     | 81.6   | RCL                           |
| <b>Total</b> | <b>1,410.4</b>   |                               |

## 4.0 HAZARDOUS WASTE AND WASTE OIL DISPOSAL

No hazardous waste and waste oil were disposed of in 2014. Therefore Table 4-1 is blank and Annex A for the shipping documents is blank. (Shipping documents include the completed movement documents for waste regulated under the Transportation of Dangerous Goods Regulations (TDGR) and Manifests for non-regulated waste).

**Table 4-1 Hazardous Waste and Waste Oil Sent for Disposal from FOX-M in 2014**

| Site  | Description, TDG shipping name                           | Quantity | Movement Document or Manifest # |
|-------|--|----------|---------------------------------|
| FOX-M | No hazardous waste or waste oil was disposed of in 2014. | 0        | N/A                             |

## 5.0 NON-HAZARDOUS SOLID WASTE DISPOSAL

Non-hazardous domestic solid waste was disposed of through a contract with the Hamlet of Hall Beach and at the local landfill. 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 2014**

| Month                            | Waste Generated (kg) | Company with CC&C of the site |
|----------------------------------|----------------------|-------------------------------|
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| Month        | Waste Generated (kg) | Company with CC&C of the site |
|--------------|----------------------|-------------------------------|
| January      | 2,680                | Nasittuq Corporation          |
| February     | 3,117                | Nasittuq Corporation          |
| March        | 2,870                | Nasittuq Corporation          |
| April        | 2,386                | Nasittuq Corporation          |
| May          | 3,536                | Nasittuq Corporation          |
| June         | 2,988                | Nasittuq Corporation          |
| July         | 3,047                | Nasittuq Corporation          |
| August       | 2,516                | RCL                           |
| September    | 2,835                | RCL                           |
| October      | 2,516                | RCL                           |
| November     | 1,755                | RCL                           |
| December     | 2,270                | RCL                           |
| <b>Total</b> | <b>32,516</b>        |                               |

## 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. The laboratory had to re-run the BOD on the sample taken in April. The reported BOD result was high. It is possible that the rerun impacted the result. BOD results in March and May were well within licence criteria.

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

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.

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## 7.0 SPILLS (UNAUTHORIZED DISCHARGES)

Table 7-1 Outdoor Spills Reported at FOX-M in 2014

| Date,<br>Spill #                     | Product     | Quantity  | Cause and follow-up action   | Location at<br>FOX-M   |
|--------------------------------------|-------------|-----------|--|--|
| 23 May<br>2014,<br>Spill #<br>14-177 | Jet A1 fuel | 20 litres | Site personnel found a gasket on a fuel line had broken due to age and weathering. The spilled fuel was contained by snow and ice. The spilled fuel was cleaned up with absorbent pads, and the contaminated snow was placed in a salvage drum for future disposal at a licensed hazardous waste disposal facility outside of Nunavut. The broken gasket was replaced. | Fuel line<br>between<br>power plant<br>and tanks<br>W22J and<br>W22K |

## 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 2014.

## 9.0 PROGRESSIVE RECLAMATION WORK UNDERTAKEN

None undertaken.

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## 10.0 ACRONYMS

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

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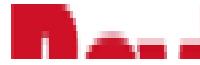
## ANNEX A - FOX-M - HAZARDOUS WASTE AND WASTE OIL DISPOSAL IN 2014

This annex has been left blank as no hazardous waste or waste oil were disposed of in 2014. Therefore there are no shipping documents for Annex A.

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



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

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 2014**

| Date                  | pH  | Parameter                                 |                                 |                               |                   |
|-----------------------|---|---|---------------------------------|-------------------------------|-------------------|
|                       |   | Oil and Grease (Present - P / Absent - A) | Biological Oxygen Demand (mg/L) | Total Suspended Solids (mg/L) | Faecal Coliforms* |
| Maximum Concentration | 6.0 to 9.0 (pH units)   | No visible sheen                          | 120 mg/L                        | 180 mg/L                      | 10,000 CFU/100 mL |
| 30-Jan-14             | 7.91  | A   | 14                              | 3                             | 9                 |
| 28-Feb-14             | 8   | A   | 6                               | <2                            | 6                 |
| 13-Mar-14             | 7.62  | A   | 9                               | 2                             | 6                 |
| 28-Apr-14             | 7.76  | A   | 181                             | 20                            | 101               |
| 19-May-14             | 7.85  | A   | 3                               | <2                            | 3                 |
| 5-Jun-14              | 7.85  | A   | 1                               | <2                            | 1                 |
| 23-Jul-14             | 8.16  | A   | 2                               | 2                             | 2                 |
| Aug-14                | The work order to take this sample mistakenly stated that the date was July 2014. The work order was cancelled in error because the task stated July and was assumed to be left over from a previous contractor |   |                                 |                               |                   |
| 25-Sep-14             | 7.07  | A   | 12                              | <2                            | 12.0              |
| 20-Oct-14             | 7.1   | A   | 1                               | <2                            | 1.0               |
| 8-Dec-14 <sup>1</sup> | 7.76  | A   | 3                               | <2                            | 3.0               |
| 23-Dec-14             | 7.76  | A   | 2                               | <2                            | 2.0               |

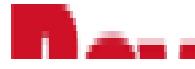
\*Average of the Cyclet 1A, Cyclet 1B, and Cyclet 1C.

