

Appendix E4

2015 Incinerator Stack Testing Report

Report Stack sampling tests



Stack sampling tests Outlet of the incinerator

Presented to: Agnico-Eagle Mines Ltd.

Our Reference: R15-046R01 (15-076-337409)

Date: July 27, 2015

Copy: 1 of 1

Version No.: 1

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Revision History

Version No:	Date of ré – issue:
Reviewed by:	Approved by:
Reason for the revision:	

Version No:	Date of ré – issue:
Reviewed by:	Approved by:
Reason for the revision:	

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1 SUMMARY

Exova Canada Inc. was requested by **Agnico-Eagle Mines Ltd. – Meadowbank Division** to sample atmospheric emissions at the outlet of the incinerator for its plant located in Baker Lake, Nunavut at the following address.

Agnico-Eagle Mines Ltd. - Meadowbank Division

P.O. Box 540,
Baker Lake, Nunavut
X0C 0A0

Contact: Mr. Jeffrey Pratt, Environmental coordinator
Telephone: (819) 759-3555, ext. 6728
Cell: (819) 856-1475
Email: Jeffrey.pratt@agnico-eagle.com

1.1 Purposes of the study

The tests were done to demonstrate the performance of the incinerator to meet the standards for mercury (Hg) and dioxins and furans (PCDD/F).

Field testing was carried out from June 19 to June 21, 2015 by a team of two technicians. Stack gas properties such as velocity, volumetric flow rates, temperature, moisture content, molecular weight and pressure were all measured concurrently to stack sampling. Three runs were performed for each contaminant. The test matrix is shown in the following table.

Table 1.1-1 – Overall Test Matrix

Pollutants	Sampling methods
Particulate matter (PM)	EPS 1/RM/8
Anion - Hydrogen chloride (HCl)	EPS 1/RM/1
Metals	EPA 29
SVOC (PCDD/F)	EPS 1/RM/2

The list of metals includes Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Hg, Mo, Ni, P, K, Se, Si, Ag, Na, Sr, Te, Tl, Sn, Ti, U, V, Zn.

The manual sampling procedure for the particulate matter / anion / metals (PAM) test and the semi-volatile organic compounds (SVOC) test were as shown in table 1.1-2 hereafter.

Table 1.1-2 – Sampling procedures

Sources	# of sampling points (total)	# of sampling points (per traverse)	Sampling time per point (min.)	Total sampling time (min)	Notes
PAM # 1, 2, 3	36	18	5	180	Isokinetic adjustments each 5 minutes
SVOC # 1, 2, 3	36	18	5	180	Isokinetic adjustments each 5 minutes

1.2 Summary of results

All the tests results are summarized in the summary tables appearing below and on the next page and represent the average of three runs. Complete results of the sampling program are presented in section 5.0 of this report.

A comprehensive internal Quality Assurance/Quality Control (QA/QC) plan was designed and implemented by Exova regarding the gaseous emissions. The quality of the sampling data and results is good for all measurements. All the data are consistent and reliable.

The operating conditions were maintained stable throughout each day of the tests.

All computer print-outs, field data, analytical results and calibration reports are presented in appendix # 1.

For this project, the applicable standards are shown below with the tests results. The applicable standard for dioxins and furans (PCDD/F) was met during each test. The applicable standard for mercury (Hg) was met during each test as well.

Table 1.2-1 – Summary of results

Contaminants	Average test results	Standards
Mercury (Hg)	< 0.22 µg / Rm ³ @ 11 % v/v O ₂	20 µg / Rm ³ @ 11 % v/v O ₂
Dioxins and furans (PCDD/F)	21.0 pg TEQ / Rm ³ @ 11 % v/v O ₂	80 pg TEQ / Rm ³ @ 11 % v/v O ₂

R: Reference conditions, 25 °C, 101.3 kPa, dry basis.

Table 1.2-2 – Summary of results (Cont'd)

Parameters		PAM tests	SVOC tests
Concentrations			
PM	(mg/Rm ³)	62.3	---
HCl	(mg/Rm ³)	12.5	---
Hg	(µg/Rm ³)	< 0.12	---
PCDD/F	(pg/Rm ³ TEQ)	---	11.7
Emission rates			
PM	(kg/h)	0.431	---
HCl	(kg/h)	0.086	---
Hg	(mg/h)	< 0.792	---
PCDD/F	(ng/h TEQ)	---	77.1
Stack gas properties			
Velocity	(m/s)	8.1	7.5
Actual flow rate	(m ³ /h)	21465	19754
Reference flow rate	(Rm ³ /h)	6920	6554
Temperature	(°C)	595	575
Moisture	(% v/v, wet basis)	4.8	4.3
Static pressure	(inch H ₂ O)	- 0.10	- 0.10
O ₂	(% v/v, dry basis)	15.59	15.59
CO ₂	(% v/v, dry basis)	3.89	3.89
CO	(ppmv, dry basis)	22.8	22.8
Average isokineticity (%)		100.2	99.6

R : Reference conditions, 25 °C, 101.3 kPa and dry basis.

2 INTRODUCTION

Exova Canada Inc. was requested by **Agnico-Eagle Mines Ltd. – Meadowbank Division** to sample the atmospheric emissions at the outlet of an incinerator for its plant located in Baker Lake, Nunavut.

The report describes the purposes of the study, the field work schedule, the sampling location and the sampling methods employed. All the results are summarized in table form. All field data, analytical results and calibration reports are appended.

2.1 Objective and test matrix

A comprehensive stack testing program was adopted by Exova to determine qualitatively and quantitatively the contents of the stack emissions. Table # 2.1-1 shows the parameters measured during the test program. Three runs were performed for each contaminant during the sampling program.

Table 2.1-1 – Overall Test Matrix

Pollutants	Sampling methods
Particulate matter (PM)	EPS 1/RM/8
Anion - Hydrogen chloride (HCl)	EPS 1/RM/1
Metals	EPA 29
SVOC (PCDD/F)	EPS 1/RM/2

The list of metals includes Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Hg, Mo, Ni, P, K, Se, Si, Ag, Na, Sr, Te, Tl, Sn, Ti, U, V, Zn.

2.2 Schedule of test work

The sampling program was carried out from June 19 to June 21, 2015 by a team of two technicians. Table # 2.2-1 appearing in this section shows the test schedule.

Table 2.2-1 – Test schedule

Source	Date	Time	Tests
Outlet of the incinerator	June 19, 2015	14:33 – 17:38	PAM # 1
	June 19, 2015	14:33 – 17:33	SVOC # 1
	June 20, 2015	12:55 – 16:00	PAM # 2
	June 20, 2015	12:55 – 15:55	SVOC # 2
	June 21, 2015	09:30 – 12:35	PAM # 3
	June 21, 2015	09:30 – 12:30	SVOC # 3

2.3 Project personnel

The following is a list of the direct contributors to this test program.

Table 2.3-1 – Key personnel involved in the project

Name	Experience and responsibilities
------	---------------------------------

Agnico-Eagle Mines Ltd.

Mr. Jeffrey Pratt – Environmental coordinator

- Project coordinator.

Exova Canada Inc.

Mr. Steven Saake, Technician

- PAM sampling.

Mr. Pierre-Luc Giguère, Technician

- SVOC sampling.

Mr. Christian St-Pierre, Chemist

- Analyses of PM samples.

Mr. Geneviève Sévigny, Chemist

- Analyses of HCl and metals samples.

Mr. Pierre Duguay, P.Eng. – Supervisor

- Report writing.

Mr. Claude Bélanger, Chemist – Operations manager

- Report verification.

Agat Laboratories

Mr. Philippe Morneau – Chemist

- Analyses of SVOC samples.

2.4 Process operating conditions

Process operating conditions of the incinerator were under Agnico-Eagle's responsibility. The operating conditions were maintained stable throughout each day of the test program.

2.5 Applicable standards

For this project, the applicable standards are shown below.

Table 2.5-1 – Applicable standards

Contaminants	Standards
Mercury (Hg)	20 µg / Rm ³ @ 11 % v/v O ₂
Dioxins and furans (PCDD/F)	80 pg TEQ / Rm ³ @ 11 % v/v O ₂

R: Reference conditions, 25 °C, 101.3 kPa, dry basis.

3 METHODS

3.1 Sampling methods

The following sections give more details on the stack sampling methods used during the test program and their application.

Table 3.1-1 – Sampling methods

Parameters	Methods	Sampling duration (min.)
Manual sampling methods		
Temperature	Thermometer or thermocouple	Ponctual
Gas flow	EPS 1/RM/8, method B – Environment Canada	Ponctual
O ₂ , CO ₂ , CO	EPS 1/RM/8, method C – Environment Canada	Ponctual
Moisture content	EPS 1/RM/8, method D – Environment Canada	Ponctual
Particulate matter (PM)	EPS 1/RM/8, method E – Environment Canada	180
Anions (HCl)	EPS 1/RM/1 – Environment Canada	
Metals	Method 29 - USEPA	
SVOC	EPS 1/RM/2 – Environment Canada	180

3.2 Sampling acceptance criteria

Isokinetic sampling means that the linear velocity of the stack gases entering the nozzle of the sampling probe is equal to the stack gas velocity at the sampling point. Acceptance criteria for a sampling run related to the reference methods that are used are as in the following table.

Table 3.2-1 – Sampling validity criteria

Parameters / Methods	Acceptance criteria
PM / Anion / Metals / SPE 1/RM/8 – Environment Canada & 29 - USEPA	
	➤ Isokinetic rate comprised between 90 % and 110 % ➤ Less than 10% of the sampled points out of the 90 % to 110 % range ➤ Minimum sampling duration : 120 minutes ➤ Minimum sampled volume : 2.80 Rm³
SVOC / SPE 1/RM/2 – Environment Canada	
	➤ Isokinetic rate comprised between 90 % and 110 % ➤ Less than 10% of the sampled points out of the 90 % to 110 % range ➤ Minimum sampling duration : 180 minutes ➤ Minimum sampled volume : 3.00 Rm³

3.3 Particulate matter (PM), hydrogen chloride and metals

Particulate matter (PM), hydrogen chloride (HCl) and metals were sampled in accordance with the requirements of Environment Canada EPS 1/RM/8 sampling method entitled: "Reference methods for source testing: measurement of releases of particulate from stationary sources". This method was combined with Environment Canada EPS 1/RM/1 sampling method entitled: "Reference methods for source testing: measurement of releases of hydrogen chloride from stationary sources" and USEPA method 29 entitled "Metals emissions from stationary sources" in order to allow for anion and metals sampling. Sampling lasted 180 minutes and a minimal volume of at least 2.80 m³ was sampled for each run. Three PM / HCl / metals tests were conducted simultaneously to the SVOC tests during each run.

Particulate matter (PM), anion (HCl), and metals (including mercury) are sampled isokinetically using a single sampling train. This is recognized as the standard method for obtaining representative samples of particulate matter.

Two complete sampling trains were prepared for this project and were transported to the worksite. Sampling nozzles, pitot tubes, dry gas meters and orifice flow meters were calibrated in accordance with the Environment Canada testing code. A standard Method 5 sampling module was used, with a 5 foot probe with a glass liner. The sampling train was as follows.

Table 3.3-1 – Main components of the sampling system – PM / HCl / metals

Components	Description
<u>Sampling probe</u>	
➤ A stainless steel nozzle of a precisely measured diameter to allow isokinetic sampling ; ➤ a stainless steel water-cooled probe with a heated glass liner to avoid moisture condensation ; ➤ this probe is fastened to an "S" type Pitot tube for gas velocity measurement and to a thermocouple for temperature measurement.	
<u>Sampling train</u>	
➤ A 0.3 µm porosity pre-weighted quartz filter mounted on an accurate holder and placed in a heated oven to avoid moisture condensation ; ➤ eight impingers placed in series and containing : ➤ # 1 and # 2: 100 ml demineralized water ; ➤ # 3 and # 4: 100 ml HNO₃ (5%) / H₂O₂ (10%) solution ; ➤ # 5 : empty ; ➤ # 6 and # 7 : 100 ml KMnO₄ (4%) / H₂SO₄ (10%) solution ; ➤ # 8: 200 g silica gel ; ➤ the impingers are placed in an ice bath to condense all the flue gas moisture.	
<u>Control unit</u>	
➤ A diaphragm leak free vacuum pump ; ➤ a dry gas meter ; ➤ an orifice flow meter ; ➤ probe and oven temperature controllers ; ➤ temperature display (stack, gas meter, impingers, resin).	

At the end of each sampling run the sampling train was brought back to the field laboratory to process with sample recovery. The procedure followed for sample recovery is as in the following table.

Table 3.3-2 – Sample recovery – PM / HCl / metals

Components	Description
<u>Nozzle and probe</u>	➤ The nozzle and probe are rinsed and brushed with acetone ; ➤ the rinses are kept in polyethylene with a Teflon lid ; ➤ the nozzle and probe are rinsed and brushed with the HNO₃ 0.1 N solution ; ➤ the rinses are kept in another polyethylene container with a Teflon lid.
<u>Filter</u>	➤ The filter is placed in a plastic petri dish ; ➤ the pieces of the filter stuck to the rubber are carefully replaced with the filter.
<u>Impingers # 1 and # 2</u>	➤ The volume of solution is measured for moisture content determination ; ➤ the solution is transferred in a polyethylene container with a Teflon lid ; ➤ the glassware is rinsed with demineralized water ; ➤ the rinses are added to the same container in which the impingers solution have been placed ; ➤ the solution is acidified.
<u>Impingers # 3 and # 4</u>	➤ The volume of the solution is measured for moisture content determination ; ➤ the solution is transferred in a polyethylene container with a Teflon lid ; ➤ the glassware is rinsed with the HNO₃ solution ; ➤ the rinses are added to the same container in which the impingers solution have been placed ; ➤ the total volume of the solution is noted.
<u>Impingers # 5, # 6 and # 7</u>	➤ The volume of the solution is measured for moisture content determination ; ➤ the solution is transferred in an amber glass container with a Teflon lid ; ➤ the glassware is rinsed with the acidified permanganate solution ; ➤ the rinses are added to the same container in which the impingers solution have been placed ; ➤ the total volume of the solution is noted.
<u>Impinger # 8</u>	➤ The silica gel is weighted in order to determine the moisture content.

Analyses of the different components of the sampling train were done as in the following table.

Exova performed the analyses for particulate matter on the probe wash and on the filter. Exova was responsible as well for the metals analyses.

Table 3.3-3 – Samples analyses – PM / metals

Components	Description
<u>Nozzle and probe</u>	
➤ Washing of the nozzle and probe are evaporated to dryness ; ➤ The residue's weight is noted constitutes one part of the particulate matter.	
<u>Filter</u>	
➤ The filter is placed in a dessiccator for a period of 24 hours ; ➤ the filter is weighted and the weight is noted; ➤ the residue constitutes another part of the particulate matter.	
<u>Particulate matter and HNO₃ 0.1 N washings of probe-nozzle and filter holder front half</u>	
➤ particulate matter are combined with the HNO₃ washings for digestion and analysed for metals.	
<u>Impingers # 1 and # 2</u>	
➤ Part of the acidified solution is taken and analysed for HCl and metals content.	
<u>Impingers # 3 and # 4</u>	
➤ Part of the HNO₃ solution is taken and analysed for metals content.	
<u>Impingers # 5, # 6 and # 7</u>	
➤ Part of the acidified permanganate solution is taken and analysed for mercury content.	
<u>Impinger # 8</u>	
➤ No analysis is performed on this component.	

3.4 Semi-volatile organic compounds (SVOC)

Semi-Volatile Organic Compounds (SVOC) are defined as organic compounds with boiling points greater than 100 °C. This class of compounds includes PCDD (PolyChlorinated Dibenzo p Dioxins), PCDF (PolyChlorinated DibenzoFurans), CP (ChloroPhenols), CB (ChloroBenzenes), PCB (PolyChlorinated Biphenyls) and PAH (Polycyclic Aromatic Hydrocarbons).

SVOCs were sampled in accordance with the requirements of Environment Canada EPS 1/RM/2 sampling method entitled: " Reference Method for Source Testing: Measurement of Releases of Selected Semi-volatile Organic Compounds from Stationary Sources ". For this project SVOCs included polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF). Sampling lasted 180 minutes and a minimal volume of at least 3.00 Rm³ were sampled for each run. At the outlet of the incinerator, three SVOC tests were conducted.

Five (5) train glassware sets were cleaned and one common rinse was analyzed for proofing. Three (3) of these trains were used for testing, one (1) was used as field blank and the remaining one was kept as spares.

A standard Method 5 sampling module was used, with a 5 foot borosilicate lined (proofed) probe. Sampling nozzles, pitot tubes, dry gas meters and orifice flow meters are calibrated in accordance with the EPS testing code.

Sampling train was assembled every day for the test to be held on the same day. Two rinses (Acetone & Hexane – 3 times each) were done before each test. The sampling train was as in the following.

Table 3.4-1 – Main components of the sampling system – SVOC

Components	Description
<u>Sampling probe</u>	
➤ A stainless steel nozzle of a precisely measured diameter to allow isokinetic sampling ; ➤ a stainless steel water-cooled probe with a heated glass liner to avoid moisture condensation ; ➤ this probe is fastened to an "S" type Pitot tube for gas velocity measurement and to a thermocouple for temperature measurement.	
<u>Sampling train</u>	
➤ A 0.3 µm porosity pre-weighted fiber glass filter mounted on an accurate holder and placed in a heated oven to avoid moisture condensation ; ➤ a condenser ; ➤ a XAD-2 resin cartridge ; ➤ a condensate trap ; ➤ three impingers placed in series and containing : ➤ # 1: 100 ml ethylene glycol ; ➤ # 2 : empty ; ➤ # 3: 200 g silica gel ; ➤ the impingers are placed in an ice bath to condense all the flue gas moisture.	
<u>Control unit</u>	
➤ A diaphragm leak free vacuum pump ; ➤ a dry gas meter ; ➤ an orifice flow meter ; ➤ probe and oven temperature controllers ; ➤ temperature display (stack, gas meter, impingers, resin).	

At the end of each sampling run the sampling train was brought back to the field laboratory to process with sample recovery. The procedure followed for sample recovery is as in the following table. Except for the filter, all the sampling train's components were first rinsed three times with acetone and then three times with hexane. After recovery was completed, all samples were clearly documented in lab journals, with each sample container clearly labelled, and stored in a refrigerator.

Along with one of the three SVOC tests, a blank train has been taken to the stack sampling site and left untouched for the duration of the test. At the end of the test, a volume of ambient air equal to the sum of all leak check volumes during the SVOC test was run through the blank train, according to the requirements of reference method EPS 1/RM/2.

The blank train was recovered in the field laboratory in the same manner as the compliance test trains. The field blank train has been analysed by Agat. Because they each constitute a part of the blank train, solvents, reagents, filters and the XAD-2 resin were not sampled and analysed as individual blanks. The train analysis was performed as per methods EPS 1/RM/3, EPS 1/RM/23 and NITEP/Mid Connecticut Combustion Test Methodology for Organic Analysis.

Table 3.4-2 – Sample recovery – SVOC

Components	Description
<u>Nozzle, probe and front half of filter holder</u>	
➤ Each component is rinsed three times and brushed with acetone and then three times with hexane ; ➤ all the rinses are kept in amber glass container with a Teflon lid.	
<u>Filter</u>	
➤ The filter is carefully removed from filter holder and deposited on a pre-cleaned aluminum foil ; ➤ the pieces of the filter stuck to the rubber are carefully replaced with the filter ; ➤ the filter is folded in half and placed in a pre-cleaned glass petri dish.	
<u>Back half of filter holder and condenser</u>	
➤ The condenser is weighted in order to determine the moisture content ; ➤ each component is soaked 5 minutes each with acetone and hexane ; ➤ each component is rinsed three times with acetone and then three times with hexane ; ➤ all the rinses are kept in amber glass container with a Teflon lid.	
<u>Resin cartridge</u>	
➤ The cartridge is weighted in order to determine the moisture content ; ➤ both ends of the cartridge are sealed ; ➤ the whole tube is wrapped with an aluminum foil.	
<u>Condensate trap and impinger # 1</u>	
➤ Each component is weighted in order to determine the moisture content ; ➤ the solution of each container is transferred into a pre-cleaned amber glass bottle ; ➤ each component is rinsed three times each with HPLC water ; ➤ the rinses are added into the same container.	
<u>All back half glassware excluding resin cartridge</u>	
➤ Each component including connectors are rinsed three times each with acetone and hexane ; ➤ all the rinses are kept into a pre-cleaned glass amber bottle.	
<u>Impingers # 2 and # 3</u>	
➤ Each component is weighted in order to determine the moisture content.	

Procedures in Environment Canada's Reports EPS 1/RM/3 and EPS 1/RM/23 were followed by Agat. All glassware was rinsed (with acetone and hexane) on site prior to usage, as per EPS 1/RM/2. SVOC samples were treated as one combined extract per test. Front and back halves of the sampling trains were not analyzed separately. The following analyses were done by the laboratory.

Table 3.4-3 – Samples analyses – SVOC

Components	Description
<u>Proofing</u>	
➤ 1 analysis for PCDD/F (1 combined proof rinse for all 5 trains glassware, XAD resin + filters).	
<u>Laboratory blank</u>	
➤ 1 analysis as part of the lab internal quality control.	
<u>Field blank</u>	
➤ 1 analysis for PCDD/F.	
<u>Samples</u>	
➤ 3 analyses (1 analysis per train) for PCDD/F.	

The proofing procedures detailed in Environment Canada's Report EPS 1/RM/2 entitled "Reference Method for Source Testing: Measurement of Releases of Selected Semi Volatile Organic Compounds from Stationary Sources" dated June 1989 were followed. These procedures have been carried out several times by the personnel assigned to this study.

Items cleaned by Exova: probe glass liners, all train glassware, petri dishes used for storing filters, XAD-2 traps and sample containers.

Items cleaned by Agat: XAD-2 resin, glass wool and filters.

All solvents and reagents used in this project were supplied by Exova except for the Amberlite XAD-2 resin and glass wool which were supplied by Agat. Exova's and Agat's last rinsings were combined to produce 1 final sample for proofing. One proofing analysis was carried out by Agat.

3.5 Gas molecular weight

Gas molecular weight was determined by measuring O₂, CO₂ and CO in accordance with the requirements of Environment Canada EPS 1/RM/8 sampling method entitled : "Reference methods for source testing : measurement of releases of particulate from stationary sources".

All system's components in contact with the stack gas were made of stainless steel. The gas composition at the sampling site was measured by connecting the analyser to the exhaust of the control unit. Specifications of the analyser are as in the following table.

Table 3.5-1 – Specifications of the analyser used for gas molecular weight determination

Pollutant	O ₂	CO ₂	CO
Measuring principle	Electrochemical cell	Thermoconductivity cell	Electrochemical cell
Instrument	Nova MRU+	Nova MRU+	Nova MRU+
Measuring range	0 – 25 % v/v	0 – 20 % v/v	0 – 4 % v/v

3.6 Gas temperature, moisture content and flowrate

Gas temperature, flowrate, velocity and moisture content were measured at the sampling site according to "Reference methods for source testing: measurement of releases of particulate from stationary sources". Methods B and D, Environment Canada, December 1993, EPS 1/RM/8.

4 SAMPLED SOURCE

4.1 Outlet of the incinerator

Sampling was conducted at the outlet of the incinerator. A description of the sampling location is shown below.

Table 4.1-1 – Outlet of the incinerator

Parameter	Value
Stack inside diameter at the sampling site	38.0"
Length of sampling ports	6.0"
No. of straight duct diameters upstream from the sampling ports	6.0 D
No. of straight duct diameters downstream of the sampling ports	2.0 D
No. of sampling traverses	2
Total no. of sampling points per sampling traverse	18
Total no. of sampling points per test	36
Sampling time per point (minutes)	5

4.2 Sampling equipment

The sampling equipment used for particulate matter (PM) / hydrogen chloride (HCl) / metals testing and for SVOC testing is described in the following tables.

Table 4.2-1 – Sampling equipment for PM / HCl / metals train

Parameter	Test # 1	Test # 2	Test # 3
Sampling module	3	3	3
Gas meter factor (γ)	1.0161	1.0161	1.0161
Orifice factor (K_o)	0.7881	0.7881	0.7881
Probe	2' B (eau)	2' B (eau)	2' B (eau)
Pitot factor (C_v)	0.790	0.790	0.790
Nozzle (inches)	0.491	0.491	0.491

Table 4.2-2 – Sampling equipment for SVOC train

Parameter	Test # 1	Test # 2	Test # 3
Sampling module	5	5	5
Gas meter factor (γ)	0.9847	0.9847	0.9847
Orifice factor (K_o)	1.1338	1.1338	1.1338
Probe	2' G (eau)	2' G (eau)	2' G (eau)
Pitot factor (C_v)	0.811	0.811	0.811
Nozzle (inches)	0.490	0.490	0.490

4.3 QA/QC report

The following tables show the quality assurance / quality control parameters applied during the test program. These parameters deal with the gas flow conditions at the sampling location, the sampling equipment/procedures employed and the isokineticity of the tests. The value of each parameter is compared to a quality acceptance criterion formulated in the reference sampling methods.

Table 4.3-1 – Gas flow conditions

Parameter	Actual			Quality criteria
Duct diameter (inches)	38.0			≥ 12.0
Sampling cross-section (ft ²)	7.88			≥ 0.78
No. of duct diam. upstream	6.0 D			$\geq 2.0 D$
No. of stack diam. downstream	2.0 D			$\geq 0.5 D$
No. of sampling traverses	2			2 or more
Cyclonic flow	0°			$\leq 15^\circ$
PM / HCl / metals tests	# 1	# 2	# 3	
Maximum stack gas velocity (ft/s)	29.5	29.1	29.1	≤ 100
Minimum stack gas velocity (ft/s)	24.3	24.3	23.6	≥ 10.0
Highest Ratio V_{max} / V_{min}	1.2	1.2	1.2	≤ 2.0
SVOC tests	# 1	# 2	# 3	
Maximum stack gas velocity (ft/s)	26.8	26.3	26.2	≤ 100
Minimum stack gas velocity (ft/s)	24.0	23.5	23.3	≥ 10.0
Highest Ratio V_{max} / V_{min}	1.1	1.1	1.1	≤ 2.0

All the quality criteria required by the reference sampling method were met.