<sup>1</sup> No sample was taken in November 2014. This sample was taken to fill the November sampling requirement.

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January 2014 – Page 1 of 2

**EXOVA OTTAWA**

**Certificate of Analysis**

**EXOVA**

Client: Nasituq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
POff:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1401889  
Date Submitted: 2014-02-04  
Date Reported: 2014-02-05  
Project:  
COC #: 173142

| Group        | Analyte          | MRL | Units    | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1085474<br>Sewage<br>2014-01-30<br>Fox-M Cycl 1-A | 1085475<br>Sewage<br>2014-01-30<br>Fox-M Cycl 1-B | 1085476<br>Sewage<br>2014-01-30<br>Fox-M Cycl 1-C |
|--------------|------------------|-----|----------|-----------|--|---|---|---|
| Microbiology | Faecal Coliforms | 0   | cf/100mL |           | 15   | 6   | 9   |   |

Guideline = \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QAQC information available on request.

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

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January 2014 – Page 2 of 2

EXOVA OTTAWA

Certificate of Analysis

Exova 

Client: Nasituq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1401890  
Date Submitted: 2014-02-04  
Date Reported: 2014-02-11  
Project:  
COC #: 173142

| Group             | Analyte                    | MRL  | Units | Guideline |  |
|-------------------|----------------------------|------|-------|-----------|--|
| General Chemistry | pH                         | 1.00 |       | 7.91      |  |
|                   | Total Suspended Solids     | 2    | mg/L  | 3         |  |
| Nutrients         | BOD <sub>5</sub>           | 1    | mg/L  | 14        |  |
| Oil & Grease      | Oil & Grease - Mineral     | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Non-mineral | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Total       | 1    | mg/L  | <1        |  |
| Visible Sheen     | Visible Sheen              |      | P/A   | A         |  |

Guideline = ^ = Guideline Exceedence  
\*\* = Analysis completed at Mississauga, Ontario.  
Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QA/QC information available on request.

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MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable  
Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
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February 2014 – 1 of 2

**EXOVA OTTAWA**

**Certificate of Analysis**

**EXOVA**

Client: Nasitluq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasitluq Corp. (Ottawa)

Report Number: 1403713  
Date Submitted: 2014-03-05  
Date Reported: 2014-03-06  
Project:  
COC #: 173146

| Group        | Analyte          | MRL | Units    | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1090634<br>Sewage<br>-<br>2014-02-28<br>Fox Main Cydet 1 A | 1090635<br>Sewage<br>-<br>2014-02-28<br>Fox Main Cydet 1 B | 1090636<br>Sewage<br>-<br>2014-02-28<br>Fox Main Cydet 1 C |
|--------------|------------------|-----|----------|-----------|--|--|--|--|
| Microbiology | Faecal Coliforms | 0   | ct/100mL | 1         |  | 1  | 3  | 1  |

Guideline – \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

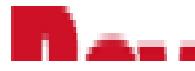
Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QA/QC information available on request.

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EXOVA OTTAWA

Certificate of Analysis

Exova

Client: Nasituuq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituuq Corp. (Ottawa)

Report Number: 1403734  
Date Submitted: 2014-03-05  
Date Reported: 2014-03-11  
Project:  
COC #: 173146

| Group             | Analyte                    | MRL  | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1090680<br>Sewage<br>2014-02-28<br>FOX-MAIN-Cycle Let<br>1 |
|-------------------|----------------------------|------|-------|-----------|--|--|
| General Chemistry | pH                         | 1.00 |       |           |  | 8.01   |
|                   | Total Suspended Solids     | 2    | mg/L  |           |  | <2   |
| Nutrients         | BOD5                       | 1    | mg/L  |           |  | 6  |
| Oil & Grease      | Oil & Grease - Mineral     | 1    | mg/L  |           |  | <1   |
|                   | Oil & Grease - Non-mineral | 1    | mg/L  |           |  | <1   |
| Visible Sheen     | Visible Sheen              |      | P/A   |           |  | A  |