Table 4.3-2 – Sampling equipment and procedures

PM / HCl / metals	Test # 1	Test # 2	Test # 3	Quality criteria
Filter enclosure temperature (°F)	250	250	250	248 ± 25
Probe temperature (°F)	250	250	250	248 ± 25
Maximum leak rate (cfm)	< 0.02	< 0.02	< 0.02	≤ 0.02
Nozzle diameter (in.)	0.491	0.491	0.491	≥ 0.188
Gas meter calibration factor	1.0161	1.0161	1.0161	0.95 ≤ γ ≤ 1.05
Sampling duration (min)	180	180	180	≥ 120
Gas sample volume (Rm ³)	3.463	3.462	3.491	≥ 2.80
SVOC	Test # 1	Test # 2	Test # 3	Quality criteria
Filter enclosure temperature (°F)	250	250	250	248 ± 25
Probe temperature (°F)	250	250	250	248 ± 25
Resin XAD-2 temperature (°F)	60	60	60	≤ 68
Maximum leak rate (cfm)	< 0.02	< 0.02	< 0.02	≤ 0.02
Nozzle diameter (in.)	0.490	0.490	0.490	≥ 0.188
Gas meter calibration factor	0.9847	0.9847	0.9847	0.95 ≤ γ ≤ 1.05
Sampling duration (min)	180	180	180	≥ 180
Gas sample volume (Rm ³)	3.202	3.265	3.300	≥ 3.00

All quality criteria required by the reference sampling method were met concerning the sampling equipment and procedures. No equipment failure, leaks or sample recovery problems were encountered during the testing program.

Table 4.3-3 – Isokineticity

PM / HCl / metals	Test # 1	Test # 2	Test # 3	Quality criteria
Average (%)	99.8	100.1	100.7	90 % ≤ Iso ≤ 110 %
> 110%	0 / 36	0 / 36	0 / 36	≤ 3 / 36
< 90%	0 / 36	0 / 36	0 / 36	
SVOC	Test # 1	Test # 2	Test # 3	Quality criteria
Average (%)	99.1	99.7	99.9	90 % ≤ Iso ≤ 110 %
> 110%	0 / 36	0 / 36	0 / 36	≤ 3 / 36
< 90%	0 / 36	0 / 36	0 / 36	

All quality criteria required by the reference sampling method were met concerning the isokineticity of the tests.

5 TABLES OF RESULTS

All the tests results are summarized in section 1.2 and represent the average of three runs.

Complete results for particulate matter (PM) and chlorhydric acid (HCl) are presented in table # 1. For metals, summary results are presented in table # 2 and detailed results are presented in tables 3 to 5.

For dioxins and furans (PCDD/F), summary results are presented in table # 6 and detailed results are presented in tables 7 to 9 with field blank results. The PCDD/PCDF tables of results give the analytical results in terms of international toxic equivalent (ITEQ) of the dioxin and furan congeners (expressed as 2, 3, 7, 8-T4CDD) as per method EPS 1/RM/2 requirements.

Results of PM / HCl / metals and SVOC include stack gas properties (velocity, flow, temperature, moisture, static pressure, molecular weight) measured during each test.

- # 1 : Detailed results of particulate matter (PM) and HCl emissions ;
- # 2 : Summary results of metals emissions ;
- # 3 : Detailed results of metals emissions – test # 1 ;
- # 4 : Detailed results of metals emissions – test # 2 ;
- # 5 : Detailed results of metals emissions – test # 3 ;
- # 6 : Summary results of SVOC emissions ;
- # 7 : Detailed results of PCDD/F emissions – test # 1 ;
- # 8 : Detailed results of PCDD/F emissions – test # 2 ;
- # 9 : Detailed results of PCDD/F emissions – test # 3.

The quality of the sampling data and results is good for all measurements. All the data are consistent and reliable.

The operating conditions were maintained stable throughout each day of the test program.

The applicable standard for dioxins and furans (PCDD/F) was met during each test. The applicable standard for mercury (Hg) was met during each test as well.

All computer print-outs, field data, analytical results and calibration reports are presented in appendix # 1.

TABLE # 1
OUTLET OF INCINERATOR
SUMMARY OF ATMOSPHERIC EMISSIONS
PARTICULATE MATTER - ANIONS

Test Date Time	1 19-Jun-15 14:33 - 17:38	2 20-Jun-15 12:55 - 16:00	3 21-Jun-15 09:30 - 12:35	AVERAGE
WEIGHT OF SAMPLE				
Particulate matter (mg)	242.66	203.10	202.59	
HCl (mg)	46.38	26.64	56.87	
GAS SAMPLE VOLUME (Rm³)	3.463	3.462	3.491	
CONCENTRATIONS				
Particulate matter (mg/Rm ³)	70.1	58.7	58.0	62.3
Particulate matter (mg/Rm ³ @ 11 % O ₂)	138.7	114.8	97.9	117.1
HCl (mg/Rm ³)	13.4	7.7	16.3	12.5
HCl (ppmv)	9.0	5.2	10.9	8.4
EMISSION MASS FLOW RATES				
Particulate matter (kg/h)	0.486	0.405	0.402	0.431
HCl (kg/h)	0.093	0.053	0.113	0.086
STACK GAS PROPERTIES				
VELOCITY (m/s)	8.3	8.2	8.0	8.1
VOLUMETRIC FLOW RATES				
m ³ /h (Actual conditions)	21768	21485	21142	21465
Rm ³ /h (Reference conditions)	6933	6905	6922	6920
TEMPERATURE (°C)	614	596	576	595
MOISTURE (% v/v, wet basis)	4.1	4.9	5.3	4.8
STATIC PRESSURE (" H₂O)	-0.10	-0.10	-0.10	-0.10
GAS COMPOSITION (dry basis)				
O ₂ (% v/v)	15.90	15.84	15.03	15.59
CO ₂ (% v/v)	3.81	3.78	4.09	3.89
CO (ppmv)	42.8	11.3	14.2	22.8
AVERAGE ISOKINETICITY (%)	99.8	100.1	100.7	100.2

"R" or "Reference Conditions" at 25 °C, 101.3 kPa, dry basis.

TABLE # 2
OUTLET OF INCINERATOR
RESULTS OF METALS ATMOSPHERIC EMISSIONS

Test Date Time	1 19-Jun-15 14:33 - 17:38	2 20-Jun-15 12:55 - 16:00	3 21-Jun-15 09:30 - 12:35	Average
Metals	Concentrations (µg/Rm³)			
Aluminum (Al)	262.78	719.82	631.34	537.98
Antimony (Sb)	5.00	1.33	2.89	3.07
Arsenic (As)	0.17	0.14	0.23	0.18
Baryum (Ba)	0.98	20.39	15.10	12.16
Beryllium (Be)	< 1.16	< 1.16	< 1.15	< 1.15
Bismuth (Bi)	< 1.44	< 1.44	< 1.43	< 1.44
Boron (B)	671.67	1723.57	1727.01	1374.08
Cadmium (Cd)	1.62	0.58	0.29	0.83
Calcium (Ca)	1189.72	2324.96	1806.36	1773.68
Chromium (Cr)	4.50	6.96	3.75	5.07
Cobalt (Co)	< 1.16	< 1.16	< 1.15	< 1.15
Copper (Cu)	12.59	5.63	6.45	8.22
Iron (Fe)	114.64	125.94	107.82	116.13
Lead (Pb)	39.27	14.07	28.24	27.19
Lithium (Li)	0.98	1.01	0.77	0.92
Magnesium (Mg)	319.03	585.33	446.23	450.20
Manganese (Mn)	49.24	45.87	48.91	48.01
Mercury (Hg)	< 0.12	< 0.12	< 0.11	< 0.12
Molybdenum (Mo)	1.44	7.51	6.87	5.28
Nickel (Ni)	3.09	2.63	0.60	2.11
Phosphorus (P)	< 28.88	< 115.83	< 28.65	< 57.78
Potassium (K)	707.48	805.89	429.68	647.68
Selenium (Se)	0.20	0.20	0.23	0.21
Silicium (soluble in HNO3)	719.03	27975.16	544.26	9746.15
Silver (Ag)	2.05	3.52	1.06	2.21
Sodium (Na)	2893.44	4766.03	3623.60	3761.03
Strontium (Sr)	1.79	2.60	2.86	2.42
Tellurium (Te)	< 0.29	< 1.16	< 0.29	< 0.58
Thallium (Tl)	< 1.16	< 1.16	< 1.15	< 1.15
Tin (Sn)	13.43	14.62	16.01	14.69
Titanium (Ti)	16.23	35.93	26.61	26.26
Uranium (U)	< 0.14	< 1.16	< 0.14	< 0.48
Vanadium (V)	0.12	< 1.16	< 1.15	< 0.81
Zinc (Zn)	23.33	11.29	15.81	16.81

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

TABLE # 2 (cont'd)
OUTLET OF INCINERATOR
RESULTS OF METALS ATMOSPHERIC EMISSIONS

Test Date Time	1 19-Jun-15 14:33 - 17:38	2 20-Jun-15 12:55 - 16:00	3 21-Jun-15 09:30 - 12:35	Average
Metals	Concentrations (µg/Rm³ @ 11 % O₂)			
Aluminum (Al)	520.30	1408.33	1064.78	997.80
Antimony (Sb)	9.89	2.60	4.88	5.79
Arsenic (As)	0.34	0.28	0.39	0.34
Baryum (Ba)	1.94	39.90	25.46	22.43
Beryllium (Be)	< 2.29	< 2.26	< 1.93	< 2.16
Bismuth (Bi)	< 2.86	< 2.83	< 2.42	< 2.70
Boron (B)	1329.91	3372.20	2912.68	2538.26
Cadmium (Cd)	3.20	1.13	0.48	1.61
Calcium (Ca)	2355.65	4548.83	3046.50	3316.99
Chromium (Cr)	8.92	13.62	6.33	9.62
Cobalt (Co)	< 2.29	< 2.26	< 1.93	< 2.16
Copper (Cu)	24.93	11.02	10.87	15.61
Iron (Fe)	226.99	246.40	181.84	218.41
Lead (Pb)	77.76	27.52	47.63	50.97
Lithium (Li)	1.94	1.98	1.30	1.74
Magnesium (Mg)	631.68	1145.20	752.59	843.16
Manganese (Mn)	97.50	89.74	82.50	89.91
Mercury (Hg)	< 0.23	< 0.23	< 0.19	< 0.22
Molybdenum (Mo)	2.86	14.69	11.59	9.72
Nickel (Ni)	6.12	5.14	1.01	4.09
Phosphorus (P)	< 57.18	< 226.62	< 48.31	< 110.70
Potassium (K)	1400.81	1576.75	724.67	1234.07
Selenium (Se)	0.40	0.40	0.39	0.39
Silicium (soluble in HNO3)	1423.68	54734.01	917.91	19025.20
Silver (Ag)	4.06	6.89	1.79	4.25
Sodium (Na)	5729.02	9324.84	6111.36	7055.07
Strontium (Sr)	3.54	5.09	4.83	4.49
Tellurium (Te)	< 0.57	< 2.26	< 0.48	< 1.11
Thallium (Tl)	< 2.29	< 2.26	< 1.93	< 2.16
Tin (Sn)	26.59	28.60	27.01	27.40
Titanium (Ti)	32.13	70.30	44.88	49.11
Uranium (U)	< 0.29	< 2.26	< 0.24	< 0.93
Vanadium (V)	0.23	< 2.26	< 1.93	< 1.47
Zinc (Zn)	46.20	22.10	26.67	31.65

"R" or "Reference Conditions" at 25 °C, 101.3 kPa, dry basis.

TABLE # 2 (cont'd)
OUTLET OF INCINERATOR
RESULTS OF METALS ATMOSPHERIC EMISSIONS

Test Date Time	1 19-Jun-15 14:33 - 17:38	2 20-Jun-15 12:55 - 16:00	3 21-Jun-15 09:30 - 12:35	Average
Metals	Emission rates (µg/s)			
Aluminum (Al)	506.07	1380.72	1213.92	1033.57
Antimony (Sb)	9.62	2.55	5.56	5.91
Arsenic (As)	0.33	0.28	0.44	0.35
Baryum (Ba)	1.89	39.12	29.03	23.34
Beryllium (Be)	< 2.22	< 2.22	< 2.20	< 2.21
Bismuth (Bi)	< 2.78	< 2.77	< 2.75	< 2.77
Boron (B)	1293.53	3306.09	3320.66	2640.09
Cadmium (Cd)	3.11	1.11	0.55	1.59
Calcium (Ca)	2291.20	4459.65	3473.23	3408.03
Chromium (Cr)	8.68	13.35	7.22	9.75
Cobalt (Co)	< 2.22	< 2.22	< 2.20	< 2.21
Copper (Cu)	24.25	10.80	12.39	15.81
Iron (Fe)	220.78	241.57	207.31	223.22
Lead (Pb)	75.63	26.98	54.31	52.31
Lithium (Li)	1.89	1.94	1.49	1.77
Magnesium (Mg)	614.40	1122.75	858.01	865.05
Manganese (Mn)	94.83	87.98	94.05	92.29
Mercury (Hg)	< 0.22	< 0.22	< 0.22	< 0.22
Molybdenum (Mo)	2.78	14.41	13.22	10.13
Nickel (Ni)	5.95	5.04	1.16	4.05
Phosphorus (P)	< 55.61	< 222.18	< 55.08	< 110.96
Potassium (K)	1362.49	1545.83	826.17	1244.83
Selenium (Se)	0.39	0.39	0.44	0.41
Silicium (soluble in HNO3)	1384.73	53660.97	1046.48	18697.39
Silver (Ag)	3.95	6.76	2.04	4.25
Sodium (Na)	5572.29	9142.03	6967.39	7227.24
Strontium (Sr)	3.45	4.99	5.51	4.65
Tellurium (Te)	< 0.56	< 2.22	< 0.55	< 1.11
Thallium (Tl)	< 2.22	< 2.22	< 2.20	< 2.21
Tin (Sn)	25.86	28.04	30.79	28.23
Titanium (Ti)	31.25	68.93	51.17	50.45
Uranium (U)	< 0.28	< 2.22	< 0.28	< 0.92
Vanadium (V)	0.22	< 2.22	< 2.20	< 1.55
Zinc (Zn)	44.93	21.66	30.40	32.33

TABLE # 3

OUTLET OF INCINERATOR
METALS EMISSIONS AT THE STACK

TEST #	1
DATE	19-Jun-15
TIME	14:33 - 17:38

Metals	ANALYSES OF SAMPLE	CONCENTRATION (1)	EMISSION RATE (1)	CONCENTRATION (1)
	µg	µg/Rm ³	µg/s	µg/Rm ³ @ 11 % O ₂
Aluminum (Al)	910.0	262.78	506.07	520.30
Antimony (Sb)	17.3	5.00	9.62	9.89
Arsenic (As)	0.6	0.17	0.33	0.34
Barium (Ba)	3.4	0.98	1.89	1.94
Beryllium (Be)	< 4.0	< 1.16	< 2.22	< 2.29
Bismuth (Bi)	< 5.0	< 1.44	< 2.78	< 2.86
Boron (B)	2326.0	671.67	1293.53	1329.91
Cadmium (Cd)	5.6	1.62	3.11	3.20
Calcium (Ca)	4120.0	1189.72	2291.20	2355.65
Chromium (Cr)	15.6	4.50	8.68	8.92
Cobalt (Co)	< 4.0	< 1.16	< 2.22	< 2.29
Copper (Cu)	43.6	12.59	24.25	24.93
Iron (Fe)	397.0	114.64	220.78	226.99
Lead (Pb)	136.0	39.27	75.63	77.76
Lithium (Li)	3.4	0.98	1.89	1.94
Magnesium (Mg)	1104.8	319.03	614.40	631.68
Manganese (Mn)	170.5	49.24	94.83	97.50
Mercury (Hg)	< 0.4	< 0.12	< 0.22	< 0.23
Molybdenum (Mo)	5.0	1.44	2.78	2.86
Nickel (Ni)	10.7	3.09	5.95	6.12
Phosphorus (P)	< 100.0	< 28.88	< 55.61	< 57.18
Potassium (K)	2450.0	707.48	1362.49	1400.81
Selenium (Se)	0.7	0.20	0.39	0.40
Silicium (soluble in HNO ₃)	2490.0	719.03	1384.73	1423.68
Silver (Ag)	7.1	2.05	3.95	4.06
Sodium (Na)	10020.0	2893.44	5572.29	5729.02
Strontium (Sr)	6.2	1.79	3.45	3.54
Tellurium (Te)	< 1.0	< 0.29	< 0.56	< 0.57
Thallium (Tl)	< 4.0	< 1.16	< 2.22	< 2.29
Tin (Sn)	46.5	13.43	25.86	26.59
Titanium (Ti)	56.2	16.23	31.25	32.13
Uranium (U)	< 0.5	< 0.14	< 0.28	< 0.29
Vanadium (V)	0.4	0.12	0.22	0.23
Zinc (Zn)	80.8	23.33	44.93	46.20

GAS SAMPLE VOLUME (Rm ³) :	3.463
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STACK GAS PROPERTIES	
VELOCITY (m/s)	8.3
VOLUMETRIC FLOW RATE	
m ³ /h (actual conditions)	21768
Rm ³ /h (reference conditions)	6933
GAS TEMPERATURE (°C)	614
MOISTURE (% v/v wet basis)	4.1
STATIC PRESSURE (inch H ₂ O)	-0.10
GAS COMPOSITION (dry basis)	
O ₂ (% v/v)	15.90
CO ₂ (% v/v)	3.81
CO (ppmv)	42.8

(1) When an analysis is "< D.L.", the detection limit (D.L.) is used in the calculations of concentration and emission.

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

TABLE # 4

OUTLET OF INCINERATOR
METALS EMISSIONS AT THE STACK

TEST #	2
DATE	20-Jun-15
TIME	12:55 - 16:00

Metals	ANALYSES OF SAMPLE	CONCENTRATION (1)	EMISSION RATE (1)	CONCENTRATION (1)
	µg	µg/Rm³	µg/s	µg/Rm³ @ 11 % O₂
Aluminum (Al)	2492.0	719.82	1380.72	1408.33
Antimony (Sb)	4.6	1.33	2.55	2.60
Arsenic (As)	0.5	0.14	0.28	0.28
Barium (Ba)	70.6	20.39	39.12	39.90
Beryllium (Be)	< 4.0	< 1.16	< 2.22	< 2.26
Bismuth (Bi)	< 5.0	< 1.44	< 2.77	< 2.83
Boron (B)	5967.0	1723.57	3306.09	3372.20
Cadmium (Cd)	2.0	0.58	1.11	1.13
Calcium (Ca)	8049.0	2324.96	4459.65	4548.83
Chromium (Cr)	24.1	6.96	13.35	13.62
Cobalt (Co)	< 4.0	< 1.16	< 2.22	< 2.26
Copper (Cu)	19.5	5.63	10.80	11.02
Iron (Fe)	436.0	125.94	241.57	246.40
Lead (Pb)	48.7	14.07	26.98	27.52
Lithium (Li)	3.5	1.01	1.94	1.98
Magnesium (Mg)	2026.4	585.33	1122.75	1145.20
Manganese (Mn)	158.8	45.87	87.98	89.74
Mercury (Hg)	< 0.4	< 0.12	< 0.22	< 0.23
Molybdenum (Mo)	26.0	7.51	14.41	14.69
Nickel (Ni)	9.1	2.63	5.04	5.14
Phosphorus (P)	< 401.0	< 115.83	< 222.18	< 226.62
Potassium (K)	2790.0	805.89	1545.83	1576.75
Selenium (Se)	0.7	0.20	0.39	0.40
Silicium (soluble in HNO₃)	96850.0	27975.16	53660.97	54734.01
Silver (Ag)	12.2	3.52	6.76	6.89
Sodium (Na)	16500.0	4766.03	9142.03	9324.84
Strontium (Sr)	9.0	2.60	4.99	5.09
Tellurium (Te)	< 4.0	< 1.16	< 2.22	< 2.26
Thallium (Tl)	< 4.0	< 1.16	< 2.22	< 2.26
Tin (Sn)	50.6	14.62	28.04	28.60
Titanium (Ti)	124.4	35.93	68.93	70.30
Uranium (U)	< 4.0	< 1.16	< 2.22	< 2.26
Vanadium (V)	< 4.0	< 1.16	< 2.22	< 2.26
Zinc (Zn)	39.1	11.29	21.66	22.10

GAS SAMPLE VOLUME (Rm³):	3.462
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STACK GAS PROPERTIES	
VELOCITY (m/s)	8.2
VOLUMETRIC FLOW RATE m³/h (actual conditions)	21485
Rm³/h (reference conditions)	6905
GAS TEMPERATURE (°C)	596
MOISTURE (% v/v wet basis)	4.9
STATIC PRESSURE (inch H₂O)	-0.10
GAS COMPOSITION (dry basis)	
O₂ (% v/v)	15.84
CO₂ (% v/v)	3.78
CO (ppmv)	11.3

(1) When an analysis is "< D.L.", the detection limit (D.L.) is used in the calculations of concentration and emission.

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

TABLE # 5

OUTLET OF INCINERATOR
METALS EMISSIONS AT THE STACK

TEST #	3
DATE	June 21, 2015
TIME	09:30 - 12:35

Metals	ANALYSES OF SAMPLE	CONCENTRATION (1)	EMISSION RATE (1)	CONCENTRATION (1)
	µg	µg/Rm ³	µg/s	µg/Rm ³ @ 11 % O ₂
Aluminum (Al)	2204.0	631.34	1213.92	1064.78
Antimony (Sb)	10.1	2.89	5.56	4.88
Arsenic (As)	0.8	0.23	0.44	0.39
Baryum (Ba)	52.7	15.10	29.03	25.46
Beryllium (Be)	< 4.0	< 1.15	< 2.20	< 1.93
Bismuth (Bi)	< 5.0	< 1.43	< 2.75	< 2.42
Boron (B)	6029.0	1727.01	3320.66	2912.68
Cadmium (Cd)	1.0	0.29	0.55	0.48
Calcium (Ca)	6306.0	1806.36	3473.23	3046.50
Chromium (Cr)	13.1	3.75	7.22	6.33
Cobalt (Co)	< 4.0	< 1.15	< 2.20	< 1.93
Copper (Cu)	22.5	6.45	12.39	10.87
Iron (Fe)	376.4	107.82	207.31	181.84
Lead (Pb)	98.6	28.24	54.31	47.63
Lithium (Li)	2.7	0.77	1.49	1.30
Magnesium (Mg)	1557.8	446.23	858.01	752.59
Manganese (Mn)	170.8	48.91	94.05	82.50
Mercury (Hg)	< 0.4	< 0.11	< 0.22	< 0.19
Molybdenum (Mo)	24.0	6.87	13.22	11.59
Nickel (Ni)	2.1	0.60	1.16	1.01
Phosphorus (P)	< 100.0	< 28.65	< 55.08	< 48.31
Potassium (K)	1500.0	429.68	826.17	724.67
Selenium (Se)	0.8	0.23	0.44	0.39
Silicium (soluble in HNO ₃)	1900.0	544.26	1046.48	917.91
Silver (Ag)	3.7	1.06	2.04	1.79
Sodium (Na)	12650.0	3623.60	6967.39	6111.36
Strontium (Sr)	10.0	2.86	5.51	4.83
Tellurium (Te)	< 1.0	< 0.29	< 0.55	< 0.48
Thallium (Tl)	< 4.0	< 1.15	< 2.20	< 1.93
Tin (Sn)	55.9	16.01	30.79	27.01
Titanium (Ti)	92.9	26.61	51.17	44.88
Uranium (U)	< 0.5	< 0.14	< 0.28	< 0.24
Vanadium (V)	< 4.0	< 1.15	< 2.20	< 1.93
Zinc (Zn)	55.2	15.81	30.40	26.67

GAS SAMPLE VOLUME (Rm ³):	3.491
---------------------------------------	-------

STACK GAS PROPERTIES	
VELOCITY (m/s)	8.0
VOLUMETRIC FLOW RATE	
m ³ /h (actual conditions)	21142
Rm ³ /h (reference conditions)	6922
GAS TEMPERATURE (°C)	576
MOISTURE (% v/v wet basis)	5.3
STATIC PRESSURE (inch H ₂ O)	-0.10
GAS COMPOSITION (dry basis)	
O ₂ (% v/v)	15.03
CO ₂ (% v/v)	4.09
CO (ppmv)	14.2

(1) When an analysis is "< D.L.", the detection limit (D.L.) is used in the calculations of concentration and emission.

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

TABLE # 6
OUTLET OF INCINERATOR
SUMMARY OF ATMOSPHERIC EMISSIONS
SVOC

Test Date Time	1 19-Jun-15 14:33 - 17:33	2 20-Jun-15 12:55 - 15:55	3 21-Jun-15 09:30 - 12:30	Average
Weight of sample				
PCDD/F (pg TEQ)	10.41	35.45	69.29	
Gas sample volume (Rm³)	3.202	3.265	3.300	
CONCENTRATIONS				
PCDD/F (pg/Rm³ TEQ)	3.3	10.9	21.0	11.7
PCDD/F (pg/Rm³ TEQ @ 11 % O₂)	6.4	21.2	35.4	21.0
MASS EMISSION RATE				
PCDD/F (ng/h TEQ)	21.1	71.3	139.0	77.1
STACK GAS PROPERTIES				
VELOCITY (m/s)	7.6	7.5	7.4	7.5
VOLUMETRIC FLOW RATES				
m³/h (Actual conditions)	20089	19666	19508	19754
Rm³/h (Reference conditions)	6479	6562	6620	6554
TEMPERATURE (°C)	609	564	553	575
MOISTURE (% v/v, wet basis)	3.5	4.8	4.6	4.3
STATIC PRESSURE (" H₂O)	-0.10	-0.10	-0.10	-0.10
GAS COMPOSITION (dry basis)				
O₂ (% v/v)	15.90	15.84	15.03	15.59
CO₂ (% v/v)	3.81	3.78	4.09	3.89
CO (ppmv)	42.8	11.3	14.2	22.8
AVERAGE ISOKINETICITY (%)	99.1	99.7	99.9	99.6

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

TABLE # 7

OUTLET OF INCINERATOR
EMISSIONS OF PCDD/PCDF

TEST # 1

PROJECT: R15-046
 COMPANY: AGNICO-EAGLE MINES LTD
 SITE: OUTLET OF INCINERATOR
 DATE: June 19, 2015

GAS SAMPLE VOLUME: 3.202 Rm³
 VOLUMETRIC FLOW RATE: 6479 Rm³/h
 OXYGEN (O₂): 15.90 % v/v, dry basis

CONGENERS	ANALYSES (1) pg	BLANK (2) pg	TOXIC (4) FACTOR	TEQ (3) pg	CONCENTRATIONS pg/Rm ³ TEQ (3)	EMISSIONS (TEQ) pg/s (3)
2,3,7,8-T4CDF without DB-225	2.2	< 1.0	0.1	0.22	0.07	0.12
1,2,3,7,8-P5CDF	4.0	< 2.0	0.05	0.20	0.06	0.11
2,3,4,7,8-P5CDF	< 3.0	< 3.0	0.5	< 1.50	< 0.47	< 0.84
1,2,3,4,7,8-H6CDF	5.0	< 1.0	0.1	0.50	0.16	0.28
1,2,3,6,7,8-H6CDF	3.0	< 1.0	0.1	0.30	0.09	0.17
2,3,4,6,7,8-H6CDF	4.0	< 2.0	0.1	0.40	0.12	0.22
1,2,3,7,8,9-H6CDF	< 4.0	< 2.0	0.1	< 0.40	< 0.12	< 0.22
1,2,3,4,6,7,8-H7CDF	9.0	4.0	0.01	0.09	0.03	0.05
1,2,3,4,7,8,9-H7CDF	< 4.0	< 3.0	0.01	< 0.04	< 0.01	< 0.02
1,2,3,4,6,7,8,9-O8CDF	19.0	11.0	0.001	0.02	0.01	0.01
2,3,7,8-T4CDD	4.0	< 1.0	1	4.00	1.25	2.25
1,2,3,7,8-P5CDD	3.0	< 2.0	0.5	1.50	0.47	0.84
1,2,3,4,7,8-H6CDD	3.7	< 3.0	0.1	0.37	0.12	0.21
1,2,3,6,7,8-H6CDD	4.0	< 3.0	0.1	0.40	0.12	0.22
1,2,3,7,8,9-H6CDD	3.7	< 3.0	0.1	0.37	0.12	0.21
1,2,3,4,6,7,8-H7CDD	8.0	3.0	0.01	0.08	0.02	0.04
1,2,3,4,6,7,8,9-O8CDD	23.0	< 8.0	0.001	0.02	0.01	0.01
TOTAL PCDD/F (5)	106.6	18.0		10.41	3.25	5.85

HOMOLOGOUS	ANALYSES pg	BLANK (2) pg
T4CDF	68.0	3.0
P5CDF	30.0	3.0
H6CDF	16.0	7.0
H7CDF	9.0	4.0
OCDF	19.0	11.0
T4CDD	41.0	< 1.0
P5CDD	20.0	24.0
H6CDD	17.0	< 3.0
H7CDD	20.0	8.0
OCDD	23.0	< 8.0

NOTES : "R" or "Reference Conditions" correspond to 25 °C, 101.3 kPa, dry basis.

The sign "<" means that the analytical result is less than the detection limit (d.l.).

- Analyzed by Agat Laboratories. Results ARE CORRECTED for the recovery of surrogates.
- Field blank results are not subtracted from the analytical results.
- When an analytical result is given as < d.l., the d.l. provided by the laboratory is used in the calculations.
- Toxicity factors of method EPS 1/RM/2 of Environment Canada.
- When a congener is not detected, the d.l. provided by the laboratory is used in the calculations for total PCDD/F.

TABLE # 8

OUTLET OF INCINERATOR
EMISSIONS OF PCDD/PCDF

TEST # 2

PROJECT: R15-046
 COMPANY: AGNICO-EAGLE MINES LTD
 SITE: OUTLET OF INCINERATOR
 DATE: June 20, 2015

GAS SAMPLE VOLUME: 3.265 Rm³
 VOLUMETRIC FLOW RATE: 6562 Rm³/h
 OXYGEN (O₂): 15.84 % v/v, dry basis

CONGENERS	ANALYSES (1) pg	BLANK (2) pg	TOXIC (4) FACTOR	TEQ (3) pg	CONCENTRATIONS pg/Rm ³ TEQ (3)	EMISSIONS (TEQ) pg/s (3)
2,3,7,8-T4CDF without DB-225	8.2	< 1.0	0.1	0.82	0.25	0.46
1,2,3,7,8-P5CDF	11.0	< 2.0	0.05	0.55	0.17	0.31
2,3,4,7,8-P5CDF	28.0	< 3.0	0.5	14.00	4.29	7.82
1,2,3,4,7,8-H6CDF	36.0	< 1.0	0.1	3.60	1.10	2.01
1,2,3,6,7,8-H6CDF	14.0	< 1.0	0.1	1.40	0.43	0.78
2,3,4,6,7,8-H6CDF	29.0	< 2.0	0.1	2.90	0.89	1.62
1,2,3,7,8,9-H6CDF	9.0	< 2.0	0.1	0.90	0.28	0.50
1,2,3,4,6,7,8-H7CDF	39.0	4.0	0.01	0.39	0.12	0.22
1,2,3,4,7,8,9-H7CDF	7.0	< 3.0	0.01	0.07	0.02	0.04
1,2,3,4,6,7,8,9-O8CDF	16.0	11.0	0.001	0.02	0.00	0.01
2,3,7,8-T4CDD	4.5	< 1.0	1	4.50	1.38	2.51
1,2,3,7,8-P5CDD	7.0	< 2.0	0.5	3.50	1.07	1.95
1,2,3,4,7,8-H6CDD	5.0	< 3.0	0.1	0.50	0.15	0.28
1,2,3,6,7,8-H6CDD	9.0	< 3.0	0.1	0.90	0.28	0.50
1,2,3,7,8,9-H6CDD	10.0	< 3.0	0.1	1.00	0.31	0.56
1,2,3,4,6,7,8-H7CDD	36.0	3.0	0.01	0.36	0.11	0.20
1,2,3,4,6,7,8,9-O8CDD	48.0	< 8.0	0.001	0.05	0.01	0.03
TOTAL PCDD/F (5)	316.7	18.0		35.45	10.86	19.79

HOMOLOGOUS	ANALYSES pg	BLANK (2) pg
T4CDF	340.0	3.0
P5CDF	264.0	3.0
H6CDF	96.0	7.0
H7CDF	62.0	4.0
OCDF	16.0	11.0
T4CDD	37.0	< 1.0
P5CDD	82.0	24.0
H6CDD	53.0	< 3.0
H7CDD	42.0	8.0
OCDD	48.0	< 8.0

NOTES : "R" or "Reference Conditions" correspond to 25 °C, 101.3 kPa, dry basis.

The sign "<" means that the analytical result is less than the detection limit (d.l.).

- (1) Analyzed by Agat Laboratories. Results ARE CORRECTED for the recovery of surrogates.
- (2) Field blank results are not subtracted from the analytical results.
- (3) When an analytical result is given as < d.l., the d.l. provided by the laboratory is used in the calculations.
- (4) Toxicity factors of method EPS 1/RM/2 of Environment Canada.
- (5) When a congener is not detected, the d.l. provided by the laboratory is used in the calculations for total PCDD/F.

TABLE # 9

OUTLET OF INCINERATOR
EMISSIONS OF PCDD/PCDF

TEST # 3

PROJECT: R15-046
 COMPANY: AGNICO-EAGLE MINES LTD
 SITE: OUTLET OF INCINERATOR
 DATE: June 21, 2015

GAS SAMPLE VOLUME: 3.300 Rm³
 VOLUMETRIC FLOW RATE: 6620 Rm³/h
 OXYGEN (O₂): 15.03 % v/v, dry basis

CONGENERS	ANALYSES (1) pg	BLANK (2) pg	TOXIC (4) FACTOR	TEQ (3) pg	CONCENTRATIONS pg/Rm ³ TEQ (3)	EMISSIONS (TEQ) pg/s (3)
2,3,7,8-T4CDF without DB-225	14.4	< 1.0	0.1	1.44	0.44	0.80
1,2,3,7,8-P5CDF	19.0	< 2.0	0.05	0.95	0.29	0.53
2,3,4,7,8-P5CDF	56.0	< 3.0	0.5	28.00	8.48	15.60
1,2,3,4,7,8-H6CDF	101.0	< 1.0	0.1	10.10	3.06	5.63
1,2,3,6,7,8-H6CDF	35.0	< 1.0	0.1	3.50	1.06	1.95
2,3,4,6,7,8-H6CDF	70.0	< 2.0	0.1	7.00	2.12	3.90
1,2,3,7,8,9-H6CDF	7.0	< 2.0	0.1	0.70	0.21	0.39
1,2,3,4,6,7,8-H7CDF	136.0	4.0	0.01	1.36	0.41	0.76
1,2,3,4,7,8,9-H7CDF	15.0	< 3.0	0.01	0.15	0.05	0.08
1,2,3,4,6,7,8,9-O8CDF	64.0	11.0	0.001	0.06	0.02	0.04
2,3,7,8-T4CDD	5.0	< 1.0	1	5.00	1.52	2.79
1,2,3,7,8-P5CDD	9.0	< 2.0	0.5	4.50	1.36	2.51
1,2,3,4,7,8-H6CDD	6.0	< 3.0	0.1	0.60	0.18	0.33
1,2,3,6,7,8-H6CDD	29.0	< 3.0	0.1	2.90	0.88	1.62
1,2,3,7,8,9-H6CDD	19.0	< 3.0	0.1	1.90	0.58	1.06
1,2,3,4,6,7,8-H7CDD	103.0	3.0	0.01	1.03	0.31	0.57
1,2,3,4,6,7,8,9-O8CDD	96.0	< 8.0	0.001	0.10	0.03	0.05
TOTAL PCDD/F (5)	784.4	18.0		69.29	21.00	38.61

HOMOLOGUOUS	ANALYSES (1) pg	BLANK (2) pg
T4CDF	663.0	3.0
P5CDF	510.0	3.0
H6CDF	247.0	7.0
H7CDF	222.0	4.0
OCDF	64.0	11.0
T4CDD	46.0	< 1.0
P5CDD	140.0	24.0
H6CDD	172.0	< 3.0
H7CDD	106.0	8.0
OCDD	96.0	< 8.0

NOTES : "R" or "Reference Conditions" correspond to 25 °C, 101.3 kPa, dry basis.

The sign "<" means that the analytical result is less than the detection limit (d.l.).

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- Field blank results are not subtracted from the analytical results.
- When an analytical result is given as < d.l., the d.l. provided by the laboratory is used in the calculations.
- Toxicity factors of method EPS 1/RM/2 of Environment Canada.
- When a congener is not detected, the d.l. provided by the laboratory is used in the calculations for total PCDD/F.

Report signatories and approval

Author	Pierre Duguay – P. Eng. - Supervisor
Approbation	Claude Bélanger, chemist – Operations Manager

APPENDIX 1 OUTLET OF THE INCINERATOR

PAM TESTS

DATA REDUCTION COMPUTER PRINT-OUTS
FIELD SAMPLING DATA SHEETS
SAMPLING EQUIPMENT CALIBRATION REPORTS

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SVOC TESTS

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**AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
PAM**

Test ---	Date ----	Time -----	Filter mg	Probe mg	Cyclone mg	Vmeter ft ³	Dstack inches	Period minutes
1	June 19, 2015	14:33 - 17:38	170.77	71.89		122.12	38.00	5

O2 (% v/v) Dry basis	CO2 (% v/v) Dry basis	CO (ppmv) Dry basis	Vol. water mL	Pbar "Hg	Dnozzle inch	Cpitot ---	γ ----	Pstatic "H2O
15.90	3.81	42.8	109.1	29.56	0.491	0.790	1.0161	-0.10
SO2	H2							
0	0							

Traverse #1								
Point	Tstack °F	ΔP "H2O	ΔH "H2O	Volume ft ³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1126	0.080	1.18	10.14	90	86	101.4	26.1
	1126	0.080	1.18	13.53	90	86		
2	1130	0.080	1.18	13.53	92	85	100.5	26.1
	1130	0.080	1.18	16.89	92	85		
3	1129	0.070	1.03	16.89	94	86	99.7	24.4
	1129	0.070	1.03	20.02	94	86		
4	1130	0.070	1.03	20.02	96	86	100.2	24.4
	1130	0.070	1.03	23.17	96	86		
5	1123	0.080	1.19	23.17	96	88	99.3	26.1
	1123	0.080	1.19	26.52	96	88		
6	1122	0.080	1.18	26.52	86	86	101.0	26.1
	1122	0.080	1.18	29.89	86	86		
7	1125	0.080	1.17	29.89	84	84	99.7	26.1
	1125	0.080	1.17	33.20	84	84		
8	1118	0.080	1.17	33.20	80	80	99.6	26.0
	1118	0.080	1.17	36.49	80	80		
9	1125	0.090	1.30	36.49	79	79	100.6	27.7
	1125	0.090	1.30	40.00	79	79		
10	1120	0.090	1.30	40.00	77	75	99.0	27.6
	1120	0.090	1.30	43.44	77	75		
11	1120	0.090	1.30	43.44	77	74	100.2	27.6
	1120	0.090	1.30	46.92	77	74		
12	1117	0.100	1.44	46.92	77	72	99.3	29.1
	1117	0.100	1.44	50.55	77	72		
13	1117	0.100	1.44	50.55	76	72	99.4	29.1
	1117	0.100	1.44	54.18	76	72		
14	1116	0.100	1.44	54.18	76	70	98.7	29.1
	1116	0.100	1.44	57.78	76	70		
15	1113	0.100	1.44	57.78	76	70	100.0	29.0
	1113	0.100	1.44	61.43	76	70		
16	1116	0.100	1.44	61.43	76	70	99.3	29.1
	1116	0.100	1.44	65.05	76	70		
17	1117	0.090	1.30	65.05	78	70	99.8	27.6
	1117	0.090	1.30	68.51	78	70		
18	1122	0.090	1.30	68.51	79	70	99.3	27.6
	1122	0.090	1.30	71.95	79	70		
Average	1121	0.087	1.268	61.81	83	78	99.8	27.1

AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
PAM

Test #1, Traverse #2								
Point	Tstack °F	ΔP "H ₂ O	ΔH "H ₂ O	Volume ft ³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1118	0.070	1.01	71.95	77	70	99.8	24.3
	1118	0.070	1.01	75.00	77	70		
2	1144	0.070	0.99	75.00	78	70	100.2	24.5
	1144	0.070	0.99	78.04	78	70		
3	1141	0.080	1.14	78.04	79	70	100.7	26.2
	1141	0.080	1.14	81.31	79	70		
4	1141	0.080	1.14	81.31	80	70	99.1	26.2
	1141	0.080	1.14	84.53	80	70		
5	1148	0.080	1.13	84.53	80	70	99.6	26.3
	1148	0.080	1.13	87.76	80	70		
6	1150	0.080	1.13	87.76	81	70	99.9	26.3
	1150	0.080	1.13	91.00	81	70		
7	1154	0.090	1.28	91.00	83	72	98.0	27.9
	1154	0.090	1.28	94.38	83	72		
8	1157	0.090	1.28	94.38	85	73	99.3	27.9
	1157	0.090	1.28	97.81	85	73		
9	1156	0.090	1.28	97.81	86	74	99.9	27.9
	1156	0.090	1.28	101.27	86	74		
10	1158	0.100	1.42	101.27	86	75	98.7	29.5
	1158	0.100	1.42	104.87	86	75		
11	1153	0.100	1.43	104.87	86	76	99.8	29.4
	1153	0.100	1.43	108.52	86	76		
12	1162	0.100	1.43	108.52	88	77	100.3	29.5
	1162	0.100	1.43	112.19	88	77		
13	1158	0.100	1.43	112.19	88	78	99.6	29.5
	1158	0.100	1.43	115.84	88	78		
14	1159	0.080	1.14	115.84	89	78	100.2	26.4
	1159	0.080	1.14	119.13	89	78		
15	1163	0.080	1.14	119.13	90	80	101.0	26.4
	1163	0.080	1.14	122.45	90	80		
16	1165	0.080	1.14	122.45	90	79	99.9	26.4
	1165	0.080	1.14	125.73	90	79		
17	1160	0.080	1.15	125.73	90	80	99.4	26.4
	1160	0.080	1.15	129.00	90	80		
18	1158	0.080	1.15	129.00	90	80	99.0	26.3
	1158	0.080	1.15	132.26	90	80		

Average	1153	0.085	1.212	60.31	85	75	99.7	27.1
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Ave. test	1137	0.086	1.240	122.12	84	76	99.8	27.1
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Velocity		Volumetric flow rates				Temperature		Moisture
ft/s	m/s	ACFM	SDCFM	m ³ /h	Rm ³ /h	°F	°C	% v/v
27.1	8.3	12811	4080	21768	6933	1137	614	4.1

Total part.	Gas sample volume		Verification of Isokinetic					
mg	SDCF	Rm ³	Nb readings	Nb non Iso	Nb < 90%	Nb > 110%	Iso max.	Iso min.
242.66	122.29	3.463	36	0	0	0	101.4	98.0

Pstack "Hg	Pmeter "Hg	Md g/g-mole	Ms g/g-mole	Bwo -----	Ratio Vs max / Vs min -----	Vs max. ft/s	Vs min. ft/s
29.55	29.65	29.25	28.78	0.041	1.2	29.5	24.3

Particulate concentrations				Emission mass flow rate	
gr/ACF	gr/SDCF	mg/m ³	mg/Rm ³	lb/h	kg/h
0.010	0.031	22	70	1.1	0.5

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

**AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
PAM**

Test ---	Date ----	Time -----	Filter mg	Probe mg	Cyclone mg	Vmeter ft³	Dstack inches	Period minutes
2	June 20, 2015	12:55 - 16:00	128.40	74.70		120.85	38.00	5

O2 (% v/v) Dry basis	CO2 (% v/v) Dry basis	CO (ppmv) Dry basis	Vol. water mL	Pbar "Hg	Dnozzle inch	Cpitot ----	γ ----	Pstatic "H2O
15.84	3.78	11.3	129.9	29.45	0.491	0.790	1.0161	-0.10
SO2	H2							
0	0							

Traverse #1								
Point	Tstack °F	ΔP "H2O	ΔH "H2O	Volume ft³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1103	0.070	1.03	33.12	82	80	101.7	24.3
	1103	0.070	1.03	36.27	82	80		
2	1102	0.070	1.02	36.27	74	79	100.5	24.3
	1102	0.070	1.02	39.36	74	79		
3	1106	0.070	1.02	39.36	73	77	100.9	24.3
	1106	0.070	1.02	42.45	73	77		
4	1101	0.070	1.02	42.45	74	72	101.1	24.3
	1101	0.070	1.02	45.54	74	72		
5	1106	0.080	1.16	45.54	74	72	99.1	26.0
	1106	0.080	1.16	48.77	74	72		
6	1104	0.080	1.16	48.77	74	70	100.1	26.0
	1104	0.080	1.16	52.03	74	70		
7	1104	0.080	1.16	52.03	73	70	99.9	26.0
	1104	0.080	1.16	55.28	73	70		
8	1107	0.080	1.15	55.28	73	68	100.5	26.0
	1107	0.080	1.15	58.54	73	68		
9	1105	0.080	1.16	58.54	74	69	99.7	26.0
	1105	0.080	1.16	61.78	74	69		
10	1105	0.090	1.30	61.78	74	68	101.0	27.6
	1105	0.090	1.30	65.26	74	68		
11	1101	0.090	1.31	65.26	74	69	99.4	27.5
	1101	0.090	1.31	68.69	74	69		
12	1103	0.090	1.30	68.69	75	68	99.1	27.6
	1103	0.090	1.30	72.11	75	68		
13	1109	0.100	1.44	72.11	75	68	99.8	29.1
	1109	0.100	1.44	75.73	75	68		
14	1106	0.100	1.44	75.73	74	67	98.2	29.1
	1106	0.100	1.44	79.29	74	67		
15	1109	0.090	1.30	79.29	74	68	100.9	27.6
	1109	0.090	1.30	82.76	74	68		
16	1106	0.090	1.30	82.76	74	68	100.2	27.6
	1106	0.090	1.30	86.21	74	68		
17	1110	0.080	1.15	86.21	75	68	99.8	26.0
	1110	0.080	1.15	89.45	75	68		
18	1111	0.080	1.15	89.45	77	67	101.0	26.0
	1111	0.080	1.15	92.73	77	67		
Average	1105	0.083	1.198	59.61	75	70	100.2	26.4

AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
PAM

Test #2, Traverse #2								
Point	Tstack °F	ΔP "H ₂ O	ΔH "H ₂ O	Volume ft ³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1103	0.080	1.16	92.73	75	69	100.4	26.0
	1103	0.080	1.16	96.00	75	69		
2	1100	0.080	1.16	96.00	74	69	99.2	26.0
	1100	0.080	1.16	99.23	74	69		
3	1099	0.080	1.16	99.23	74	69	98.8	25.9
	1099	0.080	1.16	102.45	74	69		
4	1105	0.080	1.16	102.45	74	68	99.7	26.0
	1105	0.080	1.16	105.69	74	68		
5	1099	0.080	1.16	105.69	74	69	100.7	25.9
	1099	0.080	1.16	108.97	74	69		
6	1098	0.080	1.16	108.97	75	68	100.0	25.9
	1098	0.080	1.16	112.23	75	68		
7	1103	0.080	1.16	112.23	76	69	100.0	26.0
	1103	0.080	1.16	115.49	76	69		
8	1104	0.090	1.31	115.49	77	68	101.6	27.6
	1104	0.090	1.31	119.00	77	68		
9	1102	0.090	1.31	119.00	76	69	100.1	27.6
	1102	0.090	1.31	122.46	76	69		
10	1105	0.100	1.45	122.46	77	69	98.3	29.1
	1105	0.100	1.45	126.04	77	69		
11	1105	0.100	1.15	126.04	78	70	101.0	29.1
	1105	0.100	1.15	129.73	78	70		
12	1107	0.100	1.45	129.73	78	69	101.5	29.1
	1107	0.100	1.45	133.43	78	69		
13	1100	0.100	1.46	133.43	77	70	99.9	29.0
	1100	0.100	1.46	137.08	77	70		
14	1099	0.090	1.31	137.08	78	70	99.7	27.5
	1099	0.090	1.31	140.54	78	70		
15	1107	0.090	1.31	140.54	77	70	99.5	27.6
	1107	0.090	1.31	143.98	77	70		
16	1108	0.090	1.31	143.98	77	70	100.4	27.6
	1108	0.090	1.31	147.45	77	70		
17	1106	0.080	1.16	147.45	78	70	99.8	26.0
	1106	0.080	1.16	150.71	78	70		
18	1108	0.080	1.16	150.71	78	70	99.9	26.0
	1108	0.080	1.16	153.97	78	70		

Average	1103	0.087	1.250	61.24	76	69	100.0	27.1
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Ave. test	1104	0.085	1.224	120.85	75	70	100.1	26.8
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Velocity		Volumetric flow rates				Temperature		Moisture
ft/s	m/s	ACFM	SDCFM	m ³ /h	Rm ³ /h	°F	°C	% v/v
26.8	8.2	12644	4064	21485	6905	1104	596	4.9

Total part.	Gas sample volume		Verification of Isokinetic					
mg	SDCF	Rm ³	Nb readings	Nb non Iso	Nb < 90%	Nb > 110%	Iso max.	Iso min.
203.10	122.26	3.462	36	0	0	0	101.7	98.2

Pstack "Hg	Pmeter "Hg	Md g/g-mole	Ms g/g-mole	Bwo -----	Ratio Vs max / Vs min -----	Vs max. ft/s	Vs min. ft/s
29.44	29.54	29.24	28.69	0.049	1.2	29.1	24.3

Particulate concentrations				Emission mass flow rate	
gr/ACF	gr/SDCF	mg/m ³	mg/Rm ³	lb/h	kg/h
0.008	0.026	19	59	0.9	0.4

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

**AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
PAM**

Test ---	Date ----	Time -----	Filter mg	Probe mg	Cyclone mg	Vmeter ft³	Dstack inches	Period minutes
3	June 21, 2015	09:30 - 12:35	131.15	71.44		123.02	38.00	5

O2 (% v/v) Dry basis	CO2 (% v/v) Dry basis	CO (ppmv) Dry basis	Vol. water mL	Pbar "Hg	Dnozzle inch	Cpitot ----	γ ----	Pstatic "H2O
15.03	4.09	14.2	144.7	29.48	0.491	0.790	1.0161	-0.10
SO2	H2							
0	0							

Traverse #1								
Point	Tstack °F	ΔP "H2O	ΔH "H2O	Volume ft³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1013	0.070	1.06	55.12	61	61	98.1	23.6
	1013	0.070	1.06	58.12	61	61		
2	1018	0.070	1.05	58.12	65	60	101.6	23.6
	1018	0.070	1.05	61.23	65	60		
3	1019	0.070	1.06	61.23	67	60	101.4	23.6
	1019	0.070	1.06	64.34	67	60		
4	1027	0.070	1.06	64.34	72	62	102.0	23.7
	1027	0.070	1.06	67.48	72	62		
5	1035	0.080	1.20	67.48	73	62	100.2	25.4
	1035	0.080	1.20	70.77	73	62		
6	1038	0.080	1.20	70.77	75	63	100.6	25.4
	1038	0.080	1.20	74.08	75	63		
7	1032	0.080	1.21	74.08	75	64	100.9	25.4
	1032	0.080	1.21	77.41	75	64		
8	1046	0.080	1.20	77.41	77	65	100.5	25.5
	1046	0.080	1.20	80.72	77	65		
9	1040	0.080	1.21	80.72	77	65	99.7	25.5
	1040	0.080	1.21	84.01	77	65		
10	1043	0.090	1.36	84.01	78	67	101.8	27.0
	1043	0.090	1.36	87.58	78	67		
11	1047	0.090	1.36	87.58	78	67	101.4	27.1
	1047	0.090	1.36	91.13	78	67		
12	1045	0.090	1.36	91.13	78	67	99.9	27.0
	1045	0.090	1.36	94.63	78	67		
13	1065	0.090	1.35	94.63	81	70	99.4	27.2
	1065	0.090	1.35	98.11	81	70		
14	1068	0.100	1.49	98.11	81	70	100.4	28.7
	1068	0.100	1.49	101.81	81	70		
15	1070	0.100	1.49	101.81	81	70	101.3	28.7
	1070	0.100	1.49	105.54	81	70		
16	1072	0.090	1.34	105.54	82	70	99.8	27.3
	1072	0.090	1.34	109.03	82	70		
17	1073	0.080	1.19	109.03	82	70	100.4	25.7
	1073	0.080	1.19	112.34	82	70		
18	1073	0.080	1.19	112.34	82	70	101.0	25.7
	1073	0.080	1.19	115.67	82	70		

Average	1046	0.083	1.243	60.55	76	66	100.6	25.9
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AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
PAM