Guideline – \* – Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

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

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

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SOW REF: 16.F.5.d

March 2014 – 1 of 2

EXOVA OTTAWA

Certificate of Analysis

EXOVA

Client: Nasituq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PD#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1404418  
Date Submitted: 2014-03-18  
Date Reported: 2014-03-19  
Project:  
COC #: 173143

| Group        | Analyte          | MRL | Units    | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1092724<br>Sewage<br>2014-03-13<br>Fox Main Cyclt 1A | 1092725<br>Sewage<br>2014-03-13<br>Fox Main Cyclt 1B | 1092726<br>Sewage<br>2014-03-13<br>Fox Main Cyclt 1C |
|--------------|------------------|-----|----------|-----------|--|--|--|--|
| Microbiology | Faecal Coliforms | 0   | cf/100mL |           |  | 2  | 3  | 5  |

Guideline = \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

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

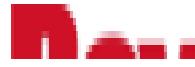
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, 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 2014 – 2 of 2

**EXOVA OTTAWA**

**Certificate of Analysis**

**Exova** 

Client: Nasituq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1404397  
Date Submitted: 2014-03-18  
Date Reported: 2014-03-24  
Project:  
COC #: 173143

| Group             | Analyte                    | MRL  | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|-------------------|----------------------------|------|-------|-----------|--|
| General Chemistry | pH                         | 1.00 |       |           | 1002650<br>Sewage  |
|                   | Total Suspended Solids     | 2    | mg/L  |           | 2014-03-13<br>FOX MAIN CYCLET  |
| Nutrients         | BOD5                       | 1    | mg/L  |           |  |
| Oil & Grease      | Oil & Grease - Mineral     | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Non-mineral | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Total       | 1    | mg/L  | <1        |  |
| Visible Sheen     | Visible Sheen              |      | PTA   | A         |  |

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

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

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April 2014 – 1 of 2

EXOVA OTTAWA

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EXOVA

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160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituuq Corp. (Ottawa)

Report Number: 1408076  
Date Submitted: 2014-05-06  
Date Reported: 2014-05-07  
Project:  
COC #: 173150

| Group        | Analyte          | MRL | Units    | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1101626<br>Sewage<br>2014-04-28<br>Fox-M Cydat 1A | 1101627<br>Sewage<br>2014-04-28<br>Fox-M Cydat 1B | 1101628<br>Sewage<br>2014-04-28<br>Fox-M Cydat 1C |
|--------------|------------------|-----|----------|-----------|--|---|---|---|
| Microbiology | Faecal Coliforms | 0   | cf/100mL |           |  | 0   | 0   | 0   |

Guideline = \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

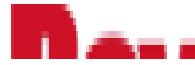
Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, 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 2014 – 2 of 2

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Exova

Client: Naslitoq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Naslitoq Corp. (Ottawa)

Report Number: 1408057  
Date Submitted: 2014-05-05  
Date Reported: 2014-05-20  
Project:  
COC #: 173150

| Group             | Analyte                    | MRL  | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|-------------------|----------------------------|------|-------|-----------|--|
| General Chemistry | pH                         | 1.00 |       |           | 1101590<br>Water   |
|                   | Total Suspended Solids     | 2    | mg/L  |           | 20   |
| Nutrients         | BOD5                       | 1    | mg/L  |           | 181  |
| 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              |      | mg/L  |           | Absent   |

Guideline – \* – Guideline Exceedence

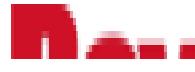
\*\* = Analysis completed at Mississauga, Ontario

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

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

MRL = Method Reporting Limit, 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 2014 2014 – 1 of 2

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160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1409508  
Date Submitted: 2014-05-22  
Date Reported: 2014-05-26  
Project:  
COC #: 173145

| Group        | Analyte          | MRL | Units    | Guideline | Lab ID<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1105307<br>Sewage<br>2014-05-19<br>Fox M Cycl 1A | 1105308<br>Sewage<br>2014-05-19<br>Fox M Cycl 1B | 1105309<br>Sewage<br>2014-05-19<br>Fox M Cycl 1C |
|--------------|------------------|-----|----------|-----------|--|--|--|--|
| Microbiology | Faecal Coliforms | 0   | ct/100mL |           |  | 2  | 1  | 2  |

Guideline = ^ = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

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

MRL = Method Reporting Limit, 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 2014 – Page 2 of 2

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**Exova**

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160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1409529  
Date Submitted: 2014-05-22  
Date Reported: 2014-05-29  
Project: 100025  
COC #: 173145

| Group             | Analyte                    | MRL  | Units | Guideline |  |
|-------------------|----------------------------|------|-------|-----------|--|
| General Chemistry | pH                         | 1.00 |       | 7.85      |  |
|                   | Total Suspended Solids     | 2    | mg/L  | <2        |  |
| Nutrients         | BOD5                       | 1    | mg/L  | 3         |  |
| Oil & Grease      | Oil & Grease - Mineral     | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Non-mineral | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Total       | 1    | mg/L  | <1        |  |
| Visible Sheen     | Visible Sheen              |      | P/A   | A         |  |

Guideline – \* – Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario

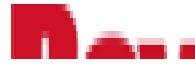
Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QA/QC information available on request.