Test #3, Traverse #2								
Point	Tstack °F	ΔP "H ₂ O	ΔH "H ₂ O	Volume ft ³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1077	0.080	1.20	115.67	87	76	100.1	25.8
	1077	0.080	1.20	119.00	87	76		
2	1081	0.080	1.20	119.00	87	76	101.5	25.8
	1081	0.080	1.20	122.37	87	76		
3	1092	0.080	1.19	122.37	88	78	99.7	25.9
	1092	0.080	1.19	125.68	88	78		
4	1091	0.080	1.19	125.68	88	78	99.1	25.9
	1091	0.080	1.19	128.97	88	78		
5	1084	0.080	1.20	128.97	88	77	101.4	25.8
	1084	0.080	1.20	132.34	88	77		
6	1093	0.080	1.19	132.34	89	78	100.3	25.9
	1093	0.080	1.19	135.67	89	78		
7	1094	0.080	1.19	135.67	89	79	100.8	25.9
	1094	0.080	1.19	139.02	89	79		
8	1096	0.090	1.34	139.02	90	81	100.3	27.5
	1096	0.090	1.34	142.56	90	81		
9	1095	0.090	1.35	142.56	91	80	101.7	27.5
	1095	0.090	1.35	146.15	91	80		
10	1097	0.100	1.50	146.15	92	82	101.9	29.0
	1097	0.100	1.50	149.95	92	82		
11	1099	0.100	1.50	149.95	92	82	101.2	29.0
	1099	0.100	1.50	153.72	92	82		
12	1098	0.100	1.50	153.72	93	82	101.8	29.0
	1098	0.100	1.50	157.52	93	82		
13	1103	0.100	1.49	157.52	93	83	101.4	29.1
	1103	0.100	1.49	161.30	93	83		
14	1090	0.090	1.36	161.30	93	83	100.7	27.4
	1090	0.090	1.36	164.88	93	83		
15	1094	0.090	1.35	164.88	93	84	99.7	27.5
	1094	0.090	1.35	168.42	93	84		
16	1098	0.080	1.20	168.42	93	84	101.9	25.9
	1098	0.080	1.20	171.83	93	84		
17	1096	0.070	1.05	171.83	93	84	101.2	24.3
	1096	0.070	1.05	175.00	93	84		
18	1099	0.070	1.05	175.00	93	84	100.3	24.3
	1099	0.070	1.05	178.14	93	84		

Average	1093	0.086	1.281	62.47	91	81	100.8	26.7
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Ave. test	1069	0.084	1.262	123.02	83	73	100.7	26.3
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Velocity		Volumetric flow rates				Temperature		Moisture
ft/s	m/s	ACFM	SDCFM	m ³ /h	Rm ³ /h	°F	°C	% v/v
26.3	8.0	12442	4074	21142	6922	1069	576	5.3

Total part.	Gas sample volume		Verification of Isokinetic					
mg	SDCF	Rm ³	Nb readings	Nb non Iso	Nb < 90%	Nb > 110%	Iso max.	Iso min.
202.59	123.28	3.491	36	0	0	0	102.0	98.1

Pstack	Pmeter	Md	Ms	Bwo	Ratio Vs max / Vs min	Vs max.	Vs min.
"Hg	"Hg	g/g-mole	g/g-mole	-----	-----	ft/s	ft/s
29.47	29.57	29.26	28.66	0.053	1.2	29.1	23.6

Particulate concentrations				Emission mass flow rate	
gr/ACF	gr/SDCF	mg/m ³	mg/Rm ³	lb/h	kg/h
0.008	0.026	19	58	0.9	0.4

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Agrico Enyle	Contrôle :	# SB-3Y = 1.0161	Ko =	788	Conduit :	Dia (") :	38	Porte (") :	6
Endroit :	Meadow Bank	Sonde :	# 28(6)Cv = 790			Diamètre :	Av :	6	Ap :	2
Date :	19-06-15	Projet :	R	Buse :	# 1/2 Dn = 491	Caisson #				
Site :	Imcinerantem	Humidité supposée % :	4%			Fuite Avant :	"H2O @ -1.5	"Hg		
Essai :	1 DAM	Pression :	Pbar ("Hg) =			Fuite Après :	"H2O @	"Hg		

Point	Heure	TS (°F)	ΔP ("H2O)	ΔH ("H2O)	Volume (pi³)	Température				Vacuum ("Hg)	% ISO (%)	Gaz			
						Tmi (°F)	Tmo (°F)	Temp (°F)	Four (°F)			O2 (%)	CO2 (%)	CO (ppmv / %)	NOx (ppmv / %)
1	14:33	1126	0.08	1.18	10.14	90	86	250	250	-4.0	101.8				
2	14:38	1130	0.08	1.18	13.53	92	85	250	250	-4.0	100.9	15.7	3.82	315	
3	14:43	1129	0.07	1.03	16.89	94	86	250	250	-4.0	100.2	15.7	3.74	169	
4	14:48	1130	0.07	1.03	20.02	96	86	250	250	-4.0	100.7	15.7	3.79	101	
5	14:53	1123	0.08	1.19	23.17	96	88	250	250	-4.0	99.8	15.8	3.73	104	
6	14:58	1122	0.08	1.18	26.52	86	86	250	250	-4.0	101.4	15.8	3.77	101	
7	15:03	1125	0.08	1.17	29.89	84	84	250	250	-4.0	100.1	15.8	3.77	81	
8	15:08	1118	0.08	1.17	33.20	80	80	250	250	-4.0	100.0	16.0	3.75	65	
9	15:13	1125	0.09	1.30	36.49	79	79	250	250	-4.0	101.0	16.0	3.75	55	
10	15:18	1120	0.09	1.30	40.00	77	75	250	250	-4.0	99.4	16.1	3.78	48	
11	15:23	1120	0.09	1.30	43.44	77	74	250	250	-5.0	100.6	16.1	3.77	45	
12	15:28	1117	0.10	1.44	46.92	77	72	250	250	-6.0	99.7	16.2	3.76	41	
					Constante => K = 42.62					A% = 116.88					

Échantillonneur: S. Saab

Assistant à l'échantillonneur: P.L.G.

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Incinerator			Contrôle: #SB-3 Y = 1.0161	Ko = .7881	Conduit: Dia ("): 38	Porte ("): 6
Endroit:	Meander Bank			Sonde: #2B Cv = .491		Diamètre: Av: 6	Ap: 2
Date:	19-06-15			Buse: #1/2 Dn = .790	Caisson #	Feuille: 2	de 4
Site :	Incinerator			Humidité supposée % = 4%		Fuite Avant: "H2O @	"Hg
Essai:	1 PAM			Pression: Pbar ("Hg) =	Pstat ("H2O) = -.1	Fuite Après: "H2O @	"Hg

[illegible]

AI-8

Échantillonneur:

5. 5

Assistant à l'échantillonneur:

P.L.G.

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	<u>Agnico Eagle</u>	Contrôle :	<u>#SB-3Y = 1.0161</u>	Ko =	<u>7881</u>	Conduit:	Dia ("):	38	Porte (")	6
Endroit:	<u>Meadowbank</u>	Sonde:	<u>#2B</u>	Cv =	<u>990</u>	Diamètre:	Av:	6	Ap:	2
Date:	<u>19-06-15</u>	Projet:	<u>R</u>	Buse:	<u># 1/2</u>	Dn =	<u>491</u>	Caisson #		
Site :	<u>Incinerateur</u>	Humidité supposée % =	<u>4%</u>						"H2O @	"Hg
Essai:	<u>1 PAM</u>	Pression:	Pbar ("Hg) =			Pstat ("H2O) =	<u>-0.10</u>		"H2O @	"Hg

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum (" Hg)	% ISO (%)	Gaz		
						Tmi (°F)	Tmo (°F)	Temp (°F)	Four (°F)			O2 (%)	CO2 (%)	CO (ppmv / %)
1	16:08	1118	0.07	1.01	71.95	77	70	250	250	-6.0	100.3			
2	16:13	1144	0.07	0.99	75.00	78	70	250	250	-6.0	100.7	16.1	3.70	32
3	16:18	1141	0.08	1.14	78.04	79	70	250	250	-6.0	101.2	15.9	3.87	3
4	16:23	1141	0.08	1.14	81.31	80	70	250	250	-6.0	99.5	16.0	3.87	3
5	16:28	1148	0.08	1.13	84.53	80	70	250	250	-6.0	100.0	15.9	3.88	3
6	16:33	1150	0.08	1.13	87.76	81	70	250	250	-7.0	100.3	15.9	3.87	3
7	16:38	1154	0.09	1.28	91.00	83	72	250	250	-7.0	98.5	15.9	3.88	3
8	16:43	1157	0.09	1.28	94.38	85	73	250	250	-7.0	99.7	15.8	3.87	3
9	16:48	1156	0.09	1.28	97.81	86	74	250	250	-7.0	100.4	15.8	3.89	3
10	16:53	1158	0.10	1.42	101.27	86	75	250	250	-7.0	99.0	15.7	3.88	3
11	16:58	1153	0.10	1.43	104.87	86	76	250	250	-7.0	100.2	15.7	3.91	3
12	17:03	1162	0.10	1.43	108.52	88		250	250	-7.0	100.7	15.7	3.91	3
13	17:08													
					Constante => K =		42.62		A% =		116.88			

Échantillonneur:

S. Searle

Assistant à l'échantillonneur:

P.L.G.

Compagnie :	Agmice Eagle		Contrôle :	# 5B-3Y = 1-0161	Ko = .788)	Conduit :	Dia ("): 38	Porte (") 6
Endroit :	Headman Bath		Sonde :	# 2B Cv = 790		Diamètre :	Av: 6	Ap: 2
Date :	19-06-15 / Projet: R		Buse :	# 1/2 Dn = .491	Caisson #	Feuille :	4 de 4	
Site :	Incimementar		Humidité supposée % = 4%			Fuite Avant :	"H2O @	"Hg
Essai :	1 PAM		Pression :	Pbar ("Hg) =	Pstat ("H2O) = -10	Fuite Après :	"H2O @ -15	"Hg

[illegible]

Constante $\Rightarrow K = 42.62$
 $A\% = 116.88$

P.L.G.

WEIGHT SHEET

Company	Agnico-Eagle
Location	Meadowbank
Date	19 / 06 / 2015
Site	Outlet incinerator
Train #	14
Test #	1 PAM

DATA	
Pbar: 29.56 po.Hg	
G	O ₂ % 15.90
A	CO ₂ % 3.81
Z	CO ppm 42.8
	CO %

	No.	Weight Final (g)	Weight Initial (g)	Weight Particulates
Filter	Q-041			
Probe wash				
Cyclone				
			Weight (g)	

Impingers	Final weight	Initial weight	Water weight
1 H ₂ O	590.4	579.3	11.1
2 H ₂ O	676.2	622.9	53.3
3 HNO ₃ 5% / H ₂ O ₂ 10 %	580.4	565.1	15.3
4 HNO ₃ 5% / H ₂ O ₂ 10 %	594.8	589.5	5.3
5 Empty	483.0	482.0	1.0
6 KMnO ₄ 4% / H ₂ SO ₄ 10%	592.1	590.1	2.0
7 KMnO ₄ 4% / H ₂ SO ₄ 10%	536.8	536.2	0.6
8 Silica gel	670.0	649.5	20.5
Final weight			109.1

Preparation	Prepared by	Recovered by	Approved by
Date	19-06-15	19-06-15	
On site	S.S	S.S	
Laboratory			

AI-11

Gestion des volumes des Barboteurs

Barboteur #	Volume d'eau Condensé	Volume de solution Initiale	Total	Code
1	111 mL	+ 100 mL	111.1 mL ⁽¹⁾	
2	53.3 mL	+ 100 mL	153.3 mL ⁽²⁾	
Rinçage (poids)	g	g	100 mL ⁽³⁾	1 g d'eau = 1 mL
Sous total (1+2+3)			364.4 mL ⁽⁴⁾	
Aliquot (Contenant 3B)			(-) 100 mL ⁽⁵⁾	19 JUIN15-A1-PAM-INC-(1+2-A)-15046.44
Volume final (4-5)			264.4 mL ⁽⁶⁾	
Divise par 20			divise par 20 ⁽⁷⁾	
Volume d'acide HNO ₃ conc. à ajouter			13.22 mL ⁽⁸⁾	
Volume final (5+6+8) (Contenant 3A)			377.62 mL ⁽⁹⁾	19 JUIN15-A1-PAM-INC-(1+2-M1)-15046.45 19 JUIN15-A1-PAM-INC-(1+2-M2)-15046.46
3	15.3 mL	+ 100 mL	115.3 mL ⁽¹⁰⁾	
4	5.3 mL	+ 100 mL	105.3 mL ⁽¹¹⁾	
Rinçage (poids)	g	g	100 mL ⁽¹²⁾	
Total (10 + 11 + 12) (Contenant 4)			320.6 mL ⁽¹³⁾	19 JUIN15-A1-PAM-INC-(3+4-RM)-15046.47
5	1.0 mL	+ 0 mL	1.0 mL ⁽¹⁴⁾	
Rinçage (poids)	g	g	100 mL ⁽¹⁵⁾	
Total (14 + 15) (Contenant 5 A)			101.0 mL ⁽¹⁶⁾	19 JUIN15-A1-PAM-INC-(5)-15046.48
6	2.0 mL	+ 100 mL	102.0 mL ⁽¹⁷⁾	
7	0.6 mL	+ 100 mL	100.6 mL ⁽¹⁸⁾	
Rinçage (KMnO ₄)	g	g	100 mL ⁽¹⁹⁾	g KMnO ₄ / 1.124 g/mL = mL KMnO ₄
Rinçage (H ₂ O)	g	g	100 mL ⁽²⁰⁾	
Total (17 + 18 + 19+ 20) (Contenant 5 B)			402.6 mL ⁽²¹⁾	19 JUIN15-A1-PAM-INC-(6+7)-15046.49

AI-12

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Agnico Eagle	Contrôle :	#5B-3 Y = 1.061	Ko =	.7881	Conduit :	Dia (") :	38	Porte (")	6
Endroit :	Meadow Bank	Sonde :	# 2B	Cv =	.790	Diamètre :	Av :	6	Ap :	2
Date :	20-06-15 / Projet : R	Buse :	# 1/2	Dn =	.491	Caisson #				
Site :	Incinerateur	Humidité supposée % =	4%							
Essai :	2 PAM	Pression :	Pbar ("Hg) =	- .10		Fuite Avant :	0.0000	"H2O @ -15	"Hg	
						Fuite Après :		"H2O @	"Hg	

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum (" Hg)	% ISO (%)	Gaz			
						Tmi (°F)	Tmo (°F)	Timp (°F)	Sonde (°F)	Four (°F)		O2 (%)	CO2 (%)	CO (ppmv / %)	NOx ppmv

1	12:55	1103	0.07	1.03	33.12	82	80		250	250	-4.0	101.7			
2	13:00	1102	0.07	1.02	36.27	74	79		250	250	-4.0	100.6	15.7	3.49	14
3	13:05	1106	0.07	1.02	39.36	73	77		250	250	-4.0	101.0	15.6	3.93	25
4	13:10	1101	0.07	1.02	42.45	74	72		250	250	-4.0	101.2	15.6	3.96	39
5	13:15	1106	0.08	1.16	45.54	74	72		250	250	-5.0	99.1	15.7	3.92	41
6	13:20	1104	0.08	1.16	48.77	74	70		250	250	-5.0	100.1	15.7	3.96	38
7	13:25	1104	0.08	1.16	52.03	73	70		250	250	-5.0	99.9	15.7	3.94	41
8	13:30	1107	0.08	1.15	55.28	73	68		250	250	-5.0	100.5	15.8	3.83	16
9	13:35	1105	0.08	1.16	58.54	74	69		250	250	-5.0	99.7	15.8	3.83	17
10	13:40	1105	0.09	1.30	61.78	74	68		250	250	-5.0	101.0	15.9	3.78	11
11	13:45	1101	0.09	1.31	65.26	74	69		250	250	-5.0	99.3	15.9	3.83	11
12	13:50	1103	0.09	1.30	68.69	75	68		250	250	-5.0	99.1	15.9	3.81	9

Constante => K = 42.62 A% = 116.88

Échantillonneur: S. Sander

Assistant à l'échantillonneur: P.L.B.

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Agnico Eagle			Contrôle:	# SB-3	Y = 1.061	Ko = -788/	Conduit:	Dia ("): 38	Porte (") 6
Endroit:	Meadow Bank			Sonde:	# 2B	Cv = .770		Diamètre:	Av: 6	Ap: 2
Date:	20-06-15 /Projet: R			Buse:	# 1/2	Dn = .491	Caisson #	Feuille :	2	de 4
Site :	Incimerateur			Humidité supposée % = 4%				Fuite Avant:	"H2O @	"Hg
Essai:	2 PAM			Pression: Pbar ("Hg) =			Pstat ("H2O) = - .10	Fuite Après:	"H2O @	"Hg

[illegible]

Al-1

Échantillonneur:

5. Stachys

Assistant à l'échantillonneur:

Q

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Agencia Taylor	Contrôle :	# 58.3 Y = 1.016	Ko =	788	Conduit :	Dia (") :	38	Porte (") :	6
Endroit :	Head of Brook	Sonde :	# 28	Cv =	790	Diamètre :	Av :	6	Ap :	2
Date :	20-06-15 / Projet: R	Buse :	# 1/2	Dn =	49	Caisson #				
Site :	Incinerateur	Humidité supposée % =	4%				Fuite Avant :	"H2O @		"Hg
Essai :	2 PAM	Pression :	Pbar ("Hg) =	-0.10			Fuite Après :	"H2O @		"Hg

Point	Heure	TS (°F)	ΔP ("H2O)	ΔH ("H2O)	Volume (pi³)	Température				Vacuum ("Hg)	% ISO (%)	Gaz			
						Tmi (°F)	Tmo (°F)	Timp (°F)	Sonde (°F)	Four (°F)		O2 (%)	CO2 (%)	CO (ppmv / %)	NOx (ppmv)

1	14:30	1103	0.08	1.16	92.73	75	69		250	250	100.4	15.8	3.79	5	
2	14:35	1100	0.08	1.16	96.00	74	69		250	250	99.2	15.9	3.73	5	
3	14:40	1099	0.08	1.16	99.23	74	69		250	250	98.8	15.9	3.72	4	
4	14:45	1105	0.08	1.16	102.45	74	68		250	250	99.7	15.9	3.71	4	
5	14:50	1099	0.08	1.16	105.69	74	69		250	250	100.7	15.9	3.71	4	
6	14:55	1098	0.08	1.16	108.97	75	68		250	250	100.0	15.9	3.71	4	
7	15:00	1103	0.08	1.16	112.23	76	69		250	250	100.0	16.0	3.68	3	
8	15:05	1104	0.09	1.31	115.49	77	68		250	250	101.6	15.9	3.74	4	
9	15:10	1102	0.09	1.31	119.00	76	69		250	250	100.1	15.9	3.69	4	
10	15:15	1105	0.10	1.45	122.46	77	69		250	250	98.2	15.9	3.70	3	
11	15:20	1105	0.10	1.45	126.04	78	70		250	250	101.0	15.9	3.70	4	
12	15:25	1107	0.10	1.45	129.73	78	69		250	250	101.5	15.9	3.72	3	

Constante => K = 42.62 A% = 116.88

Échantillonneur:

S. Sadeur

Assistant à l'échantillonneur:

P.L.G

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	Constante => K = 42.62	A% = 16.88
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P.L.5

WEIGHT SHEET

Company	Agnico-Eagle
Location	Meadowbank
Date	/ 06 / 2015
Site	Outlet incinerator
Train #	14
Test #	2 PAM

DATA	
Pbar: 29.45 po.Hg	
G	O ₂ % 15.84
A	CO ₂ % 3.78
Z	CO ppm 11.3
	CO %

	No.	Weight Final (g)	Initial (g)	Weight Particulates
Filter	Q-050		0.37455	
Probe wash				
Cyclone				
			Weight (g)	

Impingers	Final weight	Initial weight	Water weight
1 H2O	634.5	584.4	50.1
2 H2O	660.8	624.2	36.6
3 HNO ₃ 5% / H ₂ O ₂ 10 %	578.4	568.6	9.8
4 HNO ₃ 5% / H ₂ O ₂ 10 %	597.5	594.1	3.4
5 Empty	488.1	484.0	4.1
6 KMnO ₄ 4% / H ₂ SO ₄ 10%	585.8	585.2	0.6
7 KMnO ₄ 4% / H ₂ SO ₄ 10%	538.5	538.5	0.0
8 Silica gel	674.7	649.4	25.3
Final weight			129.9

Preparation	Prepared by	Recovered by	Approved by
Date	20-06-15	20-06-15	
On site	S.S	S.S	
Laboratory			

AI-17

Gestion des volumes des Barboteurs

Barboteur #	Volume d'eau Condensé	Volume de solution Initiale	Total	Code
1	50.1 mL	+ 100 mL	150.1 mL ⁽¹⁾	
2	36.6 mL	+ 100 mL	136.6 mL ⁽²⁾	
Rincage (poids)	g	g	100 mL ⁽³⁾	1 g d'eau = 1 mL
Sous-total (1+2+3)			386.7 mL ⁽⁴⁾	
Aliquot (Contenant 3B)			(-) 100 mL ⁽⁵⁾	20 JUIN15-A2-PAM-INC-(1+2-A)-15046.54
Volume final (4-5)			286.7 mL ⁽⁶⁾	
Divise par 20			divise par 20 ⁽⁷⁾	
Volume d'acide HNO ₃ conc. à ajouter			14.33 mL ⁽⁸⁾	
Volume final (5+6+8) (Contenant 3A)			4801.03 mL ⁽⁹⁾	20 JUIN15-A2-PAM-INC-(1+2-M1)-15046.55 JUIN15-A2-PAM-INC-(1+2-M2)-15046.56
3	9.8 mL	+ 100 mL	109.8 mL ⁽¹⁰⁾	
4	3.4 mL	+ 100 mL	103.4 mL ⁽¹¹⁾	
Rincage (poids)	g	g	100 mL ⁽¹²⁾	
Total (10 + 11 + 12) (Contenant 4)			313.2 mL ⁽¹³⁾	20 JUIN15-A2-PAM-INC-(3+4-RM)-15046.57
5	4.1 mL	+ 0 mL	4.1 mL ⁽¹⁴⁾	
Rincage (poids)	g	g	100 mL ⁽¹⁵⁾	
Total (14 + 15) (Contenant 5 A)			104.1 mL ⁽¹⁶⁾	20 JUIN15-A2-PAM-INC-(5)-15046.58
6	0.6 mL	+ 100 mL	100.6 mL ⁽¹⁷⁾	
7	0.0 mL	+ 100 mL	100 mL ⁽¹⁸⁾	
Rincage (KMnO ₄)	g	g	100 mL ⁽¹⁹⁾	g KMnO ₄ / 1.124 g/mL = mL KMnO ₄
Rincage (H ₂ O)	g	g	100 mL ⁽²⁰⁾	
Total (17 + 18 + 19+ 20) (Contenant 5 B)			400.6 mL ⁽²¹⁾	20 JUIN15-A2-PAM-INC-(6+7)-15046.59

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Agnico Eagle	Contrôle :	# 58-3 Y = 1-0161	Ko =	3881	Conduit :	Dia (") :	3.8	Porte (") :	6
Endroit :	Headwater Basin	Sonde :	# 2 B	Cv =	790	Diamètre :	Av :	6	Ap :	2
Date :	21-06-15 / Projet : R	Buse :	# 1/2	Dn =	491	Caisson #				
Site :	Imcinement	Humidité supposée % =	4%							
Essai :	3 DAM	Pression :	Pbar ("Hg) =			Pstat ("H2O) =	-10			
						Fuite Avant :	0.0002	"H2O @	-1.5	"Hg
						Fuite Après :		"H2O @		"Hg

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum (" Hg)	% ISO (%)	Gaz					
						Tmi (°F)	Tmo (°F)	Temp (°F)	Sonde (°F)			Four (°F)	O2 (%)	CO2 (%)	CO (ppmv / %)	NOx ppmv	
1	9:30	1013	0.07	1.06	55.12	61	61		250	250	-4.0	97.6					
2	9:35	1018	0.07	1.05	58.12	65	60		250	250	-4.0	101.1	14.7	4.40	11		
3	9:40	1019	0.07	1.06	61.23	67	60		250	250	-4.0	100.9	14.8	4.45	14		
4	9:45	1027	0.07	1.06	64.39	72	62		250	250	-4.0	101.5	14.7	4.38	25		
5	9:50	1035	0.08	1.20	67.48	73	62		250	250	-5.0	99.7	14.8	4.38	25		
6	9:55	1038	0.08	1.20	70.77	75	63		250	250	-5.0	100.1	14.9	4.29	29		
7	10:00	1032	0.08	1.21	74.08	75	64		250	250	-5.0	100.4	14.9	4.27	29		
8	10:05	1046	0.08	1.20	77.41	77	65		250	250	-5.0	100.0	15.0	4.16	31		
9	10:10	1040	0.08	1.21	80.72	77	65		250	250	-5.0	99.2	15.1	4.19	32		
10	10:15	1043	0.09	1.36	84.01	78	67		250	250	-6.0	101.3	15.0	4.11	32		
11	10:20	1047	0.09	1.36	87.58	78	67		250	250	-6.0	100.8	15.1	4.09	32		
12	10:25	1045	0.09	1.36	91.13	78	67		250	250	-6.0	99.3	15.1	4.09	32		
												Constante => K = 42.62				A% = 116.88	

71-10

Échantillonneur: S. Sadeau

Assistant à l'échantillonneur:

P.L.G.

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Agnico Eagle		Contrôle :	# SB-3	Y = 1.0161	Ko = .7881	Conduit :	Dia (") :	38	Porte (")	6
Endroit :	Headwaters Bank		Sonde :	# 2B	Cv = .750		Diamètre :	Av :	6	Ap :	2
Date :	21-06-15 /Projet: R		Buse :	# 1/2	Dn = .401	Caisson #	Feuille :	2	de	4	
Site :	Incinérateur		Humidité supposée % = 4%				Fuite Avant :	"H2O @			"Hg
Essai :	3 PAM		Pression: Pbar ("Hg) =			Pstat ("H2O) = -.10	Fuite Après :	"H2O @			"Hg

[illegible]

91-20

Échantillonneur:

53

Assistant à l'échantillonneur:

Q. L. G.

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	A. Mico Eagle		Contrôle: #	SB-3 Y = 1.0161	Ko =	7881	Conduit: Dia (")	3.8	Porte (")	6
Endroit:	Meadow Bank		Sonde: #	28	Cv =	790	Diamètre: Av:	6	Ap:	2
Date:	21-06-15 / Projet: R		Buse: #	1/2	Dn =	491	Caisson #	3	de	4
Site :	Incinerateur		Humidité supposée % =	4%			Fuite Avant:	"H2O @	"Hg	
Essai:	3 PAM		Pression: Pbar ("Hg) =	-10			Fuite Après:	"H2O @	"Hg	

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum ("Hg)	% ISO (%)	Gaz			
						Tmi (°F)	Tmo (°F)	Timp (°F)	Sonde (°F)	Four (°F)		O2 (%)	CO2 (%)	CO (ppmv / %)	NOx ppmv

1	11:05	1077	0.08	1.20	115.67	87	76		250	250	99.7	15.1	4.06	4	
2	11:06	1081	0.08	1.20	119.00	87	76		250	250	101.0	15.2	4.04	4	
3	11:15	1092	0.08	1.19	122.37	88	78		250	250	99.2	15.1	4.08	4	
4	11:20	1091	0.08	1.19	125.68	88	78		250	250	98.6	15.0	4.06	4	
5	11:25	1084	0.08	1.20	128.97	88	77		250	250	100.9	15.1	4.07	4	
6	11:30	1093	0.08	1.19	132.34	89	78		250	250	99.8	15.1	4.01	4	
7	11:35	1094	0.08	1.19	135.67	89	79		250	250	100.3	15.1	4.04	4	
8	11:40	1096	0.09	1.34	139.02	90	81		250	250	99.7	15.1	4.02	6	
9	11:45	1095	0.09	1.35	142.56	91	80		250	250	101.1	15.1	3.97	7	
10	11:50	1097	0.10	1.50	146.15	92	82		250	250	101.3	15.1	3.96	8	
11	11:55	1099	0.10	1.50	149.95	92	82		250	250	100.6	15.1	3.95	8	
12	12:00	1098	0.10	1.50	153.72	93	82		250	250	101.3	15.1	3.95	8	

Constante => K = 42.62 A% = 16.88

Échantillonneur: S. Sadeur

Assistant à l'échantillonneur: P. C. G.