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Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
= Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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June 2014 – 1 of 2

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160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:   
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1410846  
Date Submitted: 2014-06-09  
Date Reported: 2014-06-10  
Project:   
COC #: 132962

| Group        | Analyte          | MRL | Units    | Guideline | Lab I.D.  | Sample Matrix   | Sample Type   | Sampling Date | Sample I.D. |
|--------------|------------------|-----|----------|-----------|---|---|---|---------------|-------------|
| Microbiology | Faecal Coliforms | 0   | cf/100mL | Water     | 1109238<br>Sewage<br>2014-06-05<br>Fox Main Cyclct 1A | 1109239<br>Sewage<br>2014-06-05<br>Fox Main Cyclct 1B | 1109240<br>Sewage<br>2014-06-05<br>Fox Main Cyclct 1C |               |             |

Guideline – \* – Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario

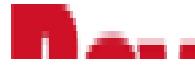
Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QA/QC information available on request.

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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 2014 – 2 of 2

EXOVA OTTAWA

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160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasitluq Corp. (Ottawa)

Report Number: 1410988  
Date Submitted: 2014-06-09  
Date Reported: 2014-06-16  
Project: COC #:  
132962

| Group             | Analyte                    | MRL  | Units | Guideline |      |
|-------------------|----------------------------|------|-------|-----------|------|
| General Chemistry | pH                         | 1.00 |       |           | 7.85 |
|                   | Total Suspended Solids     | 2    | mg/L  |           | <2   |
| Nutrients         | BOD5                       | 1    | mg/L  |           | 1    |
|                   | Oil & Grease - Mineral     | 1    | mg/L  |           | <1   |
|                   | Oil & Grease - Non-mineral | 1    | mg/L  |           | <1   |
| Oil & Grease      | Oil & Grease - Total       | 1    | mg/L  |           | <1   |
|                   | Visible Sheen              |      | P/A   |           | A    |

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\*\* = Analysis completed at Mississauga, Ontario.  
Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, 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 2014 – 1 of 2

**EXOVA ENVIRONMENTAL ONTARIO**

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**EXOVA**

Client: Nasittuq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasittuq Corp. (Ottawa)

Report Number: 1415646  
Date Submitted: 2014-07-26  
Date Reported: 2014-07-29  
Project:  
COC #: 173147

| Group        | Analyte          | MRL | Units    | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1122326<br>Sewage<br>2014-07-23<br>Fox - M - Cyclst 1A | 1122327<br>Sewage<br>2014-07-23<br>Fox - M - Cyclst 1B | 1122328<br>Sewage<br>2014-07-23<br>Fox - M - Cyclst 1C |
|--------------|------------------|-----|----------|-----------|--|--|--|--|
| Microbiology | Faecal Coliforms | 0   | cf/100mL |           | 3  | 1  | 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.

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 2014 – 2 of 2

EXOVA ENVIRONMENTAL ONTARIO

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Exova

Client: Nasituq Corp. (Ottawa)  
100 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1415653  
Date Submitted: 2014-07-28  
Date Reported: 2014-08-05  
Project:  
COC #: 173147

| Group             | Analyte                    | MRL  | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|-------------------|----------------------------|------|-------|-----------|--|
| General Chemistry | pH                         | 1.00 |       |           | 8.16   |
|                   | Total Suspended Solids     | 2    | mg/L  |           | 2  |
| Nutrients         | BOD5                       | 1    | mg/L  |           | 2  |
| Oil & Grease      | Oil & Grease - Mineral     | 1    | mg/L  |           | <1   |
|                   | Oil & Grease - Non-mineral | 1    | mg/L  |           | <1   |
|                   | Oil & Grease - Total       | 1    | mg/L  |           | <1   |
| Visible Sheen     | Visible Sheen              |      | P/A   |           | A  |

Guideline – \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

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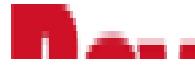
August 2014 – The work order to take this sample mistakenly stated that the date was July 2014. The work order was cancelled in error because the task stated July and was assumed to be left over from a previous contractor

Such omissions will not occur in the future.

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SOW REF: 16.F.5.d

September 2014 – 1 of 2

**EXOVA ENVIRONMENTAL ONTARIO**

**Certificate of Analysis**

**Exova**

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

Report Number: 1422431  
Date Submitted: 2014-10-20  
Date Reported: 2014-10-21  
Project: 140348  
COC #: 173149

| Group        | Analyte          | MRL | Units    | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1140632<br>Sewage<br>2014-09-25<br>Fox Main Cyclelet 1A | 1140633<br>Sewage<br>2014-09-25<br>Fox Main Cyclelet 1B | 1140634<br>Sewage<br>2014-09-25<br>Fox Main Cyclelet 1C |
|--------------|------------------|-----|----------|-----------|--|---|---|---|
| Microbiology | Faecal Coliforms | 0   | ct/100mL |           | 0  | 0   | 0   |   |

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

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Revision No. 1

Effective Date: 16-Mar-2015

Page: 25 - 44

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September 2014 – 2 of 2

**EXOVA ENVIRONMENTAL ONTARIO**

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**Exova**

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

Report Number: 1500623  
Date Submitted: 2015-01-13  
Date Reported: 2015-01-20  
Project: 140340  
COC #: 177717

| Group             | Analyte                    | MRL  | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|-------------------|----------------------------|------|-------|-----------|--|
| General Chemistry | pH                         | 1.00 |       | 7.76      |  |
|                   | Total Suspended Solids     | 2    | mg/L  | <2        |  |
| Nutrients         | BOD5                       | 1    | mg/L  | 2         |  |
| Oil & Grease      | Oil & Grease - Mineral     | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Non-mineral | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Total       | 1    | mg/L  | <1        |  |
| Visible Sheen     | Visible Sheen              |      | P/A   | A         |  |

**Guideline =** \* = Guideline Exceedence  
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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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October 2014 – 1 of 2

**EXOVA ENVIRONMENTAL ONTARIO**

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**Exova**

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

Report Number: 1423749  
Date Submitted: 2014-11-05  
Date Reported: 2014-11-06  
Project: COC #:  
173148

| Group        | Analyte          | MRL | Units    | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1144715<br>Sewage<br>2014-10-20<br>Cyclot Fox-M A | 1144716<br>Sewage<br>2014-10-20<br>Cyclot Fox-M B | 1144717<br>Sewage<br>2014-10-20<br>Cyclot Fox-M C |
|--------------|------------------|-----|----------|-----------|--|---|---|---|
| Microbiology | Faecal Coliforms | 0   | ct/100mL |           |  | 0   | 0   | 0   |

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

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

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October 2014 – 2 of 2

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Exova

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

Report Number: 1423732  
Date Submitted: 2014-11-05  
Date Reported: 2014-11-11  
Project: 140340  
COC #: 173148

| Group             | Analyte                    | MRL  | Units | Guideline |
|-------------------|----------------------------|------|-------|-----------|
| General Chemistry | pH                         | 1.00 |       | 7.10      |
|                   | Total Suspended Solids     | 2    | mg/L  | <2        |
| Nutrients         | BOD5                       | 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        |
| 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).  
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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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November 2014 – 1 of 2

No sample was taken in November 2014. This sample was taken to fill the November sampling requirement.

**EXOVA ENVIRONMENTAL ONTARIO**

**Certificate of Analysis**

**Exova** 

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

Report Number: 1427054  
Date Submitted: 2014-12-30  
Date Reported: 2015-01-02  
Project: 140340  
COC #: 177716

| Group        | Analyte          | MRL | Units    | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1153971<br>Sewage<br>2014-12-08<br>Cyclelet Fox-M - A | 1153972<br>Sewage<br>2014-12-08<br>Cyclelet Fox-M - B | 1153973<br>Sewage<br>2014-12-08<br>Cyclelet Fox-M - C |
|--------------|------------------|-----|----------|-----------|--|---|---|---|
| Microbiology | Faecal Coliforms | 0   | ct/100mL |           | 0  | 0   | 0   |   |

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

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

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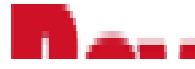
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November 2014 – 2 of 2

**EXOVA ENVIRONMENTAL ONTARIO**

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**EXOVA**

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

Report Number: 1427076  
Date Submitted: 2014-12-30  
Date Reported: 2015-01-05  
Project: 140340  
COC #: 177716

| Group             | Analyte                    | MRL  | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|-------------------|----------------------------|------|-------|-----------|--|
| General Chemistry | pH                         | 1.00 |       | 7.76      |  |
|                   | Total Suspended Solids     | 2    | mg/L  | <2        |  |
| Nutrients         | BOD5                       | 1    | mg/L  | 3         |  |
| Oil & Grease      | Oil & Grease - Mineral     | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Non-mineral | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Total       | 1    | mg/L  | <1        |  |
| Visible Sheen     | Visible Sheen              |      | P/A   | A         |  |

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December 2014 – 1 of 2

**EXOVA ENVIRONMENTAL ONTARIO**

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

Report Number: 1500588  
Date Submitted: 2015-01-13  
Date Reported: 2015-01-14  
Project: 140340  
COC #: 177717

|              |                  |     |          | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. | 1155384<br>Sewage<br>2014-12-23<br>Cyclet Fox-M A | 1155385<br>Sewage<br>2014-12-23<br>Cyclet Fox-M B | 1155386<br>Sewage<br>2014-12-23<br>Cyclet Fox-M C |
|--------------|------------------|-----|----------|--|---|---|---|
| Group        | Analyte          | MRL | Units    | Guideline  | 0   | 0   | 2   |
| Microbiology | Faecal Coliforms | 0   | ct/100mL |  |   |   |   |