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Agencia Engle	Contrôle: #GB-38 = 10161	Ko = 7881	Conduit: Dia ("): 38	Porte ("): 6
Endroit:	Meadow Bank	Sonde: #2B Cv = 790		Diamètre: Av: 6	Ap: 2
Date:	21-06-15 / Projet: R	Buse: #1/2 Dn = 471	Caisson #	Feuille: 4	de 4
Site :	Immensité	Humidité supposée % = 41%		Fuite Avant: "H2O @	"Hg
Essai:	3 PAM	Pression: Pbar ("Hg) =	Pstat ("H2O) = -10	Fuite Après: "H2O @ -15	"Hg

[illegible]

A1-22

Échantillonneur:

55

Assistant à l'échantillonneur:

$$\frac{cb}{a}$$

WEIGHT SHEET

Company	Agnico-Eagle
Location	Meadowbank
Date	21 / 06 / 2015
Site	Outlet incinerator
Train #	14
Test #	3 PAM

DATA	
Pbar:	29.48 po.Hg
G	O ₂ % 15.03
A	CO ₂ % 4.09
Z	CO ppm 14.2
	CO %

	No.	Weight Final (g)	Initial (g)	Weight Particulates
Filter	Q-042		0.37597	
Probe wash				
Cyclone				
			Weight (g)	

Impingers	Final weight	Initial weight	Water weight
1 H ₂ O	643.2	588.7	54.5
2 H ₂ O	675.0	626.0	49.0
3 HNO ₃ 5% / H ₂ O ₂ 10 %	582.1	570.1	12.0
4 HNO ₃ 5% / H ₂ O ₂ 10 %	598.4	594.2	4.2
5 Empty	487.7	485.0	2.7
6 KMnO ₄ 4% / H ₂ SO ₄ 10%	594.6	594.0	0.6
7 KMnO ₄ 4% / H ₂ SO ₄ 10%	540.9	541.7	-0.8
8 Silica gel	672.2	649.7	22.5
Final weight			144.7

Preparation	Prepared by	Recovered by	Approved by
Date	21-06-15	21-06-15	
On site	S.S	S.S	
Laboratory			

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Gestion des volumes des Barboteurs

Barboteur #	Volume d'eau Condensé	Volume de solution Initiale	Total	Code
1	54.5 mL	+ 100 mL	154.5 mL ⁽¹⁾	
2	49.0 mL	+ 100 mL	149.0 mL ⁽²⁾	
Rincage (poids)	g	g	100 mL ⁽³⁾	1 g d'eau = 1 mL
Sous-total (1+2+3)			403.5 mL ⁽⁴⁾	
Aliquot (Contenant 3B)			(-) 100 mL ⁽⁵⁾	21 JUIN15-A3-PAM-INC-(1+2-A)-15046.64
Volume final (4-5)			303.5 mL ⁽⁶⁾	
Divise par 20			divise par 20 ⁽⁷⁾	
Volume d'acide HNO ₃ conc. à ajouter			15.17 mL ⁽⁸⁾	
Volume final (5+6+8) (Contenant 3A)			418.67 mL ⁽⁹⁾	21 JUIN15-A3-PAM-INC-(1+2-M1)-15046.65 JUIN15-A3-PAM-INC-(1+2-M2)-15046.66
3	12 mL	+ 100 mL	112.0 mL ⁽¹⁰⁾	
4	4.2 mL	+ 100 mL	104.2 mL ⁽¹¹⁾	
Rincage (poids)	g	g	100 mL ⁽¹²⁾	
Total (10 + 11 + 12) (Contenant 4)			316.2 mL ⁽¹³⁾	21 JUIN15-A3-PAM-INC-(3+4-RM)-15046.67
5	2.7 mL	+ 0 mL	2.7 mL ⁽¹⁴⁾	
Rincage (poids)	g	g	100 mL ⁽¹⁵⁾	
Total (14 + 15) (Contenant 5 A)			102.7 mL ⁽¹⁶⁾	21 JUIN15-A3-PAM-INC-(5)-15046.68
6	0.6 mL	+ 100 mL	100.6 mL ⁽¹⁷⁾	
7	-0.8 mL	+ 100 mL	99.2 mL ⁽¹⁸⁾	
Rincage (KMnO ₄)	g	g	100 mL ⁽¹⁹⁾	g KMnO ₄ / 1.124 g/mL = mL KMnO ₄
Rincage (H ₂ O)	g	g	100 mL ⁽²⁰⁾	
Total (17 + 18 + 19+ 20) (Contenant 5 B)			399.8 mL ⁽²¹⁾	21 JUIN15-A3-PAM-INC-(6+7)-15046.69

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CALIBRATION OF SAMPLING MODULE

Module Identification:	SB_3
Inventory number:	
Atmospheric pressure ("Hg) :	30.20

Responsible calibration :	Sylvain Lapointe
Responsible data entry:	Sylvain Lapointe
Calibration date:	22 Janvier 2015
Next calibration date:	22 Janvier 2016

del.H in.H2O	Vw ft³	Vd ft³	Tw deg.F	Tdo deg.F	Td deg.F	time min.	del.m in.H2O	factor count.
0.5	5.00	4.98	71.60	79.00	80.00	11.76	-0.15	0.9983
0.5	5.00	4.94	71.60	75.00	75.75	11.72	-0.15	0.9983
1.0	5.00	4.93	71.60	74.50	74.75	8.06	-0.28	0.9983
1.0	5.00	4.93	71.60	74.50	76.00	8.10	-0.28	0.9983
1.5	5.00	4.92	71.60	73.50	75.00	6.60	-0.41	0.9983
1.5	5.00	4.93	71.60	74.00	76.00	6.63	-0.41	0.9983
2.0	5.00	4.93	71.60	74.00	76.00	5.71	-0.53	0.9983
2.0	5.00	4.93	71.60	74.00	76.00	5.71	-0.53	0.9983
2.5	10.00	9.84	71.60	74.50	75.75	10.20	-0.67	0.9983
2.5	10.00	9.80	71.60	74.00	76.00	10.20	-0.67	0.9983

del.H in.H2O	Vwc ft³	K	del.H@ in.H2O	Qm cfm	Ko	gamma	Acceptability criteria 1.50%	yes/no
0.5	4.99	0.5549	1.51	0.4297	0.7744	1.0157	0.04	yes
0.5	4.99	0.5528	1.51	0.4279	0.7741	1.0167	0.06	yes
1.0	4.99	0.7809	1.43	0.6207	0.7949	1.0153	0.08	yes
1.0	4.99	0.7809	1.44	0.6177	0.7909	1.0177	0.16	yes
1.5	4.99	0.9550	1.44	0.7555	0.7911	1.0163	0.02	yes
1.5	4.99	0.9554	1.45	0.7528	0.7879	1.0161	0.00	yes
2.0	4.99	1.1026	1.43	0.8727	0.7915	1.0146	0.15	yes
2.0	4.99	1.1026	1.43	0.8727	0.7915	1.0146	0.15	yes
2.5	9.98	1.2325	1.43	0.9765	0.7923	1.0146	0.15	yes
2.5	9.98	1.2320	1.43	0.9756	0.7919	1.0192	0.31	yes
AVERAGE			1.45	0.7302	0.7881	1.0161		

Reference method 1/RM/8

AI-25

Probe Identification: 2-B Calibration date: 25-2-15
 Inventory number: 0 Calibration technician responsible: S.Lapointe
 Data processing technician responsible: S.Lapointe
 Barometric pressure: 29.76 "Hg
 Ambient temperature: 72.0 oF Ms: 28.73

NOZZLES	SCALE	PITOT REFERENCE del p	PITOT "S" TYPE del p	Vs ft/s	Cv
WITHOUT NOZZLE	1	0.827	1.312	61.333	0.794
	2	0.542	0.863	49.646	0.792
	3	0.372	0.592	41.152	0.793
	4	0.252	0.406	33.852	0.788
	5	0.159	0.254	26.881	0.790
	6	0.088	0.139	19.982	0.795
Dia. 1/8 No. 3	1	0.825	1.271	61.247	0.806
	2	0.542	0.843	49.665	0.802
	3	0.370	0.578	41.025	0.801
	4	0.252	0.397	33.852	0.797
	5	0.157	0.248	26.686	0.795
	6	0.086	0.135	19.787	0.798
Dia. 3/16 No. 3	1	0.826	1.221	61.292	0.822
	2	0.543	0.815	49.701	0.816
	3	0.373	0.558	41.185	0.818
	4	0.262	0.383	34.524	0.827
	5	0.158	0.241	26.780	0.810
	6	0.086	0.131	19.764	0.809
Dia. 1/4 No. 3	1	0.827	1.220	61.318	0.823
	2	0.545	0.812	49.802	0.820
	3	0.370	0.567	41.041	0.808
	4	0.254	0.386	33.973	0.811
	5	0.159	0.243	26.847	0.808
	6	0.088	0.132	19.959	0.814
Dia. 5/16 No. 3	1	0.824	1.184	61.218	0.834
	2	0.541	0.790	49.600	0.828
	3	0.370	0.542	41.041	0.827
	4	0.250	0.376	33.684	0.815
	5	0.158	0.238	26.780	0.814
	6	0.086	0.131	19.787	0.812
Dia. 3/8 No. 3	1	0.826	1.187	61.288	0.834
	2	0.539	0.786	49.513	0.828
	3	0.371	0.541	41.075	0.828
	4	0.250	0.379	33.731	0.813
	5	0.157	0.238	26.686	0.812
	6	0.091	0.131	20.376	0.834
Dia. 7/16 No. 3	1	0.821	1.199	61.110	0.828
	2	0.539	0.794	49.495	0.824
	3	0.367	0.547	40.836	0.818
	4	0.247	0.377	33.508	0.810
	5	0.155	0.241	26.524	0.802
	6	0.084	0.130	19.579	0.805
Dia. 1/2 No. 3	1	0.822	1.212	61.151	0.824
	2	0.538	0.801	49.440	0.819
	3	0.366	0.555	40.786	0.812
	4	0.248	0.383	33.582	0.805
	5	0.155	0.244	26.558	0.798
	6	0.085	0.136	19.614	0.790

NOTICE: Shows the average of three reading taken during calibration.

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**AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
SVOC**

Test ---	Date ----	Time -----	Filter mg	Probe mg	Cyclone mg	Vmeter ft ³	Dstack inches	Period minutes
1	June 19, 2015	14:33 - 17:33				117.27	38.00	5

O2 (% v/v) Dry basis	CO2 (% v/v) Dry basis	CO (ppmv) Dry basis	Vol. water mL	Pbar "Hg	Dnozzle inch	Cpitot ---	γ ----	Pstatic "H2O
15.90	3.81	42.8	84.6	29.56	0.490	0.811	0.9847	-0.10
SO2	H2							
0	0							

Traverse #1								
Point	Tstack °F	ΔP "H2O	ΔH "H2O	Volume ft ³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1127	0.070	0.51	64.40	80	80	96.5	25.0
	1127	0.070	0.51	67.56	80	80		
2	1132	0.070	0.51	67.56	84	82	101.0	25.1
	1132	0.070	0.51	70.88	84	82		
3	1130	0.070	0.51	70.88	84	82	99.1	25.0
	1130	0.070	0.51	74.14	84	82		
4	1133	0.070	0.51	74.14	85	84	100.1	25.1
	1133	0.070	0.51	77.44	85	84		
5	1130	0.070	0.52	77.44	88	86	98.4	25.0
	1130	0.070	0.52	80.70	88	86		
6	1128	0.080	0.60	80.70	88	86	99.6	26.8
	1128	0.080	0.60	84.23	88	86		
7	1126	0.080	0.60	84.23	90	87	99.8	26.7
	1126	0.080	0.60	87.78	90	87		
8	1123	0.065	0.48	87.78	84	84	99.9	24.1
	1123	0.065	0.48	90.96	84	84		
9	1123	0.070	0.52	90.96	84	84	96.9	25.0
	1123	0.070	0.52	94.16	84	84		
10	1129	0.070	0.52	94.16	84	84	99.8	25.0
	1129	0.070	0.52	97.45	84	84		
11	1129	0.065	0.48	97.45	82	82	97.9	24.1
	1129	0.065	0.48	100.55	82	82		
12	1130	0.070	0.51	100.55	82	82	99.0	25.0
	1130	0.070	0.51	103.80	82	82		
13	1122	0.070	0.52	103.80	82	82	100.3	25.0
	1122	0.070	0.52	107.10	82	82		
14	1122	0.070	0.52	107.10	82	82	98.4	25.0
	1122	0.070	0.52	110.34	82	82		
15	1120	0.070	0.51	110.34	80	80	99.3	25.0
	1120	0.070	0.51	113.60	80	80		
16	1120	0.070	0.51	113.60	80	80	99.9	25.0
	1120	0.070	0.51	116.88	80	80		
17	1118	0.065	0.48	116.88	80	80	98.6	24.0
	1118	0.065	0.48	120.00	80	80		
18	1118	0.065	0.48	120.00	80	80	98.0	24.0
	1118	0.065	0.48	123.10	80	80		
Average	1126	0.070	0.516	58.70	83	83	99.0	25.0

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AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
SVOC

Test #1, Traverse #2								
Point	Tstack °F	ΔP "H ₂ O	ΔH "H ₂ O	Volume ft ³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1116	0.065	0.48	123.10	81	81	98.3	24.0
	1116	0.065	0.48	126.22	81	81		
2	1116	0.065	0.48	126.22	81	81	100.2	24.0
	1116	0.065	0.48	129.40	81	81		
3	1119	0.070	0.52	129.40	81	81	99.4	25.0
	1119	0.070	0.52	132.67	81	81		
4	1119	0.070	0.52	132.67	81	81	98.2	25.0
	1119	0.070	0.52	135.90	81	81		
5	1120	0.070	0.51	135.90	80	80	99.0	25.0
	1120	0.070	0.51	139.15	80	80		
6	1122	0.070	0.51	139.15	80	80	100.3	25.0
	1122	0.070	0.51	142.44	80	80		
7	1128	0.070	0.51	142.44	80	80	98.4	25.0
	1128	0.070	0.51	145.66	80	80		
8	1129	0.065	0.48	145.66	81	81	98.4	24.1
	1129	0.065	0.48	148.77	81	81		
9	1133	0.070	0.51	148.77	84	80	98.5	25.1
	1133	0.070	0.51	152.00	84	80		
10	1133	0.070	0.51	152.00	84	82	98.3	25.1
	1133	0.070	0.51	155.23	84	82		
11	1130	0.065	0.48	155.23	84	82	99.1	24.1
	1130	0.065	0.48	158.37	84	82		
12	1130	0.080	0.59	158.37	85	82	98.6	26.8
	1130	0.080	0.59	161.84	85	82		
13	1131	0.080	0.59	161.84	85	82	98.9	26.8
	1131	0.080	0.59	165.32	85	82		
14	1127	0.070	0.52	165.32	85	82	98.9	25.0
	1127	0.070	0.52	168.58	85	82		
15	1139	0.070	0.51	168.58	85	82	99.6	25.1
	1139	0.070	0.51	171.85	85	82		
16	1140	0.070	0.51	171.85	86	83	98.8	25.1
	1140	0.070	0.51	175.10	86	83		
17	1144	0.070	0.51	175.10	86	83	98.7	25.2
	1144	0.070	0.51	178.34	86	83		
18	1155	0.070	0.51	178.34	86	83	101.7	25.2
	1155	0.070	0.51	181.67	86	83		

Average	1130	0.070	0.514	58.57	83	81	99.1	25.0
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Ave. test	1128	0.070	0.515	117.27	83	82	99.1	25.0
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Velocity		Volumetric flow rates				Temperature		Moisture
ft/s	m/s	ACFM	SDCFM	m ³ /h	Rm ³ /h	°F	°C	% v/v
25.0	7.6	11822	3813	20089	6479	1128	609	3.5

Total part.	Gas sample volume		Verification of Isokinetic					
mg	SDCF	Rm ³	Nb readings	Nb non Iso	Nb < 90%	Nb > 110%	Iso max.	Iso min.
0	113.08	3.202	36	0	0	0	101.7	96.5

Pstack "Hg	Pmeter "Hg	Md g/g-mole	Ms g/g-mole	Bwo -----	Ratio Vs max / Vs min -----	Vs max. ft/s	Vs min. ft/s
29.55	29.60	29.25	28.86	0.035	1.1	26.8	24.0

Particulate concentrations				Emission mass flow rate	
gr/ACF	gr/SDCF	mg/m ³	mg/Rm ³	lb/h	kg/h
0.000	0.000	0	0	0.0	0.0

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

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**AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
SVOC**

Test ---	Date ----	Time -----	Filter mg	Probe mg	Cyclone mg	Vmeter ft ³	Dstack inches	Period minutes
2	June 20, 2015	12:55 - 15:55				119.54	38.00	5

O2 (% v/v) Dry basis	CO2 (% v/v) Dry basis	CO (ppmv) Dry basis	Vol. water mL	Pbar "Hg	Dnozzle inch	Cpitot ----	γ ----	Pstatic "H2O
15.84	3.78	11.3	121.5	29.45	0.490	0.811	0.9847	-0.10
SO2	H2							
0	0							

Traverse #1								
Point	Tstack °F	ΔP "H2O	ΔH "H2O	Volume ft ³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1053	0.070	0.54	82.23	78	78	100.3	24.5
	1053	0.070	0.54	85.55	78	78		
2	1053	0.070	0.54	85.55	78	78	99.1	24.5
	1053	0.070	0.54	88.83	78	78		
3	1054	0.070	0.53	88.83	76	76	101.3	24.6
	1054	0.070	0.53	92.17	76	76		
4	1059	0.070	0.53	92.17	76	76	99.4	24.6
	1059	0.070	0.53	95.44	76	76		
5	1055	0.070	0.53	95.44	76	76	99.2	24.6
	1055	0.070	0.53	98.71	76	76		
6	1052	0.080	0.61	98.71	76	76	101.3	26.2
	1052	0.080	0.61	102.28	76	76		
7	1046	0.080	0.61	102.28	77	77	99.2	26.2
	1046	0.080	0.61	105.79	77	77		
8	1040	0.065	0.50	105.79	77	77	99.5	23.6
	1040	0.065	0.50	108.97	77	77		
9	1047	0.070	0.54	108.97	78	78	99.5	24.5
	1047	0.070	0.54	112.27	78	78		
10	1047	0.070	0.54	112.27	78	78	102.2	24.5
	1047	0.070	0.54	115.66	78	78		
11	1047	0.065	0.50	115.66	78	78	99.2	23.6
	1047	0.065	0.50	118.83	78	78		
12	1046	0.070	0.54	118.83	78	78	98.9	24.5
	1046	0.070	0.54	122.11	78	78		
13	1052	0.070	0.54	122.11	79	79	101.0	24.5
	1052	0.070	0.54	125.46	79	79		
14	1060	0.070	0.53	125.46	79	79	100.4	24.6
	1060	0.070	0.53	128.78	79	79		
15	1048	0.070	0.54	128.78	80	80	100.4	24.5
	1048	0.070	0.54	132.12	80	80		
16	1048	0.070	0.54	132.12	80	80	99.8	24.5
	1048	0.070	0.54	135.44	80	80		
17	1051	0.065	0.50	135.44	82	82	100.1	23.6
	1051	0.065	0.50	138.66	82	82		
18	1051	0.065	0.50	138.66	82	82	100.1	23.6
	1051	0.065	0.50	141.88	82	82		
Average	1051	0.070	0.537	59.65	78	78	100.1	24.5

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AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
SVOC

Test #2, Traverse #2								
Point	Tstack °F	ΔP "H ₂ O	ΔH "H ₂ O	Volume ft ³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1055	0.065	0.50	141.88	83	83	97.0	23.7
	1055	0.065	0.50	145.00	83	83		
2	1054	0.065	0.50	145.00	83	83	101.6	23.7
	1054	0.065	0.50	148.27	83	83		
3	1048	0.070	0.54	148.27	84	84	99.3	24.5
	1048	0.070	0.54	151.60	84	84		
4	1047	0.070	0.54	151.60	85	85	98.8	24.5
	1047	0.070	0.54	154.92	85	85		
5	1038	0.070	0.55	154.92	86	86	98.1	24.4
	1038	0.070	0.55	158.23	86	86		
6	1041	0.070	0.55	158.23	86	86	99.3	24.4
	1041	0.070	0.55	161.58	86	86		
7	1033	0.070	0.55	161.58	85	85	99.6	24.4
	1033	0.070	0.55	164.94	85	85		
8	1030	0.065	0.50	164.94	84	84	99.4	23.5
	1030	0.065	0.50	168.17	84	84		
9	1050	0.070	0.54	168.17	84	84	100.0	24.5
	1050	0.070	0.54	171.52	84	84		
10	1040	0.070	0.54	171.52	82	82	100.0	24.4
	1040	0.070	0.54	174.87	82	82		
11	1033	0.065	0.51	174.87	82	82	99.9	23.5
	1033	0.065	0.51	178.10	82	82		
12	1050	0.080	0.62	178.10	82	82	99.8	26.2
	1050	0.080	0.62	181.66	82	82		
13	1055	0.080	0.62	181.66	82	82	98.0	26.3
	1055	0.080	0.62	185.15	82	82		
14	1049	0.070	0.54	185.15	80	80	98.9	24.5
	1049	0.070	0.54	188.44	80	80		
15	1050	0.070	0.54	188.44	80	80	100.1	24.5
	1050	0.070	0.54	191.77	80	80		
16	1051	0.070	0.54	191.77	80	80	100.5	24.5
	1051	0.070	0.54	195.11	80	80		
17	1035	0.070	0.54	195.11	80	80	99.7	24.4
	1035	0.070	0.54	198.44	80	80		
18	1038	0.070	0.54	198.44	80	80	99.8	24.4
	1038	0.070	0.54	201.77	80	80		

Average	1044	0.070	0.542	59.89	83	83	99.4	24.5
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Ave. test	1047	0.070	0.539	119.54	80	80	99.7	24.5
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Velocity		Volumetric flow rates				Temperature		Moisture
ft/s	m/s	ACFM	SDCFM	m ³ /h	Rm ³ /h	°F	°C	% v/v
24.5	7.5	11573	3862	19666	6562	1047	564	4.8

Total part.	Gas sample volume		Verification of Isokinetic					
mg	SDCF	Rm ³	Nb readings	Nb non Iso	Nb < 90%	Nb > 110%	Iso max.	Iso min.
0.00	115.30	3.265	36	0	0	0	102.2	97.0

Pstack "Hg	Pmeter "Hg	Md g/g-mole	Ms g/g-mole	Bwo -----	Ratio Vs max / Vs min -----	Vs max. ft/s	Vs min. ft/s
29.44	29.49	29.24	28.70	0.048	1.1	26.3	23.5

Particulate concentrations				Emission mass flow rate	
gr/ACF	gr/SDCF	mg/m ³	mg/Rm ³	lb/h	kg/h
0.000	0.000	0	0	0.0	0.0

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

AI-30

**AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
SVOC**

Test ---	Date ----	Time -----	Filter mg	Probe mg	Cyclone mg	Vmeter ft ³	Dstack inches	Period minutes
3	June 21, 2015	09:30 - 12:30				118.51	38.00	5

O2 (% v/v) Dry basis	CO2 (% v/v) Dry basis	CO (ppmv) Dry basis	Vol. water mL	Pbar "Hg	Dnozzle inch	Cpitot ---	γ ----	Pstatic "H2O
15.03	4.09	14.2	116.9	29.48	0.490	0.811	0.9847	-0.10
SO2	H2							
0	0							

Traverse #1								
Point	Tstack °F	ΔP "H2O	ΔH "H2O	Volume ft ³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	975	0.070	0.55	2.05	60	60	100.1	23.9
	975	0.070	0.55	5.34	60	60		
2	971	0.070	0.55	5.34	60	60	98.7	23.8
	971	0.070	0.55	8.59	60	60		
3	989	0.070	0.54	8.59	60	60	98.4	24.0
	989	0.070	0.54	11.81	60	60		
4	978	0.070	0.54	11.81	60	60	99.6	23.9
	978	0.070	0.54	15.08	60	60		
5	989	0.070	0.54	15.08	60	60	99.9	24.0
	989	0.070	0.54	18.35	60	60		
6	999	0.080	0.61	18.35	60	60	100.7	25.7
	999	0.080	0.61	21.86	60	60		
7	1012	0.080	0.61	21.86	60	60	100.9	25.9
	1012	0.080	0.61	25.36	60	60		
8	1011	0.065	0.49	25.36	60	60	101.0	23.3
	1011	0.065	0.49	28.52	60	60		
9	1013	0.070	0.53	28.52	60	60	100.1	24.2
	1013	0.070	0.53	31.77	60	60		
10	1023	0.070	0.53	31.77	60	60	100.2	24.3
	1023	0.070	0.53	35.01	60	60		
11	1022	0.065	0.49	35.01	60	60	100.7	23.4
	1022	0.065	0.49	38.15	60	60		
12	1001	0.070	0.54	38.15	60	60	101.9	24.1
	1001	0.070	0.54	41.47	60	60		
13	1020	0.070	0.53	41.47	60	60	100.7	24.2
	1020	0.070	0.53	44.73	60	60		
14	1022	0.070	0.53	44.73	63	63	100.5	24.3
	1022	0.070	0.53	48.00	63	63		
15	1024	0.070	0.53	48.00	66	66	98.8	24.3
	1024	0.070	0.53	51.23	66	66		
16	1030	0.070	0.53	51.23	68	68	99.5	24.3
	1030	0.070	0.53	54.49	68	68		
17	1031	0.065	0.50	54.49	70	70	100.0	23.5
	1031	0.065	0.50	57.66	70	70		
18	1031	0.065	0.50	57.66	70	70	98.8	23.5
	1031	0.065	0.50	60.79	70	70		

Average	1008	0.070	0.536	58.74	62	62	100.0	24.1
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A1-31

AGNICO-EAGLE MINES LTD, MEADOWBANK DIVISION
BAKER LAKE, NUNAVUT
OUTLET OF INCINERATOR
SVOC

Test #3, Traverse #2								
Point	Tstack °F	ΔP "H ₂ O	ΔH "H ₂ O	Volume ft ³	Tinlet °F	Toutlet °F	Isokinetic %	Velocity ft/s
1	1034	0.065	0.50	60.79	73	73	100.5	23.5
	1034	0.065	0.50	63.99	73	73		
2	1037	0.065	0.50	63.99	74	74	99.5	23.5
	1037	0.065	0.50	67.16	74	74		
3	1035	0.070	0.54	67.16	76	76	99.1	24.4
	1035	0.070	0.54	70.45	76	76		
4	1036	0.070	0.54	70.45	76	76	97.9	24.4
	1036	0.070	0.54	73.70	76	76		
5	1040	0.070	0.54	73.70	76	76	100.2	24.4
	1040	0.070	0.54	77.02	76	76		
6	1048	0.070	0.54	77.02	77	77	100.2	24.5
	1048	0.070	0.54	80.34	77	77		
7	1056	0.070	0.53	80.34	78	78	100.0	24.5
	1056	0.070	0.53	83.65	78	78		
8	1057	0.065	0.50	83.65	78	78	101.9	23.7
	1057	0.065	0.50	86.90	78	78		
9	1053	0.070	0.54	86.90	78	78	100.2	24.5
	1053	0.070	0.54	90.22	78	78		
10	1059	0.070	0.53	90.22	79	79	100.2	24.6
	1059	0.070	0.53	93.54	79	79		
11	1045	0.065	0.50	93.54	80	80	100.5	23.6
	1045	0.065	0.50	96.77	80	80		
12	1049	0.080	0.62	96.77	81	81	99.8	26.2
	1049	0.080	0.62	100.33	81	81		
13	1040	0.080	0.62	100.33	82	82	99.1	26.1
	1040	0.080	0.62	103.88	82	82		
14	1037	0.070	0.55	103.88	82	82	99.5	24.4
	1037	0.070	0.55	107.22	82	82		
15	1055	0.070	0.54	107.22	83	83	99.7	24.5
	1055	0.070	0.54	110.55	83	83		
16	1050	0.070	0.54	110.55	83	83	99.2	24.5
	1050	0.070	0.54	113.87	83	83		
17	1049	0.070	0.54	113.87	84	84	99.0	24.5
	1049	0.070	0.54	117.19	84	84		
18	1055	0.070	0.54	117.19	84	84	100.7	24.5
	1055	0.070	0.54	120.56	84	84		

Average	1046	0.070	0.539	59.77	79	79	99.8	24.5
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Ave. test	1027	0.070	0.538	118.51	71	71	99.9	24.3
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Velocity		Volumetric flow rates				Temperature		Moisture
ft/s	m/s	ACFM	SDCFM	m ³ /h	Rm ³ /h	°F	°C	% v/v
24.3	7.4	11480	3896	19508	6620	1027	553	4.6

Total part.	Gas sample volume		Verification of Isokinetic					
mg	SDCF	Rm ³	Nb readings	Nb non Iso	Nb < 90%	Nb > 110%	Iso max.	Iso min.
0.00	116.54	3.300	36	0	0	0	101.9	97.9

Pstack "Hg	Pmeter "Hg	Md g/g-mole	Ms g/g-mole	Bwo -----	Ratio Vs max / Vs min -----	Vs max. ft/s	Vs min. ft/s
29.47	29.52	29.26	28.74	0.046	1.1	26.2	23.3

Particulate concentrations				Emission mass flow rate	
gr/ACF	gr/SDCF	mg/m ³	mg/Rm ³	lb/h	kg/h
0.000	0.000	0	0	0.0	0.0

"R" or "Reference Conditions" at 25°C, 101.3 kPa, dry basis.