Guideline = \* = Guideline Exceedence

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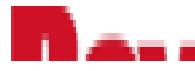
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400 Cooper St., Suite 3000  
Ottawa, ON  
K2P 2H8  
Attention: Mr. Will Wyman  
PO#:  
Invoice to: Canadian Base Operators

Report Number: 1500623  
Date Submitted: 2015-01-13  
Date Reported: 2015-01-20  
Project: 140340  
COC #: 177717

| Group             | Analyte                    | MRL  | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|-------------------|----------------------------|------|-------|-----------|--|
| General Chemistry | pH                         | 1.00 |       | 7.76      |  |
|                   | Total Suspended Solids     | 2    | mg/L  | <2        |  |
| Nutrients         | BOD5                       | 1    | mg/L  | 2         |  |
| Oil & Grease      | Oil & Grease - Mineral     | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Non-mineral | 1    | mg/L  | <1        |  |
|                   | Oil & Grease - Total       | 1    | mg/L  | <1        |  |
| Visible Sheen     | Visible Sheen              |      | P/A   | A         |  |

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

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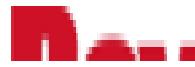
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## ANNEX D - FOX-M - LOCATION OF BERMED FUEL STORAGE FACILITIES WITH CO-ORDINATES

| Licence                     | Location   | Monitoring Station #<br>(Final discharge point of<br>bermed fuel storage<br>facility) | Berm's location<br>on-site                                  | Berm's<br>co-ordinates         |
|-----------------------------|--|---|---|--------------------------------|
| 3BC-<br>FOH0919<br>Type "B" | FOX-M North<br>Warning<br>System Site,<br>Hall Beach,<br>Melville<br>Peninsula,<br>Qikiqtani<br>Region,<br>Nunavut | FOH-3   | Summit (near PGS<br>building), berm of<br>tank W22A         | 68° 45' 42" N<br>81° 13' 24" W |
|                             |  |   | Summit (near PGS<br>building), berm of<br>tank W22B         | 68° 45' 43" N<br>81° 13' 26" W |
|                             |  |   | Airfield (near<br>hangar) berm of<br>tanks W20D and<br>W20E | 68° 46' 16" N<br>81° 13' 59" W |
|                             |  |   | Beach, Berm of<br>tank W20F                                 | 68° 46' 24" N<br>81° 12' 47" W |
|                             |  |   | Beach, Berm of<br>tank W20B                                 | 68° 46' 24" N<br>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 2014

| Site<br>Berm<br>Date           | Maximum<br>Concentration<br>of any Grab<br>Sample (µg/L) | FOX-M | FOX-M | FOX-M | FOX-M | FOX-M             |
|--------------------------------|--|-------|-------|-------|-------|-------------------|
|                                |  | W22A  | W22B  | W20B  | W20F  | W20D<br>&<br>W20E |
| pH                             | 6 to 9   | 7.64  | 7.74  | 7.67  | 7.59  | 7.6               |
| Oil and Grease<br>(ug/L)       | 5000   | <1000 | <1000 | <1000 | <1000 | <1000             |
| Arsenic (total)<br>(ug/L)      | 100  | <20   | <20   | <20   | <20   | <20               |
| Cadmium (dissolved)<br>(ug/L)  | 10   | 0.1   | <0.1  | <0.1  | <0.1  | <0.1              |
| Chromium (dissolved)<br>(ug/L) | 100  | <1    | <1    | <1    | <1    | <1                |
| Cobalt (dissolved)<br>(ug/L)   | 50   | <0.2  | <0.2  | <0.2  | <0.2  | <0.2              |
| Copper (dissolved)<br>(ug/L)   | 200  | 2     | 3     | 3     | 5     | 2                 |
| Lead (dissolved)<br>(ug/L)     | 50   | <1    | <1    | <1    | <1    | <1                |
| Mercury (total)<br>(ug/L)      | 0.6  | <0.1  | <0.1  | <0.1  | <0.1  | <0.1              |
| Nickel (dissolved)<br>(ug/L)   | 200  | <5    | <5    | <5    | <5    | <5                |
| PCB (total)<br>(ug/L)          | 1000   | <0.1  | <0.1  | <0.1  | <0.1  | <0.1              |
| Phenols<br>(ug/L)              | 20   | <1    | <1    | <1    | <1    | <1                |
| Zinc (total)<br>(ug/L)         | 500  | <40   | <40   | 110   | <40   | <40               |
| Benzene<br>(ug/L)              | 370  | <0.5  | <0.5  | <0.5  | <0.5  | <0.5              |
| Toluene<br>(ug/L)              | 2  | <0.5  | <0.5  | <0.5  | <0.5  | <0.5              |
| Ethyl benzene<br>(ug/L)        | 90   | <0.5  | <0.5  | <0.5  | <0.5  | <0.5              |

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31 May 2014

Summit (near PGS building), Berm of tank W22A

Page 1 of 2

**EXOVA OTTAWA**

**Certificate of Analysis**

**Exova**

Client: Nasituq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1410874  
Date Submitted: 2014-06-05  
Date Reported: 2014-06-10  
Project: COC #:  
169313

| Group  | Analyte    | MRL    | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|--------|------------|--------|-------|-----------|--|
| Metals | Cd         | 0.0001 | mg/L  |           | 1108844<br>Water<br>-  |
|        | 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   |
| Others | Filtration |        |       |           | Yes  |

Guideline = \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

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

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

MRL = Method Reporting Limit, 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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31 May 2014

Summit (near PGS building), Berm of tank W22A

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EXOVA OTTAWA

Certificate of Analysis

Exova

Client: Nasituq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#: \_\_\_\_\_  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1410633  
Date Submitted: 2014-06-05  
Date Reported: 2014-06-10  
Project: COC #. 169313

| Group               | Analyte                          | MRL    | Units | Guideline |         |
|---------------------|----------------------------------|--------|-------|-----------|---------|
| General Chemistry   | pH                               | 1.00   |       |           | 7.64    |
| 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   |
| Nutrients           | Phenols                          | 0.001  | mg/L  |           | <0.001  |
| Oil & Grease        | Oil & Grease - Total             | 1      | mg/L  |           | <1      |
| PCBs                | Polychlorinated Biphenyls (PCBs) | 0.1    | ug/L  |           | <0.1    |
| 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      | %     |           | 97      |

Guideline = \* = Guideline Exceedence

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

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Summit (near PGS building), Berm of tank W22B

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160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituuq Corp. (Ottawa)

Report Number: 1410672  
Date Submitted: 2014-06-05  
Date Reported: 2014-06-10  
Project: COC #:  
173684

| Group  | Analyte    | MRL    | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|--------|------------|--------|-------|-----------|--|
| Metals | Cd         | 0.0001 | mg/L  | <0.0001   | 1108842<br>Water<br>2014-05-31<br>FOX-M W22B                             |
|        | 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    |  |
| Others | Filtration |        |       | Yes       |  |

Guideline = \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

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

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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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160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1410632  
Date Submitted: 2014-06-05  
Date Reported: 2014-06-10  
Project:  
COC #: 173684

| Group               | Analyte                          | MRL    | Units | Guideline |         |
|---------------------|----------------------------------|--------|-------|-----------|---------|
| General Chemistry   | pH                               | 1.00   |       |           | 7.74    |
| 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   |
| Nutrients           | Phenols                          | 0.001  | mg/L  |           | <0.001  |
| Oil & Grease        | Oil & Grease - Total             | 1      | mg/L  |           | <1      |
| PCBs                | Polychlorinated Biphenyls (PCBs) | 0.1    | ug/L  |           | <0.1    |
| 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      | %     |           | 07      |

Guideline = \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

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

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

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31 May 2014

Beach, Berm of tank W20B

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EXOVA OTTAWA

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160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituuq Corp. (Ottawa)

Report Number: 1410071  
Date Submitted: 2014-06-05  
Date Reported: 2014-06-10  
Project:  
COC #: 173683

| Group  | Analyte    | MRL    | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|--------|------------|--------|-------|-----------|--|
| Metals | Cd         | 0.0001 | mg/L  |           | 1108841<br>Water<br>-<br>2014-05-31<br>FOX-M W20B                        |
|        | 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   |
| Others | Filtration |        |       |           | Yes  |

Guideline = \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

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

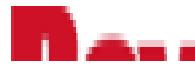
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MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable  
Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
= Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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Beach, Berm of tank W20B

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100 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1410631  
Date Submitted: 2014-05-05  
Date Reported: 2014-06-10  
Project: COC #:  
173683

| Group               | Analyte                          | MRL    | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|---------------------|----------------------------------|--------|-------|-----------|--|
| General Chemistry   | pH                               | 1.00   |       |           | 1108778<br>Water   |
| 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  | 0.11      |  |
| Nutrients           | Phenols                          | 0.001  | mg/L  | <0.001    |  |
| Oil & Grease        | Oil & Grease - Total             | 1      | mg/L  | <1        |  |
| PCBs                | Polychlorinated Biphenyls (PCBs) | 0.1    | ug/L  | <0.1      |  |
|                     | Benzene                          | 0.5    | ug/L  | <0.5      |  |
|                     | Ethylbenzene                     | 0.5    | ug/L  | <0.5      |  |
| VOCs                | Toluene                          | 0.5    | ug/L  | <0.5      |  |
|                     | Toluene-d8                       | 0      | %     | 96        |  |
| VOCs Surrogates (%) |                                  |        |       |           |  |