AI-32

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Meadobank	Contrôle :	#535 Y = 0.9847	Ko =	1.838	Conduit :	Dia ("):	38	Porte (")	6
Endroit :	Encosdel	Sonde :	#26	Cv =	0.811	Diamètre :	Av :	6	Ap :	2
Date :	19-06-2015 / Projet: R	Buse :	#17	Dn =	0.490	Caisson #				
Site :	Environnement	Humidité supposée % =	4							
Essai :	1 organique	Pression :	Pbar ("Hg) =			Pstat ("H2O) =	-0.10			
						Fuite Avant :	0.000	"H2O @	-16	"Hg
						Fuite Après :		"H2O @		"Hg

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum ("Hg)	% ISO (%)	Gaz		
						Tmi (°F)	Tmo (°F)	Temp (°F)	Sonde (°F)	Four (°F)		O2 (%)	CO2 (%)	CO (ppmv / %)
1	14:33	1127	0.07	0.51	64.80	80	80	-	-	250	97.6			
2	14:38	1133	0.07	0.51	67.56	84	82	-	-		102.1			
3	14:43	1130	0.07	0.51	70.88	84	82	-	-		100.4			
4	14:48	1133	0.07	0.51	74.14	85	84	-	-		101.3			
5	14:53	1130	0.07	0.52	77.44	88	86	-	-		99.4			
6	14:58	1128	0.08	0.60	80.70	88	86	-	-		100.7			
7	15:03	1126	0.08	0.60	84.23	90	87	-	-		100.9			
8	15:08	1123	0.065	0.48	87.78	84	84	-	-		101.0			
9	15:13	1123	0.07	0.52	90.96	84	84	-	-		97.4			
10	15:18	1129	0.07	0.52	94.16	84	84	-	-		100.9			
11	15:23	1129	0.065	0.48	97.45	82	82	-	-		99.0			
12	15:28	1130	0.07	0.51	100.55	82	82	-	-	250	100.1			
Constante => K = 21.52											A% = 110.72			

Échantillonneur: Pierre-Luc Giguère

Assistant à l'échantillonneur:

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Meadowbank	Contrôle :	#535 Y = D.9847	Ko =	1.1338	Conduit :	Dia (") :	38	Porte (") :	6
Endroit :	Munawit	Sonde :	#25 Cv = 0.811			Diamètre :	Av :	6	Ap :	2
Date :	14.04.2015 / Projet : R	Buse :	#12 Dn = 0.90	Caisson #		Feuille :		2	de	3
Site :	incinérateur	Humidité supposée % =	4			Fuite Avant :	"H2O @		"Hg	
Essai :	1 Oregonique	Pression :	Pbar ("Hg) =	-0.10		Fuite Après :	"H2O @		"Hg	

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum ("Hg)	% ISO (%)	Gaz		
						Tmi (°F)	Tmo (°F)	Temp (°F)	Four (°F)			O2 (%)	CO2 (%)	CO (ppmv / %)
13	15:33	1122	0.07	0.52	103.20	82	82	-	250	-2	101.3			
14	15:38	1122	0.07	0.52	103.10	82	82	-		-2	99.5			
15	15:43	1120	0.07	0.51	110.34	80	80	-		-2	100.4			
16	15:48	1120	0.07	0.51	113.60	80	80	-		-2	101.0			
17	15:53	1118	0.065	0.48	116.88	80	80	-		-2	99.7			
18	15:58	1118	0.065	0.48	120.00	80	80	-		-2	99.0			
19	16:03	1116	0.065	0.48	123.10	80	80	-		-4	99.4			
20	16:08	1116	0.065	0.48	126.22	81	81	-		-4	101.3			
21	16:13	1119	0.07	0.52	129.40	81	81	-		-4	100.5			
22	16:18	1119	0.07	0.52	132.67	81	81	-		-4	99.3			
23	16:23	1120	0.07	0.51	135.90	80	80	-		-4	100.1			
24	16:28	1122	0.07	0.51	139.15	80	80	-	250	-11	101.4			
Constante => K = 21.52											A% = 110.72			

Échantillonneur: P-L Giguère

Assistant à l'échantillonneur:

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Megadonk	Contrôle :	#535	Y =	0.8847	Ko =	1.1338	Conduit :	Dia (") :	3.8	Porte (") :	6
Endroit :	Nunavut	Sonde :	#26	Cv =	0.81			Diamètre :	Av :	6	Ap :	2
Date :	19-06-2015	Projet :	R	Buse :	#1/2	Dn =	0.490	Caisson #				
Site :	incinerateur	Humidité supposée % =	21						Fuite Avant :	"H2O @		"Hg
Essai :	1 ORGanique	Pression :	Pbar ("Hg) =			Pstat ("H2O) =	-0.10		Fuite Après :	0.05	"H2O @	-7
												"Hg

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum ("Hg)	% ISO (%)	Gaz			
						Tmi (°F)	Tmo (°F)	Timp (°F)	Sonde (°F)	Four (°F)		O2 (%)	CO2 (%)	CO (ppmv / %)	NOx (ppmv)

7	16:33	1128	0.075	0.51	142.44	80	80	80	-	250	-4	99.3			
8	16:38	1129	0.065	0.48	145.66	81	81	81	-		-4	99.5			
9	16:43	1133	0.07	0.51	144.77	84	80	80	-		-4	99.4			
10	16:48	1133	0.07	0.51	152.00	84	82	82	-		-4	99.4			
11	16:53	1130	0.065	0.48	155.27	84	82	82	-		-4	100.1			
12	16:58	1130	0.08	0.59	158.37	85	82	82	-		-5	99.7			
13	17:03	1131	0.08	0.59	161.84	85	82	82	-		-5	100.0			
14	17:08	1127	0.07	0.52	165.32	85	82	82	-		-5	100.0			
15	17:13	1139	0.07	0.51	168.58	85	82	82	-		-5	100.7			
16	17:18	1140	0.07	0.51	171.85	86	83	83	-		-5	100.0			
17	17:23	1144	0.07	0.51	175.10	86	83	83	-		-5	99.8			
18	17:28	1155	0.07	0.51	178.34	86	83	83	-	250	-5	102.9			
830	17:33				181.67										

Constante => K = 21.52 A% = 110.72

Échantillonneur: P-L Giguere

Assistant à l'échantillonneur:

WEIGHT SHEET

Company	Agnico-Eagle
Location	Meadowbank
Date	19 / 06 / 2015
Site	Incineration
Train #	(SVOC-13)
Test #	1 (PCDD/DF)

DATA	
Pbar:	29.56 po.Hg
G	O ₂ % 15.90
	CO ₂ % 3.81
A	CO ppm 42.8
Z	CO %

ITEM	Final weight	Initial weight	Water weight
Cooler	158.8	156.6	2.2
XAD-2 resin	207.7	199.4	8.3
Water trap	370.9	270.7	100.2
Impinger #1	523.1	573.8	- 50.7
Impinger #2	469.1	468.6	0.5
Impinger #3 (silica gel)	714.7	690.6	24.1
		Final weight	84.6

Preparation	Prepared by	Recovered	Approved by
Date			
Laboratory			
On site			

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie: <u>Mendobro</u>	Contrôle: #535 Y= 0.9847	Ko = 1.1338	Conduit: Dia ("): 3.8	Porte ("): 6
Endroit: <u>Nunavut</u>	Sonde: #26	Cv = 0.811	Diamètre: Av: 6	Ap: 2
Date: 20.06.2015	Projet: R	Buse: #1/2	Dn = 0.490	Caisson #
Site: <u>incinérateur</u>	Humidité supposée % =	4	Fuite Avant: 0.000	"H2O @ - 16 "Hg
Essai: <u>2 organique</u>	Pression: Pbar ("Hg) =	- 0.10	Fuite Après:	"H2O @

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum ("Hg)	% ISO (%)	Gaz			
						Tmi (°F)	Tmo (°F)	Temp (°F)	Sonde (°F)	Four (°F)		O2 (%)	CO2 (%)	CO (ppmv / %)	NOx ppmv
1	12:55	1053	0.07	0.54	82.23	78	78	78	-	250	-4	100.4			
2	13:00	1053	0.07	0.54	85.55	78	78	78	-		-4	99.3			
3	13:05	1054	0.07	0.53	88.83	76	76	76	-		-4	101.5			
4	13:10	1059	0.07	0.53	92.17	76	76	76	-		-4	99.5			
5	13:15	1055	0.07	0.53	95.44	76	76	76	-		-4	99.4			
6	13:20	1052	0.08	0.61	98.71	77	77	77	-		-5	101.4			
7	13:25	1046	0.08	0.61	102.08	77	77	77	-		-5	99.3			
8	13:30	1040	0.065	0.50	105.79	77	77	77	-		-4	99.6			
9	13:35	1047	0.07	0.54	108.97	78	78	78	-		-4	99.6			
10	13:40	1047	0.07	0.54	112.27	78	78	78	-		-4	102.4			
11	13:45	1047	0.065	0.50	115.66	78	78	78	-		-4	99.3			
12	13:50	1046	0.07	0.54	118.83	78	78	78	-	250	-4	99.0			
Constante => K = 21.52											A% = 110.72				

Échantillonneur: P-L Coisne Assistant à l'échantillonneur: _____

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie : Meadobant	Contrôle : # 285 Y = 0.9847	Ko = 1.338	Conduit: Dia ("): 3.8	Porte (")
Endroit: MANARUT	Sonde: # 25 Cv = 0.811		Diamètre: Av: 6	Ap: 2
Date: 20-06-2015 / Projet: R	Buse: # 1/2 Dn = 0.40	Caisson #	Feuille: 2 de 3	
Site : incinérateur	Humidité supposée % = 4		Fuite Avant: "H2O @	"Hg
Essai: à organique	Pression: Pbar ("Hg) = -0.10	Pstat ("H2O) = -0.10	Fuite Après: "H2O @	"Hg

Point	Heure	TS (°F)	ΔP ("H2O)	ΔH ("H2O)	Volume (pi³)	Température				Vacuum (" Hg)	% ISO (%)	Gaz			
						Tmi (°F)	Tmo (°F)	Temp (°F)	Sonde (°F)			O2 (%)	CO2 (%)	CO (ppmv / %)	NOx (ppmv)
13	13:55	1052	0.07	0.54	122.11	79	79	79	-	-4	101.1				
14	14:00	1066	0.07	0.53	125.46	79	79	79	-	-4	100.5				
15	15:05	1048	0.07	0.54	128.78	80	80	80	-	-4	100.5				
16	16:10	1048	0.07	0.54	132.12	80	80	80	-	-4	99.9				
17	17:15	1051	0.065	0.50	135.44	80	80	80	-	-4	100.3				
18	18:20	1051	0.065	0.50	138.66	80	80	80	-	-4	100.3				
18	18:25	1055	0.065	0.50	141.88	83	83	83	-	-4	97.1				
17	17:30	1054	0.065	0.50	145.00	83	83	83	-	-4	101.8				
16	16:35	1048	0.070	0.54	148.27	84	84	84	-	-4	99.5				
15	15:40	1043	0.070	0.54	151.60	85	85	85	-	-4	99.0				
14	14:45	1038	0.07	0.55	154.92	86	86	86	-	-4	98.2				
13	13:50	1041	0.07	0.55	158.23	86	86	86	-	-4	99.5				
						Constante => K = 21.52				A% = 10.72					

Échantillonneur: **P-L Giguere**

Assistant à l'échantillonneur:

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Meadowbank	Contrôle :	# 535 Y = 0.9847	Ko =	1.1338	Conduit :	Dia ("):	3.8	Porte (")	6
Endroit :	Nunavut	Sonde :	# 26 Cv = 0.811			Diamètre :	Av :	6	Ap :	2
Date :	20-06-2020	Projet :	R			Buse :	# 1/2 Dn = 0.490	Caisson #		
Site :	incinérateur	Humidité supposée % :	4						"H2O @	"Hg
Essai :	2 organique	Pression :	Pbar ("Hg) =			Pstat ("H2O) =	- 0.10		"H2O @ - 10	"Hg

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum ("Hg)	% ISO (%)	Gaz			
						Tmi (°F)	Tmo (°F)	Temp (°F)	Four (°F)			O2 (%)	CO2 (%)	CO (ppmv / %)	NOx ppmv
12	14:55	1033	0.07	0.55	161.58	85	85	/	-	250	99.7				
11	15:00	1030	0.065	0.50	164.44	84	84	/	-		99.5				
10	15:05	1050	0.07	0.54	168.17	84	84	/	-		100.1				
9	15:10	1040	0.07	0.54	171.50	82	82	/	-		100.2				
8	15:15	1035	0.065	0.51	174.07	82	82	/	-		100.0				
7	15:20	1050	0.08	0.62	178.10	82	82	/	-		99.9				
6	15:25	1055	0.08	0.62	181.66	80	80	/	-		90.1				
5	15:30	1049	0.07	0.54	185.15	80	80	/	-		99.0				
4	15:35	1050	0.07	0.54	188.44	80	80	/	-		100.3				
3	15:40	1051	0.07	0.54	191.73	80	80	/	-		100.6				
2	15:45	1035	0.07	0.54	195.11	80	80	/	-		99.4				
1	15:50	1038	0.07	0.54	198.44	80	80	/	-		99.9				
Fin	15:55				201.72			/	-						
										Constante => K =		21.52			
												A% = 110.72			

Échantillonneur: PL Giguere

Assistant à l'échantillonneur:

WEIGHT SHEET

Company	Agnico-Eagle
Location	Meadowbank
Date	20 / 06 / 2015
Site	incinerator
Train #	(SVOC-16)
Test #	2 (PCDD/DF)

DATA	
Pbar: 29.45 po.Hg	
G	O ₂ % 15.84
	CO ₂ % 3.78
A	CO ppm 11.3
Z	CO %

ITEM	Final weight	Initial weight	Water weight
Cooler	154.5	153.6	0.9
XAD-2 resin	246.3	239.9	6.4
Water trap	391.0	280.1	10.9
Impinger #1	515.1	518.9	-3.8
Impinger #2	473.4	471.9	1.5
Impinger #3 (silica gel)	694.8	694.2	5.6
Final weight			121.5

Preparation	Prepared by	Recovered	Approved by
Date			
Laboratory			
On site			

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie: <u>Mendocin</u>	Contrôle: # <u>51051</u>	<u>0.9843</u>	Ko = <u>1.1338</u>	Conduit: Dia ("): <u>38</u>	Porte ("): <u>6</u>
Endroit: <u>Nunavut</u>	Sonde: # <u>25</u>	Cv = <u>0.81</u>		Diamètre: Av: <u>6</u>	Ap: <u>2</u>
Date: <u>21-06-2015</u>	Projet: <u>R</u>	Buse: # <u>13</u>	Dn = <u>0.490</u>	Caïsson #	
Site: <u>incineration</u>		Humidité supposée % = <u>4</u>		Fuite Avant: <u>0.22</u>	"H2O @ <u>16</u> "Hg
Essai: <u>3 organique</u>		Pression: Pbar ("Hg) = <u>0.10</u>	Pstat ("H2O) = <u>0.10</u>	Fuite Après: <u>"H2O @</u>	"Hg

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum ("Hg)	% ISO (%)	Gaz			
						Tmi (°F)	Tmo (°F)	Timp (°F)	Sonde (°F)	Four (°F)		O2 (%)	CO2 (%)	CO (ppmv / %)	NOx (ppmv)
1	9:30	975	0.07	0.55	2.05	60	60	/	-	250	100.3	-4			
2	9:35	971	0.07	0.55	5.04	60	60	/	-		98.9	-4			
3	9:40	989	0.07	0.54	8.59	60	60	/	-		98.6	-4			
4	9:45	978	0.07	0.54	11.81	60	60	/	-		99.6	-4			
5	9:50	989	0.07	0.54	15.08	60	60	/	-		100.2	-4			
6	9:55	999	0.08	0.61	18.35	60	60	/	-		100.9	-4			
7	10:00	1012	0.08	0.61	21.86	60	60	/	-		101.1	-4			
8	10:05	1011	0.065	0.49	25.36	60	60	/	-		101.2	-4			
9	10:10	1013	0.07	0.53	28.52	60	60	/	-		100.4	-4			
10	10:15	1023	0.07	0.53	31.77	60	60	/	-		100.4	-4			
11	10:20	1022	0.065	0.49	35.01	60	60	/	-		100.9	-4			
12	10:25	1001	0.07	0.53	38.15	60	60	/	-	250	102.1	-4			
					Constante => K = <u>21.52</u>		A% = <u>100.82</u>								

Échantillonneur: AI-41

P-L Giguere

Assistant à l'échantillonneur:

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie: <i>Meadowbank</i>	Contrôle: # <i>833</i> Y = <i>0.9847</i>	Ko = <i>1.1338</i>	Conduit: Dia ("): <i>38</i>	Porte ("): <i>6</i>
Endroit: <i>Nunavut</i>	Sonde: # <i>26</i> Cv = <i>0.811</i>		Diamètre: Av: <i>6</i>	Ap: <i>2</i>
Date: <i>21-06-2014</i> / Projet: <i>R</i>	Buse: # <i>13</i> Dn = <i>0.490</i>	Caisson #	Feuille: <i>2</i> de <i>3</i>	
Site: <i>inuvik</i>	Humidité supposée % = <i>4</i>		Fuite Avant: "H2O @	"Hg
Essai: <i>3 organique</i>	Pression: Pbar ("Hg) =	Pstat ("H2O) = <i>0.10</i>	Fuite Après: "H2O @	"Hg

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum (" Hg)	% ISO (%)	Gaz		
						Tmi (°F)	Tmo (°F)	Temp (°F)	Sonde (°F)			Four (°F)	O2 (%)	CO2 (%)
13	10:30	1020	0.07	0.53	41.47	60	/	-		250	-4	100.9		
14	10:35	1022	0.07	0.53	44.73	63	/	-			-4	100.9		
15	10:40	1024	0.07	0.53	48.00	66	/	-			-4	99.0		
16	10:45	1030	0.07	0.53	51.23	68	/	-			-4	99.7		
17	10:50	1031	0.065	0.50	54.49	70	/	-			-4	100.3		
18	10:55	1031	0.065	0.50	57.66	70	/	-			-4	99.0		
18	11:00	1034	0.065	0.50	60.79	73	/	-			-4	100.8		
17	10:55	1037	0.065	0.50	63.99	74	/	-			-4	99.7		
16	11:00	1035	0.07	0.54	67.16	76	/	-			-4	99.3		
15	11:05	1036	0.07	0.54	70.45	76	/	-			-4	98.1		
14	11:10	1040	0.07	0.54	73.70	76	/	-			-4	100.4		
13	11:15	1048	0.07	0.54	77.02	77	/	-		250	-4	100.5		

Échantillonneur: *P-L. Goyer* Assistant à l'échantillonneur: _____

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie: Meadville Bank	Contrôle: #335	Y = 0.9847	Ko = 1.1338	Conduit: Dia ("): 38	Porte ("): 6
Endroit: Nant	Sonde: #26	Cv = 0.81		Diamètre: Av: 6	Ap: 3
Date: 21-06-2015/Projet: R	Buse: #12	Dn = 0.490	Caisson #	Feuille: 3	de 3
Site: incinérateur	Humidité supposée % =	4		Fuite Avant: "H2O @	"Hg
Essai: 3 or 4 rigues	Pression: Pbar ("Hg) =		Pstat ("H2O) = -0.110	Fuite Après: 0.000	"H2O @ -10 "Hg

Point	Heure	TS (°F)	▲P ("H2O)	▲H ("H2O)	Volume (pi³)	Température				Vacuum ("Hg)	% ISO (%)	Gaz			
						Tmi (°F)	Tmo (°F)	Temp (°F)	Sonde (°F)	Four (°F)		O2 (%)	CO2 (%)	CO (ppmv / %)	NOx (ppmv)
12	11:30	1056	0.07	0.53	89.34	78	78	78	-	250	100.2				
11	1:35	1057	0.085	0.50	83.65	78	78	78	-		102.2				
10	1:40	1053	0.07	0.54	86.90	78	78	78	-		100.4				
9	1:45	1059	0.07	0.53	90.22	79	79	79	-		100.5				
8	1:50	1045	0.065	0.50	93.54	80	80	80	-		100.8				
7	1:55	1049	0.08	0.62	96.77	81	81	81	-		100.1				
6	12:00	1040	0.08	0.63	100.33	82	82	82	-		99.3				
5	1:05	1037	0.07	0.55	103.88	82	82	82	-		99.8				
4	1:10	1055	0.07	0.54	107.22	83	83	83	-		99.9				
3	1:15	1050	0.07	0.54	110.55	83	83	83	-		99.4				
2	1:20	1044	0.07	0.54	113.87	84	84	84	-		99.2				
1	1:25	1055	0.07	0.54	117.19	84	84	84	-		100.5				
fin	12:30				120.56				-	250	100.5				
Constante => K = 21.52											A% = 110.72				

AI-43

Pierre-Louis Gagnon

Assistant à l'échantillonneur:

Échantillonneur:

WEIGHT SHEET

Company	Agnico-Eagle
Location	Meadowbank
Date	21 / 06 / 2015
Site	Incinerator
Train #	(SVOC-31)
Test #	3 (PCDD/DF)

DATA	
Pbar:	29.48 po.Hg
G	O ₂ % 15.03
A	CO ₂ % 4.09
Z	CO ppm 14.2
	CO %

ITEM	Final weight	Initial weight	Water weight
Cooler	167.1	163.5	3.6
XAD-2 resin	249.0	242.1	6.9
Water trap	362.0	276.1	85.9
Impinger #1	625.8	615.4	10.4
Impinger #2	402.4	402.1	0.3
Impinger #3 (silica gel)	705.0	695.2	9.8
		Final weight	116.9

Preparation	Prepared by	Recovered	Approved by
Date			
Laboratory			
On site			

DONNÉES DE TERRAIN - ÉCHANTILLONNAGE MANUEL

Compagnie :	Meadarbank	Contrôle: # 5858	Ko = 0.9847	Conduit: Dia ("):	Porte (")
Endroit:	Nousant	Sonde: # 26	Cv = 0.81	Diamètre: Av:	Ap:
Date:	21-06-2013 / Projet: R	Buse: # 12	Dn = 0.490	Feuille :	de
Site :	1044444444	Humidité supposée % =			
Essai:	Blanc orange	Pression: Pbar ("Hg) =	Pstat ("H2O) =	Fuite Avant:	"H2O @
				Fuite Après:	"H2O @

[illegible]

Échantillonneur: A1-49

Assistant à l'échantillonneur:

CALIBRATION OF SAMPLING MODULE

Module Identification:	SB_5
Inventory number:	
Atmospheric pressure ("Hg) :	30.00