Guideline - \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

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

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

MRL = Method Reporting Limit, 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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SOW REF: 16.F.5.d

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Beach, Berm of tank W20F  
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EXOVA OTTAWA

Certificate of Analysis

Exova

Client: Nasituq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1410067  
Date Submitted: 2014-06-05  
Date Reported: 2014-06-10  
Project:  
COC #: 173688

| Group  | Analyte    | MRL    | Units | Guideline | Lab I.D. | Sample Matrix | Sample Type | Sampling Date | Sample I.D. |
|--------|------------|--------|-------|-----------|----------|---------------|-------------|---------------|-------------|
| Metals | Cd         | 0.0001 | mg/L  |           | <0.0001  |               |             |               |             |
|        | Co         | 0.0002 | mg/L  |           | <0.0002  |               |             |               |             |
|        | Cr         | 0.001  | mg/L  |           | <0.001   |               |             |               |             |
|        | Cu         | 0.001  | mg/L  |           | 0.005    |               |             |               |             |
|        | Ni         | 0.005  | mg/L  |           | <0.005   |               |             |               |             |
|        | Pb         | 0.001  | mg/L  |           | <0.001   |               |             |               |             |
| Others | Filtration |        |       |           |          |               |             |               | Yes         |

Guideline = " = Guideline Exceedence  
\*\* = Analysis completed at Mississauga, Ontario.  
Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QA/QC Information available on request.

MRL = Method Reporting Limit, 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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SOW REF: 16.F.5.d

31 May 2014  
Beach, Berm of tank W20F  
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**EXOVA OTTAWA**

**Certificate of Analysis**

**Exova**

Client: Naslugu Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Naslugu Corp. (Ottawa)

Report Number: 1410529  
Date Submitted: 2014-06-05  
Date Reported: 2014-06-10  
Project:  
COC #: 173688

| Group               | Analyte                          | MRL    | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|---------------------|----------------------------------|--------|-------|-----------|--|
| General Chemistry   | pH                               | 1.00   |       | 7.59      | 1108776<br>Water   |
| 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     |  |
| Nutrients           | Phenols                          | 0.001  | mg/L  | <0.001    |  |
| Oil & Grease        | Oil & Grease - Total             | 1      | mg/L  | <1        |  |
| PCBs                | Polychlorinated Biphenyls (PCBs) | 0.1    | ug/L  | <0.1      |  |
| VOCs                | Benzene                          | 0.5    | ug/L  | <0.5      |  |
|                     | Ethylbenzene                     | 0.5    | ug/L  | <0.5      |  |
|                     | Toluene                          | 0.5    | ug/L  | <0.5      |  |
| VOCs Surrogates (%) | Toluene-d8                       | 0      | %     | 96        |  |

Guideline = \* = Guideline Exceedence  
\*\* = Analysis completed at Mississauga, Ontario.  
Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, 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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SOW REF: 16.F.5.d

31 May 2014  
Airfield (near hangar), Berm of tanks W20D and W20E  
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**EXOVA OTTAWA**

**Certificate of Analysis**

**Exova**

Client: Nasituq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1410669  
Date Submitted: 2014-05-05  
Date Reported: 2014-05-10  
Project:  
COC #: 173682

| 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    |     |
| Others | Filtration |        |       |           | Yes |

Guideline = \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

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

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

MRL = Method Reporting Limit, 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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SOW REF: 16.F.5.d

31 May 2014  
 Airfield (near hangar), Berm of tanks W20D and W20E  
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EXOVA OTTAWA

Certificate of Analysis


Client: Nasituq Corp. (Ottawa)  
 160 Elgin Street, Suite 400  
 Ottawa, ON  
 K2P 2C4  
 Attention: Ms. Barb Thomson  
 PO#:  
 Invoice to: Nasituq Corp. (Ottawa)

Report Number: 1410630  
 Date Submitted: 2014-06-05  
 Date Reported: 2014-06-10  
 Project:  
 COC #: 173682

| Group               | Analyte                          | MRL    | Units | Guideline | Lab I.D.<br>Sample Matrix<br>Sample Type<br>Sampling Date<br>Sample I.D. |
|---------------------|----------------------------------|--------|-------|-----------|--|
| General Chemistry   | pH                               | 1.00   | mg/L  | 7.00      | 1108777<br>Water   |
| 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     |  |
| Nutrients           | Phenols                          | 0.001  | mg/L  | <0.001    |  |
| Oil & Grease        | Oil & Grease - Total             | 1      | mg/L  | <1        |  |
| PCBs                | Polychlorinated Biphenyls (PCBs) | 0.1    | ug/L  | <0.1      |  |
| 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      | %     | 97        |  |

Guideline – \* = Guideline Exceedence  
 \*\* = Analysis completed at Mississauga, Ontario  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

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

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