Responsible calibration :	S.Lapointe
Responsible data entry:	S.Lapointe
Calibration date:	4 Feb 2015
Next calibration date:	4 Feb 2016

del.H in.H2O	Vw ft³	Vd ft³	Tw deg.F	Tdo deg.F	Td deg.F	time min.	del.m in.H2O	factor count.
0.5	5.00	5.11	71.60	75.50	75.50	7.78	-0.30	0.9983
0.5	5.00	5.11	71.60	75.50	75.25	7.78	-0.30	0.9983
1.0	5.00	5.10	71.60	76.00	76.00	5.53	-0.56	0.9983
1.0	5.00	5.09	71.60	76.00	76.00	5.53	-0.56	0.9983
1.5	5.00	5.07	71.60	76.00	76.00	4.50	-0.85	0.9983
1.5	5.00	5.09	71.60	76.00	76.00	4.51	-0.85	0.9983
2.0	10.00	10.10	71.60	75.50	75.50	7.88	-1.10	0.9983
2.0	10.00	10.12	71.60	75.00	75.00	7.91	-1.10	0.9983
2.5	10.00	10.10	71.60	75.50	75.50	7.12	-1.35	0.9983
3.0	10.00	10.11	71.60	76.50	76.50	7.52	-1.62	0.9983

del.H in.H2O	Vwc ft³	K	del.H@ in.H2O	Qm cfm	Ko	gamma	Acceptability criteria 1.50%	yes/no
0.5	4.99	0.5549	0.67	0.6450	1.1624	0.9820	0.27	yes
0.5	4.99	0.5549	0.67	0.6450	1.1624	0.9816	0.31	yes
1.0	4.99	0.7846	0.68	0.9066	1.1555	0.9831	0.17	yes
1.0	4.99	0.7846	0.68	0.9066	1.1555	0.9850	0.03	yes
1.5	4.99	0.9604	0.67	1.1120	1.1579	0.9870	0.23	yes
1.5	4.99	0.9604	0.67	1.1095	1.1553	0.9831	0.16	yes
2.0	9.98	1.1078	0.69	1.2665	1.1433	0.9881	0.35	yes
2.0	9.98	1.1072	0.69	1.2605	1.1384	0.9853	0.06	yes
2.5	9.98	1.2378	0.70	1.3991	1.1304	0.9863	0.17	yes
3.0	9.98	1.3563	0.94	1.3247	0.9767	0.9853	0.07	yes
AVERAGE			0.71	1.0576	1.1338	0.9847		

Reference method 1/RM/8

A1-46

Probe Identification: 2G Calibration date: 24-2-15
 Inventory number: 0 Calibration technician responsible: S.Lapointe
 Data processing technician responsible: S.Lapointe
 Barometric pressure: 29.76 "Hg
 Ambient temperature: 72.0 oF Ms : 28.73

NOZZLES	SCALE	PITOT REFERENCE del p	PITOT "S" TYPE del p	Vs ft/s	Cv
WITHOUT NOZZLE	1	0.834	1.215	61.570	0.828
	2	0.547	0.822	49.888	0.816
	3	0.378	0.572	41.433	0.812
	4	0.253	0.391	33.899	0.804
	5	0.162	0.247	27.125	0.809
	6	0.088	0.133	20.050	0.814
Dia. 1/8 No. 3	1	0.830	1.215	61.440	0.827
	2	0.547	0.830	49.870	0.812
	3	0.373	0.574	41.163	0.805
	4	0.255	0.393	34.066	0.806
	5	0.158	0.249	26.796	0.797
	6	0.087	0.134	19.856	0.805
Dia. 3/16 No. 3	1	0.831	1.231	61.470	0.822
	2	0.545	0.823	49.788	0.814
	3	0.372	0.574	41.152	0.806
	4	0.253	0.401	33.892	0.794
	5	0.159	0.252	26.881	0.794
	6	0.088	0.140	20.005	0.793
Dia. 1/4 No. 3	1	0.827	1.223	61.322	0.822
	2	0.545	0.824	49.765	0.813
	3	0.374	0.577	41.218	0.804
	4	0.251	0.396	33.805	0.797
	5	0.157	0.248	26.694	0.795
	6	0.087	0.134	19.913	0.807
Dia. 5/16 No. 3	1	0.834	1.211	61.566	0.830
	2	0.543	0.809	49.669	0.819
	3	0.369	0.566	40.964	0.808
	4	0.252	0.390	33.866	0.804
	5	0.159	0.245	26.873	0.805
	6	0.089	0.133	20.129	0.819
Dia. 3/8 No. 3	1	0.828	1.231	61.370	0.820
	2	0.545	0.822	49.793	0.815
	3	0.373	0.569	41.196	0.810
	4	0.252	0.381	33.846	0.814
	5	0.158	0.238	26.788	0.814
	6	0.085	0.131	19.614	0.805
Dia. 7/16 No. 3	1	0.832	1.195	61.507	0.834
	2	0.548	0.811	49.929	0.822
	3	0.372	0.554	41.135	0.819
	4	0.253	0.380	33.913	0.815
	5	0.157	0.238	26.754	0.813
	6	0.089	0.132	20.061	0.818
Dia. 1/2 No. 3	1	0.828	1.212	61.377	0.827
	2	0.542	0.832	49.623	0.807
	3	0.370	0.558	41.041	0.815
	4	0.252	0.373	33.879	0.823
	5	0.158	0.234	26.763	0.821
	6	0.086	0.131	19.810	0.811

NOTICE: Shows the average of three reading taken during calibration.

AI-47

Rapport des codes d'échantillons



Code échantillon	Projet	Date	Site de prélèvement	Test (description)	Paramètres
15046-4060	R15-046	25-juin-15	Incinérateur	Test #1 Filtre	Part., Métaux, Hg
15046-4061	R15-046	25-juin-15	Incinérateur	Test #1 Lav-sonde (ace)	Part., Métaux, Hg
15046-4062	R15-046	25-juin-15	Incinérateur	Test #1 Lav-sonde (HNO3)	Métaux, Hg
15046-4063	R15-046	25-juin-15	Incinérateur	Test #1 Aliquot	HCl
15046-4064	R15-046	25-juin-15	Incinérateur	Test #1 Barboteurs 1+2	Métaux, Hg
15046-4065	R15-046	25-juin-15	Incinérateur	Test #1 Barboteurs 3+4	Métaux, Hg
15046-4066	R15-046	25-juin-15	Incinérateur	Test #1 Barboteurs 5	Hg
15046-4067	R15-046	25-juin-15	Incinérateur	Test #1 Barboteurs 6+7	Hg
15046-4068	R15-046	25-juin-15	Incinérateur	Test #2 Filtre	Part., Métaux, Hg
15046-4069	R15-046	25-juin-15	Incinérateur	Test #2 Lav-sonde (ace)	Part., Métaux, Hg
15046-4070	R15-046	25-juin-15	Incinérateur	Test #2 Lav-sonde (HNO3)	Métaux, Hg
15046-4071	R15-046	25-juin-15	Incinérateur	Test #2 Aliquot	HCl
15046-4072	R15-046	25-juin-15	Incinérateur	Test #2 Barboteurs 1+2	Métaux, Hg
15046-4073	R15-046	25-juin-15	Incinérateur	Test #2 Barboteurs 3+4	Métaux, Hg
15046-4074	R15-046	25-juin-15	Incinérateur	Test #2 Barboteurs 5	Hg
15046-4075	R15-046	25-juin-15	Incinérateur	Test #2 Barboteurs 6+7	Hg

Code échantillon	Projet	Date	Site de prélèvement	Test (description)	Paramètres
15046-4076	R15-046	25-juin-15	Incinérateur	Test #3 Filtre	Part., Métaux, Hg
15046-4077	R15-046	25-juin-15	Incinérateur	Test #3 Lav-sonde (ace)	Part., Métaux, Hg
15046-4078	R15-046	25-juin-15	Incinérateur	Test #3 Lav-sonde (HNO3)	Métaux, Hg
15046-4079	R15-046	25-juin-15	Incinérateur	Test #3 Aliquot	HCl
15046-4080	R15-046	25-juin-15	Incinérateur	Test #3 Barboteurs 1+2	Métaux, Hg
15046-4081	R15-046	25-juin-15	Incinérateur	Test #3 Barboteurs 3+4	Métaux, Hg
15046-4082	R15-046	25-juin-15	Incinérateur	Test #3 Barboteurs 5	Hg
15046-4083	R15-046	25-juin-15	Incinérateur	Test #3 Barboteurs 6+7	Hg
15046-4084	R15-046	25-juin-15	Incinérateur	Blanc filtre	Métaux, Hg
15046-4085	R15-046	25-juin-15	Incinérateur	Blanc HNO3 0.1N	Métaux, Hg
15046-4086	R15-046	25-juin-15	Incinérateur	Blanc d'eau	Métaux, Hg, HCl
15046-4087	R15-046	25-juin-15	Incinérateur	Blanc HNO3/H2O2	Métaux, Hg
15046-4088	R15-046	25-juin-15	Incinérateur	Blanc KMnO4	Hg
15046-4089	R15-046	25-juin-15	Incinérateur	Test #1 SVOC 15046.1 (FH)	PCDD/F
15046-4090	R15-046	25-juin-15	Incinérateur	Test #1 SVOC 15046.2 (F)	PCDD/F
15046-4091	R15-046	25-juin-15	Incinérateur	Test #1 SVOC 15046.3 (X)	PCDD/F
15046-4092	R15-046	25-juin-15	Incinérateur	Test #1 SVOC 15046.4 (FCR)	PCDD/F
15046-4093	R15-046	25-juin-15	Incinérateur	Test #1 SVOC 15046.5 (C1)	PCDD/F
15046-4094	R15-046	25-juin-15	Incinérateur	Test #1 SVOC 15046.6 (C2)	PCDD/F
15046-4095	R15-046	25-juin-15	Incinérateur	Test #1 SVOC 15046.7 (GR)	PCDD/F

2015

Émis par: Christian St-Pierre

Code échantillon	Projet	Date	Site de prélèvement	Test (description)	Paramètres
15046-4096	R15-046	25-juin-15	Incinérateur	Test #2 SVOC 15046.10 (FH)	PCDD/F
15046-4097	R15-046	25-juin-15	Incinérateur	Test #2 SVOC 15046.11 (F)	PCDD/F
15046-4098	R15-046	25-juin-15	Incinérateur	Test #2 SVOC 15046.12 (X)	PCDD/F
15046-4099	R15-046	25-juin-15	Incinérateur	Test #2 SVOC 15046.13 (FCR)	PCDD/F
15046-4100	R15-046	25-juin-15	Incinérateur	Test #2 SVOC 15046.14 (C1)	PCDD/F
15046-4101	R15-046	25-juin-15	Incinérateur	Test #2 SVOC 15046.15 (C2)	PCDD/F
15046-4102	R15-046	25-juin-15	Incinérateur	Test #2 SVOC 15046.16 (GR)	PCDD/F
15046-4103	R15-046	25-juin-15	Incinérateur	Test #3 SVOC 15046.20 (FH)	PCDD/F
15046-4104	R15-046	25-juin-15	Incinérateur	Test #3 SVOC 15046.21 (F)	PCDD/F
15046-4105	R15-046	25-juin-15	Incinérateur	Test #3 SVOC 15046.22 (X)	PCDD/F
15046-4106	R15-046	25-juin-15	Incinérateur	Test #3 SVOC 15046.23 (FCR)	PCDD/F
15046-4107	R15-046	25-juin-15	Incinérateur	Test #3 SVOC 15046.24 (C1)	PCDD/F
15046-4108	R15-046	25-juin-15	Incinérateur	Test #3 SVOC 15046.26 (GR)	PCDD/F
15046-4109	R15-046	25-juin-15	Incinérateur	Blanc SVOC 15046.30 (FH)	PCDD/F
15046-4110	R15-046	25-juin-15	Incinérateur	Blanc SVOC 15046.31 (F)	PCDD/F
15046-4111	R15-046	25-juin-15	Incinérateur	Blanc SVOC 15046.32 (X)	PCDD/F
15046-4112	R15-046	25-juin-15	Incinérateur	Blanc SVOC 15046.33 (FCR)	PCDD/F
15046-4113	R15-046	25-juin-15	Incinérateur	Blanc SVOC 15046.34 (C1)	PCDD/F
15046-4114	R15-046	25-juin-15	Incinérateur	Blanc SVOC 15046.35 (GR)	PCDD/F

150

25 juin 2015

Émis par: Christian St-Pierre



NOM DU CLIENT: EXOVA
1390 RUE HOCQUART
ST-BRUNO DE DE MONTARVILLE, QC J3V6E1
(450) 441-5880

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

N° DE PROJET: R15-046

N° BON DE TRAVAIL: 15M977132

HAUTE RÉOLUTION VÉRIFIÉ PAR: Emmanuelle St-Pierre, chimiste

DATE DU RAPPORT: 2015-06-10

VERSION*: 1

NOMBRE DE PAGES: 7

Si vous désirez de l'information concernant cette analyse, S.V.P. contacter votre chargé de projets au (514) 337-1000.

***NOTES**

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Nous disposerons des échantillons dans les 30 jours suivants les analyses. S.V.P. Contactez le laboratoire si vous désirez avoir un délai d'entreposage.

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
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Certificat d'analyse

N° BON DE TRAVAIL: 15M977132

N° DE PROJET: R15-046

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:



Laboratoires

NOM DU CLIENT: EXOVA

PRÉLEVÉ PAR:

Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)

DATE DE RÉCEPTION: 2015-05-25

DATE DU RAPPORT: 2015-06-10

IDENTIFICATION DE L'ÉCHANTILLON: PROOF R15-046

MATRICE: Liquide
DATE D'ÉCHANTILLONNAGE: 2015-05-25

Unités C / N LDR 6579680

Paramètre	Unités	C / N	LDR	
2,3,7,8-TCDD (pg total)	pg	1	<1	
1,2,3,7,8-PeCDD (pg total)	pg	0.9	<0.9	
1,2,3,4,7,8-HxCDD (pg total)	pg	1	<1	
1,2,3,6,7,8-HxCDD (pg total)	pg	1	<1	
1,2,3,7,8,9-HxCDD (pg total)	pg	1	<1	
1,2,3,4,6,7,8-HpCDD (pg total)	pg	3	<3	
OCDD (pg total)	pg	3	6	
2,3,7,8-TCDF (pg total)	pg	1	<1	
1,2,3,7,8-PeCDF (pg total)	pg	1	<1	
2,3,4,7,8-PeCDF (pg total)	pg	1	<1	
1,2,3,4,7,8-HxCDF (pg total)	pg	1	<1	
1,2,3,6,7,8-HxCDF (pg total)	pg	1	<1	
2,3,4,6,7,8-HxCDF (pg total)	pg	1	<1	
1,2,3,7,8,9-HxCDF (pg total)	pg	2	<2	
1,2,3,4,6,7,8-HpCDF (pg total)	pg	1	<1	
1,2,3,4,7,8,9-HpCDF (pg total)	pg	2	<2	
OCDF (pg total)	pg	3	<3	
Somation des Tétrachlorodibenzodioxines	pg	1	<1	
Somation des Pentachlorodibenzodioxines	pg	0.9	1.7	
Somation des Hexachlorodibenzodioxines	pg	1	2.0	
Somation des Heptachlorodibenzodioxines	pg	3	<3	
Somation des PCDDs	pg	3	11	
Somation des Tétrachlorodibenzofuranes	pg	1	1.3	
Somation des Pentachlorodibenzofuranes	pg	1	<1	

Christian St-Pierre

Certifié par:

La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDEFP. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDEFP.

AGAT CERTIFICAT D'ANALYSE

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Certificat d'analyse

N° BON DE TRAVAIL: 15M977132

N° DE PROJET: R15-046

NOM DU CLIENT: EXOVA
PRÉLEVÉ PAR:

À L'ATTENTION DE: CHRISTIAN ST-PIERRE
LIEU DE PRÉLÈVEMENT:

Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)

DATE DE RÉCEPTION: 2015-05-25

DATE DU RAPPORT: 2015-06-10

IDENTIFICATION DE L'ÉCHANTILLON: PROOF R15-046

MATRICE: Liquide
DATE D'ÉCHANTILLONNAGE: 2015-05-25
Unités C/N LDR 6579680

Paramètre	Unités	C/N	LDR
Sommaton des Hexachlorodibenzofuranes	pg	2	<2
Sommaton des Heptachlorodibenzofuranes	pg	2	7
Sommaton des PCDFs	pg	3	9
2,3,7,8-Tetra CDD (TEF 1.0)	TEQ	0	0
1,2,3,7,8-Penta CDD (TEF 0.5)	TEQ	0	0
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	TEQ	0	0
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	TEQ	0	0
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	TEQ	0	0
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	TEQ	0	0
Octa CDD (TEF 0.001)	TEQ	0.00558	
2,3,7,8-Tetra CDF (TEF 0.1)	TEQ	0	
1,2,3,7,8-Penta CDF (TEF 0.05)	TEQ	0	
2,3,4,7,8-Penta CDF (TEF 0.5)	TEQ	0	
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	TEQ	0	
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	TEQ	0	
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	TEQ	0	
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	TEQ	0	
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	TEQ	0	
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	TEQ	0	
Octa CDF (TEF 0.001)	TEQ	0	
Sommaton des PCDDs et PCDFs (TEQ)		0.00558	

Certifié par:


Amanda H. Rine

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AGAT

Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 15M977132

N° DE PROJET: R15-046

9770 ROUTE TRANSCANADIENNE
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CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
<http://www.agatlabs.com>

NOM DU CLIENT: EXOVA

PRÉLEVÉ PAR:

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:

Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)

DATE DE RÉCEPTION: 2015-05-25

DATE DU RAPPORT: 2015-06-10

IDENTIFICATION DE L'ÉCHANTILLON: PROOF R15-046

MATRICE: Liquide
DATE D'ÉCHANTILLONNAGE: 2015-05-25

Étalon de recouvrement	Unités	Limites	6579680
13C-2378-TCDF	%	30-140	72
13C-12378-PeCDF	%	30-140	82
13C-23478-PeCDF	%	30-140	87
13C-123478-HxCDF	%	30-140	79
13C-123678-HxCDF	%	30-140	77
13C-234678-HxCDF	%	30-140	82
13C-123789-HxCDF	%	30-140	83
13C-1234678-HpCDF	%	30-140	92
13C-1234789-HpCDF	%	30-140	102
13C-2378-TCDD	%	30-140	70
13C-12378-PeCDD	%	30-140	84
13C-123478-HxCDD	%	30-140	76
13C-123678-HxCDD	%	30-140	73
13C-1234678-HxCDD	%	30-140	95
13C-OCDD	%	30-140	102

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

6579680

Le blanc a été soustrait de l'échantillon.

Le résultat en pg total correspond au composite de chacune des parties du train d'échantillonnage.

A1-54

Certifié par:

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Contrôle de qualité

NOM DU CLIENT: EXOVA

N° DE PROJET: R15-046

PRÉLEVÉ PAR:

N° BON DE TRAVAIL: 15M977132

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:

Analyse haute résolution

Date du rapport: 2015-06-10			DUPLICATA			MATÉRIAU DE RÉFÉRENCE			BLANC FORTIFIÉ			ÉCH. FORTIFIÉ			
PARAMÈTRE	Lot	N° éch.	Dup #1	Dup #2	% d'écart	Blanc de méthode	% Récup.	Limites		% Récup.	Limites		% Récup.	Limites	
								Inf.	Sup.		Inf.	Sup.		Inf.	Sup.
Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)															
2,3,7,8-TCDD (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,7,8 PeCDD (pg total)	1	NA	NA	NA	0.0	< 0.8	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,4,7,8 HxCDD (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,6,7,8 HxCDD (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,7,8,9 HxCDD (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,4,6,7,8 HpCDD (pg total)	1	NA	NA	NA	0.0	< 3	NA	70%	130%	NA	70%	130%	NA	70%	130%
OCDD (pg total)	1	NA	NA	NA	0.0	< 3	NA	70%	130%	NA	70%	130%	NA	70%	130%
2,3,7,8 TCDF (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,7,8 PeCDF (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
2,3,4,7,8-PeCDF (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,4,7,8 HxCDF (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,6,7,8 HxCDF (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
2,3,4,6,7,8-HxCDF (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,7,8,9 HxCDF (pg total)	1	NA	NA	NA	0.0	< 2	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,4,6,7,8 HpCDF (pg total)	1	NA	NA	NA	0.0	< 1	NA	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,4,7,8,9 HpCDF (pg total)	1	NA	NA	NA	0.0	< 2	NA	70%	130%	NA	70%	130%	NA	70%	130%
OCDF (pg total)	1	NA	NA	NA	0.0	< 3	NA	70%	130%	NA	70%	130%	NA	70%	130%

Certifié par:

Christian St-Pierre

AI-55

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Sommaire de méthode

NOM DU CLIENT: EXOVA

N° DE PROJET: R15-046

PRÉLEVÉ PAR:

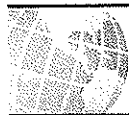
N° BON DE TRAVAIL: 15M977132

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse haute résolution					
2,3,7,8-TCDD (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8 PeCDD (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8 HxCDD (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8 HxCDD (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9 HxCDD (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8 HpCDD (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
OCDD (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8 TCDF (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8 PeCDF (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,7,8-PeCDF (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8 HxCDF (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8 HxCDF (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,6,7,8-HxCDF (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9 HxCDF (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8 HpCDF (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8,9 HpCDF (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
OCDF (pg total)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Tétrachlorodibenzodioxines	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Pentachlorodibenzodioxines	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Hexachlorodibenzodioxines	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Heptachlorodibenzodioxines	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDDs	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Tétrachlorodibenzofuranes	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Pentachlorodibenzofuranes	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Hexachlorodibenzofuranes	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Heptachlorodibenzofuranes	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDFs	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8-Tetra CDD (TEF 1.0)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8-Penta CDD (TEF 0.5)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Octa CDD (TEF 0.001)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8-Tetra CDF (TEF 0.1)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8-Penta CDF (TEF 0.05)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,7,8-Penta CDF (TEF 0.5)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS

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Sommaire de méthode

NOM DU CLIENT: EXOVA

N° DE PROJET: R15-046

PRÉLEVÉ PAR:

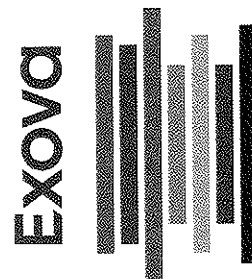
N° BON DE TRAVAIL: 15M977132

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Octa CDF (TEF 0.001)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommatation des PCDDs et PCDFs (TEQ)	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-2378-TCDF	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-12378-PeCDF	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-23478-PeCDF	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123478-HxCDF	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123678-HxCDF	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-234678-HxCDF	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123789-HxCDF	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234678-HpCDF	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234789-HpCDF	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-2378-TCDD	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-12378-PeCDD	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123478-HxCDD	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123678-HxCDD	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234678-HxCDD	2015-05-29	2015-06-03	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-OCDD	2015-05-29	2015-06-03	HR-151-5400	CEAEQ MA.400 - DF 1.0	HRMS

AI-57



Certificat d'analyses

Agnico-Eagle Mines Ltd, Meadowbank Division Baker Lake, Nunavut Stack sampling Project R15-046

Samples	Laboratory Number	Particle Matters (g)
---------	-------------------	----------------------

Detection limit	0.00004
-----------------	---------

Incinerator			
Test #1	Filter	15046-4060	0.17077
	Front wash	15046-4061	0.07189
Total			0.24266
Test #2	Filter	15046-4068	0.12840
	Front wash	15046-4069	0.07470
Total			0.20310
Test #3	Filter	15046-4076	0.13115
	Front wash	15046-4077	0.07144
Total			0.20259
Front wash blank (has not been subtracted from results)			0.00159

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Reception date : June 25th, 2015

Date of analysis : June 26th, 2015

Report date: July 01st, 2015

Reference method : A-01

File number: R15046-01 version 1

Christian St-Pierre



Christian St-Pierre, B. Sc. Chemist
Page 1 de 1

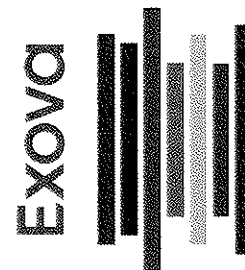
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Certificate of Analysis

Request number: 15-670094



Date Received: 2015-06-29

Date Certificate Issued: 2015-07-13

Certificate Version: 1

- ☒ Official Certificate of Analysis
☐ Preliminary Certificate of Analysis

Client

Exova

1390 rue Hocquart
St-Bruno, Québec, Canada
J3V 6E1
Telephone : (450) 441-5880
Fax : (450) 441-4316

P.O. Number	Your project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Comments

This version replaces and cancels all earlier version.

NA : Information Not Available

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Certificate of Analysis No. 669328 - Revision 1 - Page 1 of 21



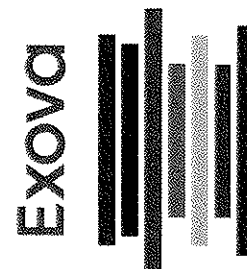
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871986	2872003	2872015	2872025
Your Reference	15046-4066 (101 ml)+406 (402 ml)	15046-4074 (104 ml)+4075 (400 ml)	15046-4082 (102 ml)+4083 (400ml)	15046-4088 (200 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Mercury (subcontract)

(Analysis done by sub-contracting)

Mercury

Preparation	-	-	-	-
Analysis	-	-	-	-
Sequential No.	NA	NA	NA	NA
	Annexe	Annexe	Annexe	Annexe

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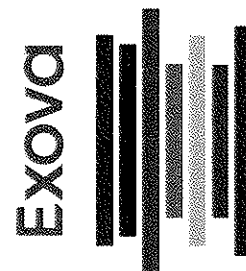
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Certificate of Analysis

Client: **Exova** Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871979	2871990	2872007	2872020
Your Reference	15046-4063 (364 ml)	15046-4071 (386 ml)	15046-4079 (403 ml)	15046-4086 (136 ml)
	#1	#2	#3	Blank
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
	Imp 1-2	Imp 1-2	Imp 1-2	Imp 1-2
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Incinerator

Parameter(s)

Method

Reference

Chlorides (IC)

Anions by ion chromatography. (Non Accredited)
E-A-EN-EN-CHI-PC-MD028 (REF MA300-IONS 1.3 CEAEQ)

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508474	508474	508474	508474
Chloride	µg	45100	25900	55300
				< 1360

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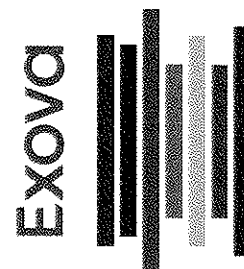
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871982	2871983	2871999	2872001
Your Reference	15046-4064 (377 ml)	15046-4065 (320 ml)	15046-4072 (401 ml)	15046-4073 (313 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Incinerator

Parameter(s)

Method

Reference

Aluminum (Al)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Aluminum

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	603	58	2120	225

Antimony (Sb)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Antimony

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	5	< 3	< 4	< 3

Arsenic (As)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Arsenic

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 4	< 3	< 4	< 3

Baryum (Ba)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Barium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 38	< 32	69	< 31

Beryllium (Be)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Beryllium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 4	< 3	< 4	< 3

Bismuth (Bi)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Bismuth

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 4	< 3	< 4	< 3

Boron (B)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Boron

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	2010	< 64	5590	266

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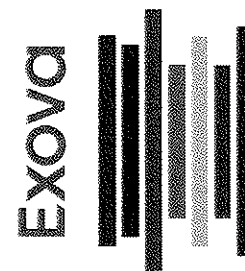
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871982	2871983	2871999	2872001
Your Reference	15046-4064 (377 ml)	15046-4065 (320 ml)	15046-4072 (401 ml)	15046-4073 (313 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
	Imp1-2	Imp3-4	Imp1-2	Imp3-4
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Incinerator

Parameter(s)

Method

Reference

Cadmium (Cd)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Cadmium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 1.9	< 1.6	< 2.0	< 1.6

Calcium (Ca)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Calcium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	3260	484	6930	898

Chromium (Cr)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Chromium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	7	< 3	9	< 3

Cobalt (Co)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Cobalt

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 4	< 3	< 4	< 3

Copper (Cu)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Copper

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	6	< 3	5	< 3

Iron (Fe)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Iron

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	287	< 160	382	< 157

Lead (Pb)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Lead

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	8	< 3	7	< 3

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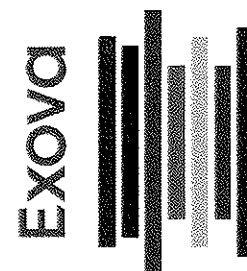
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871982	2871983	2871999	2872001
Your Reference	15046-4064 (377 ml)	15046-4065 (320 ml)	15046-4072 (401 ml)	15046-4073 (313 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
	Imp 1-2	Imp 3-4	Imp 1-2	Imp 3-4
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Lithium (Li)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-M&t1.2,CEAEQ)

Lithium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 4	< 3	< 4	< 3

Magnesium (Mg)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-M&t1.2,CEAEQ)

Magnesium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	867	142	1760	229

Manganese (Mn)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-M&t1.2,CEAEQ)

Manganese

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	162	4	148	8

Mercury (Hg)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-M&t1.2,CEAEQ)

Mercury

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 0.4	< 0.3	< 0.4	< 0.3

Molybdenum (Mo)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-M&t1.2,CEAEQ)

Molybdenum

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 4	< 3	< 4	< 3

Nickel (Ni)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-M&t1.2,CEAEQ)

Nickel

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	6	< 3	5	< 3

Phosphorus (P)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-M&t1.2,CEAEQ)

Phosphorus

Preparation	-	-	2015-06-30	2015-06-30
Analysis	-	-	2015-06-30	2015-06-30
Sequential No.	-	-	508450	508450
µg	-	-	< 401	< 313

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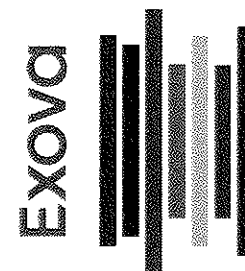
A1-64

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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871982	2871983	2871999	2872001
Your Reference	15046-4064 (377 ml)	15046-4065 (320 ml)	15046-4072 (401 ml)	15046-4073 (313 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Potassium (K)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Potassium	µg	< 1890	< 1600	< 2010	< 1570
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Selenium (Se)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Selenium	µg	< 4	< 3	< 4	< 3
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Silicon extractable (Si)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Silicium	µg	-	-	89800	5570
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Silver (Ag)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Silver	µg	< 1.9	< 1.6	< 2.0	< 1.6
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Sodium (Na)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Sodium	µg	5380	< 1600	13800	< 1570
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Strontium (Sr)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Strontium	µg	5	< 3	9	< 3
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Tellurium (Te)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Tellurium	µg	-	-	< 4	< 3
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871982	2871983	2871999	2872001
Your Reference	15046-4064 (377 ml)	15046-4065 (320 ml)	15046-4072 (401 ml)	15046-4073 (313 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
	Imp 1-2	Imp 3-4	Imp 1-2	Imp 3-4
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Thallium (Tl)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Thallium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 4	< 3	< 4	< 3

Tin (Sn)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Tin

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	7	32	7	33

Titanium (Ti)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Titanium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	41	3	107	9

Uranium (U)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Uranium

Preparation	-	-	2015-06-30	2015-06-30
Analysis	-	-	2015-06-30	2015-06-30
Sequential No.	-	-	508450	508450
µg	-	-	< 4	< 3

Vanadium (V)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Vanadium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 4	< 3	< 4	< 3

Zinc (Zn)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Zinc

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508450	508450	508450	508450
µg	< 26	< 22	< 28	< 22

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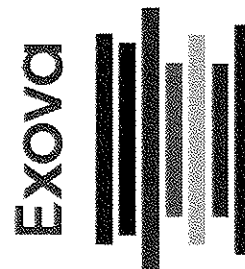
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2872008	2872010	2872020	2872024
Your Reference	15046-4080 (418 ml)	15046-4081 (316 ml)	15046-4086 (136 ml)	15046-4087 (200 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method:

Reference:

Aluminum (Al)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Aluminum	µg	1870	101	< 14	< 20
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Antimony (Sb)	Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Antimony	µg	< 4	< 3	< 1	< 2
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Arsenic (As)	Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Arsenic	µg	< 4	< 3	< 1	< 2
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Baryum (Ba)	Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Barium	µg	51	< 32	< 14	< 20
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Beryllium (Be)	Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Beryllium	µg	< 4	< 3	< 1	< 2
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Bismuth (Bi)	Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Bismuth	µg	< 4	< 3	< 1	< 2
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Boron (B)	Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Boron	µg	5890	< 63	< 27	< 40
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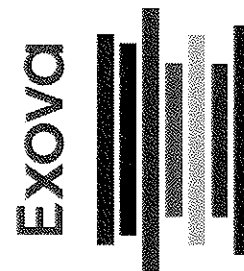
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2872008	2872010	2872020	2872024
Your Reference	15046-4080 (418 ml)	15046-4081 (316 ml)	15046-4086 (136 ml)	15046-4087 (200 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

#3

Blank

Imp 1-2

Imp 3-4

Imp 1-2

Imp 3-4

Parameter(s)

Method

Reference

Cadmium (Cd)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Cadmium	µg	< 2.1	< 1.6	< 0.7	< 1.0
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Calcium (Ca)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Calcium	µg	5520	611	< 27	3170
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Chromium (Cr)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Chromium	µg	7	< 3	< 1	< 2
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Cobalt (Co)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Cobalt	µg	< 4	< 3	< 1	< 2
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Copper (Cu)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
-------------	------------	------------	------------	------------

Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Copper	µg	< 4	< 3	< 1	< 2
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Iron (Fe)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
-------------	------------	------------	------------	------------

Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Iron	µg	331	< 158	< 68	< 100
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Lead (Pb)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
-------------	------------	------------	------------	------------

Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
----------	------------	------------	------------	------------

Sequential No.	508450	508450	508841	508450
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Lead	µg	5	< 3	< 1	< 2
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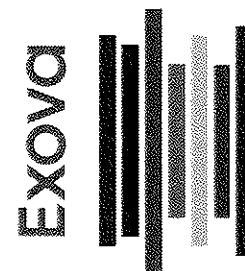
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2872008	2872010	2872020	2872024
Your Reference	15046-4080 (418 ml)	15046-4081 (316 ml)	15046-4086 (136 ml)	15046-4087 (200 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Lithium (Li)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Lithium	µg	< 4	< 3	< 1	< 2
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Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Magnesium	µg	1360	172	< 1	1010
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Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Manganese	µg	165	4	< 1	< 2
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Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Mercury	µg	< 0.4	< 0.3	< 0.1	< 0.2
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Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Molybdenum	µg	< 4	< 3	< 1	< 2
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Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
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Sequential No.	508450	508450	508841	508450
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Nickel	µg	< 4	< 3	< 1	< 2
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Preparation	-	-	2015-07-03	2015-06-30
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Analysis	-	-	2015-07-03	2015-06-30
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Sequential No.	-	-	508841	508450
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Phosphorus	µg	-	< 136	< 200
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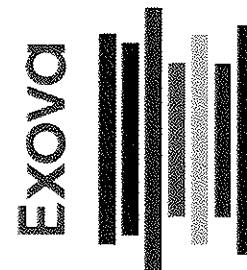
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2872008	2872010	2872020	2872024
Your Reference	15046-4080 (418 ml)	15046-4081 (316 ml)	15046-4086 (136 ml)	15046-4087 (200 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Potassium (K)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Potassium

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
Sequential No.	508450	508450	508841	508450
µg	< 2090	< 1580	< 680	< 1000

Selenium (Se)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Selenium

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
Sequential No.	508450	508450	508841	508450
µg	< 4	< 3	< 1	< 2

Silicon extractable (Si)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Silicium

Preparation	-	-	2015-07-03	2015-06-30
Analysis	-	-	2015-07-03	2015-06-30
Sequential No.	-	-	508841	508450
µg	-	-	< 68	< 100

Silver (Ag)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Silver

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
Sequential No.	508450	508450	508841	508450
µg	< 2.1	< 1.6	< 0.7	< 1.0

Sodium (Na)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Sodium

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
Sequential No.	508450	508450	508841	508450
µg	10900	< 1580	< 680	1550

Strontium (Sr)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Strontium

Preparation	2015-06-30	2015-06-30	2015-07-03	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-07-03	2015-06-30
Sequential No.	508450	508450	508841	508450
µg	10	< 3	< 1	7

Tellurium (Te)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Tellurium

Preparation	-	-	2015-07-03	2015-06-30
Analysis	-	-	2015-07-03	2015-06-30
Sequential No.	-	-	508841	508450
µg	-	-	< 1	< 2

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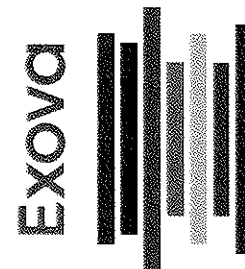
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2872008	2872010	2872020	2872024
Your Reference	15046-4080 (418 ml)	15046-4081 (316 ml)	15046-4086 (136 ml)	15046-4087 (200 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Thallium (Tl)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Thallium	µg	< 4	< 3	< 1	< 2
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Tin (Sn)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Tin	µg	13	32	< 1	16
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Titanium (Ti)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Titanium	µg	81	4	< 1	< 2
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Uranium (U)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Uranium	µg	-	-	< 1	< 2
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Vanadium (V)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Vanadium	µg	< 4	< 3	< 1	< 2
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Zinc (Zn)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Zinc	µg	< 29	< 22	< 10	< 14
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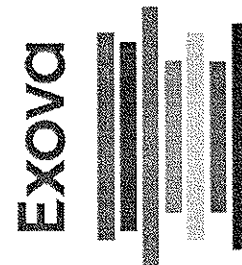
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871978	2871989	2872006	2872018
Your Reference	15046-4060+4061+4062 #1	15046-4068+4069+4070 #2	15046-4076+4077+4078 #3	15046-4084+4085 Blank
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank F+S	Meadowbank F+S	Meadowbank F+S	Meadowbank F+S
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method
Reference

Aluminum (Al)	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Metals by ICP (not accredited) E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
	Sequential No.	508468	508468	508468	508468
Aluminum	µg	249	147	233	< 10
Antimony (Sb)	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Metals by ICP (not accredited) E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Analysis	2015-07-02	2015-07-02	2015-07-02	2015-07-02
	Sequential No.	508468	508468	508468	508468
Antimony	µg	12.3	4.6	10.1	< 0.5
Arsenic (As)	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Metals by ICP (not accredited) E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Analysis	2015-07-02	2015-07-02	2015-07-02	2015-07-02
	Sequential No.	508468	508468	508468	508468
Arsenic	µg	0.6	0.5	0.8	< 0.5
Baryum (Ba)	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Metals by ICP (not accredited) E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
	Sequential No.	508468	508468	508468	508468
Barium	µg	3.4	1.6	1.7	< 0.5
Beryllium (Be)	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Metals by ICP (not accredited) E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
	Sequential No.	508468	508468	508468	508468
Beryllium	µg	< 0.2	< 0.2	< 0.2	< 0.2
Bismuth (Bi)	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Metals by ICP (not accredited) E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Analysis	2015-07-02	2015-07-02	2015-07-02	2015-07-02
	Sequential No.	508468	508468	508468	508468
Bismuth	µg	< 5	< 5	< 5	< 5
Boron (B)	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Metals by ICP (not accredited) E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
	Sequential No.	508468	508468	508468	508468
Boron	µg	316	111	139	< 20

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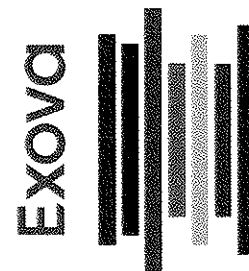
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871978	2871989	2872006	2872018
Your Reference	15046- 4060+4061+4062 #1	15046- 4068+4069+4070 #2	15046- 4076+4077+4078 #3	15046-4084+4085 Blank
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank F+S	Meadowbank F+S	Meadowbank F+S	Meadowbank F+S
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Cadmium (Cd)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Cadmium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508468	508468	508468	508468
µg	5.6	2.0	1.0	< 0.5

Calcium (Ca)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Calcium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508468	508468	508468	508468
µg	376	221	175	2

Chromium (Cr)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Chromium

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508468	508468	508468	508468
µg	8.6	15.1	6.1	< 0.5

Cobalt (Co)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Cobalt

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508468	508468	508468	508468
µg	< 0.5	< 0.5	< 0.5	< 0.5

Copper (Cu)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Copper

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508468	508468	508468	508468
µg	37.6	14.5	22.5	< 0.5

Iron (Fe)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Iron

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508468	508468	508468	508468
µg	110	54.0	45.4	1.0

Lead (Pb)

Metals by ICP (not accredited)

E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Lead

Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
Sequential No.	508468	508468	508468	508468
µg	128	41.7	93.6	< 0.5

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Certificate of Analysis

Client: **Exova**

Request Number:

15-670094

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871978	2871989	2872006	2872018
Your Reference	15046-4060+4061+4062	15046-4068+4069+4070	15046-4076+4077+4078	15046-4084+4085
Matrix	#1	#2	#3	Blank
Sampled by	Air	Air	Air	Air
Site sampled	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Date sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date received	F+S	F+S	F+S	F+S
	NA	NA	NA	NA
	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Lithium (Li)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Lithium	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
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	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
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	Sequential No.	508468	508468	508468	508468
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	µg	3.4	3.5	2.7	< 0.5
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Magnesium (Mg)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Magnesium	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
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	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
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	Sequential No.	508468	508468	508468	508468
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	µg	95.8	37.4	25.8	< 0.5
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Manganese (Mn)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Manganese	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
-----------	-------------	------------	------------	------------	------------

	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
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	Sequential No.	508468	508468	508468	508468
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	µg	4.53	2.79	1.76	< 0.25
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Mercury (Hg)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Mercury	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
---------	-------------	------------	------------	------------	------------

	Analysis	2015-07-02	2015-07-02	2015-07-02	2015-07-02
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	Sequential No.	508468	508468	508468	508468
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	µg	< 0.1	< 0.1	< 0.1	< 0.1
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Molybdenum (Mo)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Molybdenum	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
------------	-------------	------------	------------	------------	------------

	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--	----------	------------	------------	------------	------------

	Sequential No.	508468	508468	508468	508468
--	----------------	--------	--------	--------	--------

	µg	5	26	24	< 1
--	----	---	----	----	-----

Nickel (Ni)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Nickel	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--------	-------------	------------	------------	------------	------------

	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--	----------	------------	------------	------------	------------

	Sequential No.	508468	508468	508468	508468
--	----------------	--------	--------	--------	--------

	µg	4.7	4.1	2.1	< 0.5
--	----	-----	-----	-----	-------

Phosphorus (P)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Phosphorus	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
------------	-------------	------------	------------	------------	------------

	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--	----------	------------	------------	------------	------------

	Sequential No.	508468	508468	508468	508468
--	----------------	--------	--------	--------	--------

	µg	< 100	< 100	< 100	< 100
--	----	-------	-------	-------	-------

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Certificate of Analysis No. 669328 - Revision 1 - Page 16 of 21



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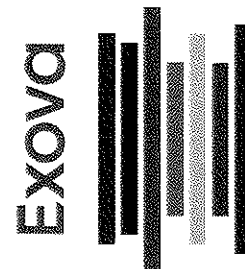
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Certificate of Analysis

Client: **Exova**

Request Number:

15-670094

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871978	2871989	2872006	2872018
Your Reference	15046-4060+4061+4062	15046-4068+4069+4070	15046-4076+4077+4078	15046-4084+4085
Matrix	#1 Air	#2 Air	#3 Air	Blank Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
	F+S	F+S	F+S	F+S
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Potassium (K)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Potassium	µg	2450	2790	1500	< 25
-----------	----	------	------	------	------

Selenium (Se)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Selenium	µg	0.7	0.7	0.8	< 0.5
----------	----	-----	-----	-----	-------

Silicon (Si)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Silicon	µg	2490	1480	1900	63
---------	----	------	------	------	----

Silver (Ag)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Silver	µg	7.1	12.2	3.7	< 0.5
--------	----	-----	------	-----	-------

Sodium (Na)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Sodium	µg	4640	2700	1750	28
--------	----	------	------	------	----

Strontium (Sr)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Strontium	µg	1.2	< 0.5	< 0.5	< 0.5
-----------	----	-----	-------	-------	-------

Tellurium (Te)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Tellurium	µg	< 1	< 1	< 1	< 1
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Certificate of Analysis No. 669328 - Revision 1 - Page 17 of 21

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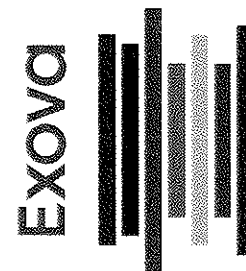
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871978	2871989	2872006	2872018
Your Reference	15046-4060+4061+4062	15046-4068+4069+4070	15046-4076+4077+4078	15046-4084+4085
Matrix	#1	#2	#3	Blank
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
	F+S	F+S	F+S	F+S
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Thallium (Tl)

Metals by ICP (not accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2.CEAEQ)

Thallium	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
----------	-------------	------------	------------	------------	------------

	Analysis	2015-07-02	2015-07-02	2015-07-02	2015-07-02
--	----------	------------	------------	------------	------------

	Sequential No.	508468	508468	508468	508468
--	----------------	--------	--------	--------	--------

	µg	< 2.5	< 2.5	< 2.5	< 2.5
--	----	-------	-------	-------	-------

	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--	-------------	------------	------------	------------	------------

	Analysis	2015-07-02	2015-07-02	2015-07-02	2015-07-02
--	----------	------------	------------	------------	------------

	Sequential No.	508468	508468	508468	508468
--	----------------	--------	--------	--------	--------

	µg	7.5	10.6	10.9	< 0.5
--	----	-----	------	------	-------

	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--	-------------	------------	------------	------------	------------

	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--	----------	------------	------------	------------	------------

	Sequential No.	508468	508468	508468	508468
--	----------------	--------	--------	--------	--------

	µg	12.2	8.4	7.9	< 0.5
--	----	------	-----	-----	-------

	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--	-------------	------------	------------	------------	------------

	Analysis	2015-07-02	2015-07-02	2015-07-02	2015-07-02
--	----------	------------	------------	------------	------------

	Sequential No.	508468	508468	508468	508468
--	----------------	--------	--------	--------	--------

	µg	< 0.5	< 0.5	< 0.5	< 0.5
--	----	-------	-------	-------	-------

	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--	-------------	------------	------------	------------	------------

	Analysis	2015-07-02	2015-06-30	2015-06-30	2015-06-30
--	----------	------------	------------	------------	------------

	Sequential No.	508468	508468	508468	508468
--	----------------	--------	--------	--------	--------

	µg	0.4	< 0.1	< 0.1	< 0.1
--	----	-----	-------	-------	-------

	Preparation	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--	-------------	------------	------------	------------	------------

	Analysis	2015-06-30	2015-06-30	2015-06-30	2015-06-30
--	----------	------------	------------	------------	------------

	Sequential No.	508468	508468	508468	508468
--	----------------	--------	--------	--------	--------

	µg	80.8	39.1	55.2	< 0.5
--	----	------	------	------	-------

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Certificate of Analysis No. 669328 - Revision 1 - Page 18 of 21



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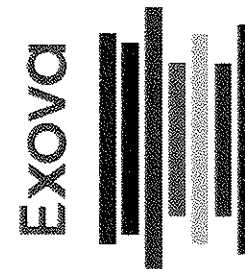
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871979	2871982	2871983	2871990
Your Reference	15046-4063 (364 ml)	15046-4064 (377 ml)	15046-4065 (320 ml)	15046-4071 (386 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Volume

Not applicable

Volume

Preparation	-	-	-	-
Analysis	-	-	-	-
Sequential No.	NA	NA	NA	NA
mL	364	377	320	386

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Certificate of Analysis No. 669328 - Revision 1 - Page 19 of 21



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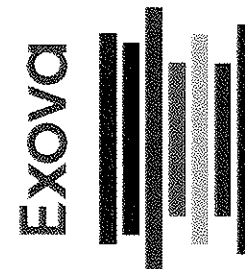
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2871999	2872001	2872007	2872008
Your Reference	15046-4072 (401 ml)	15046-4073 (313 ml)	15046-4079 (403 ml)	15046-4080 (418 ml)
Matrix	Air	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29	2015-06-29
Parameter(s)				
Method				
Reference				
Volume				
Not applicable				
	Preparation	-	-	-
	Analysis	-	-	-
	Sequential No.	NA	NA	NA
Volume	mL	401	313	403
				418

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Certificate of Analysis No. 669328 - Revision 1 - Page 20 of 21



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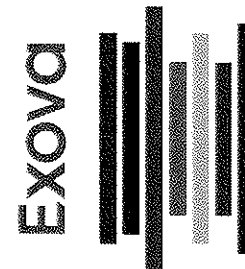
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Certificate of Analysis

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Sample(s)

Lab. No.	2872010	2872020	2872024
Your Reference	15046-4081 (316 ml)	15046-4086 (136 ml)	15046-4087 (200 ml)
Matrix	Air	Air	Air
Sampled by	Exova St-Bruno	Exova St-Bruno	Exova St-Bruno
Site sampled	Meadowbank	Meadowbank	Meadowbank
Date sampled	NA	NA	NA
Date received	2015-06-29	2015-06-29	2015-06-29

Parameter(s)

Method

Reference

Volume

Not applicable

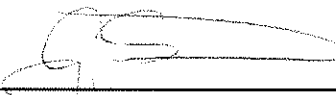
Volume

Preparation	-	-	-
Analysis	-	-	-
Sequential No.	NA	NA	NA
mL	316	136	200

Comments:

2872006	15046-4076+4077+4078	Silice: Blanc positif. Résultat accepté car la contamination est négligeable par rapport à la concentration retrouvée dans l'échantillon.
2872020	15046-4086 (136 ml)	Chlorures: Limite de détection augmentée en raison du volume de l'échantillon.

Note 1: Results and comments, if any, relate only to samples submitted for analysis at the Pointe-Claire laboratory (#307).


Genevieve Sevigny, chemist



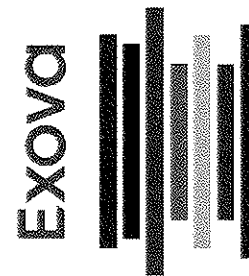
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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Chlorides (IC)					
Sequential ID No.: 508474					
Chloride	µg	< 100	< 100	532	446 - 604
Silver (Ag)					
Sequential ID No.: 508450					
Silver	µg	< 0.5	< 0.5	101	80 - 120
Silver (Ag)					
Sequential ID No.: 508841					
Silver	µg	< 0.5	< 0.5	106	80 - 120
Silver (Ag)					
Sequential ID No.: 508468					
Silver	µg	< 0.5	< 0.5	NA	NA
Aluminum (Al)					
Sequential ID No.: 508450					
Aluminum	µg	< 10	< 10	105	80 - 120
Aluminum (Al)					
Sequential ID No.: 508841					
Aluminum	µg	< 10	< 10	113	80 - 120
Aluminum (Al)					
Sequential ID No.: 508468					
Aluminum	µg	< 10	< 10	NA	NA
Arsenic (As)					
Sequential ID No.: 508450					
Arsenic	µg	< 1	< 1	101	80 - 120
Arsenic (As)					
Sequential ID No.: 508841					
Arsenic	µg	< 1	< 1	94	80 - 120
Arsenic (As)					
Sequential ID No.: 508468					
Arsenic	µg	< 0.5	< 0.5	NA	NA
Baryum (Ba)					
Sequential ID No.: 508450					
Barium	µg	< 10	< 10	103	80 - 120
Baryum (Ba)					
Sequential ID No.: 508841					
Barium	µg	< 10	< 10	103	80 - 120

RDL : Reported Detection Limit

Appendix 1 of Certificate no.669328 - Page 1 of 9

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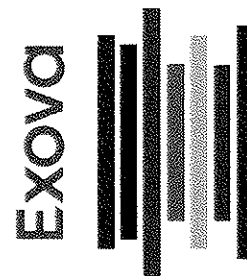
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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Baryum (Ba)					
Sequential ID No.: 508468					
Barium	µg	< 0.5	< 0.5	NA	NA
Boron (B)					
Sequential ID No.: 508450					
Boron	µg	< 20	< 20	96	80 - 120
Boron (B)					
Sequential ID No.: 508841					
Boron	µg	< 20	< 20	106	80 - 120
Beryllium (Be)					
Sequential ID No.: 508450					
Beryllium	µg	< 1	< 1	94	80 - 120
Beryllium (Be)					
Sequential ID No.: 508841					
Beryllium	µg	< 1	< 1	99	80 - 120
Beryllium (Be)					
Sequential ID No.: 508468					
Beryllium	µg	< 0.2	< 0.2	NA	NA
Boron (B)					
Sequential ID No.: 508468					
Boron	µg	< 20	< 20	NA	NA
Bismuth (Bi)					
Sequential ID No.: 508450					
Bismuth	µg	< 1	< 1	110	80 - 120
Bismuth (Bi)					
Sequential ID No.: 508841					
Bismuth	µg	< 1	< 1	105	80 - 120
Bismuth (Bi)					
Sequential ID No.: 508468					
Bismuth	µg	< 5	< 5	NA	NA
Calcium (Ca)					
Sequential ID No.: 508450					
Calcium	µg	< 20	< 20	439	400 - 600
Calcium (Ca)					
Sequential ID No.: 508841					

RDL : Reported Detection Limit

Appendix 1 of Certificate no.669328 - Page 2 of 9

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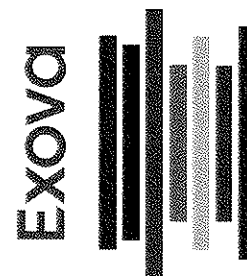
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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Calcium	µg	< 20	< 20	494	400 - 600
Calcium (Ca) Sequential ID No.: 508468					
Calcium	µg	< 1	< 1	NA	NA
Cadmium (Cd) Sequential ID No.: 508450					
Cadmium	µg	< 0.5	< 0.5	103	80 - 120
Cadmium (Cd) Sequential ID No.: 508841					
Cadmium	µg	< 0.5	< 0.5	98.3	80 - 120
Cadmium (Cd) Sequential ID No.: 508468					
Cadmium	µg	< 0.5	< 0.5	NA	NA
Cobalt (Co) Sequential ID No.: 508450					
Cobalt	µg	< 1	< 1	118	80 - 120
Cobalt (Co) Sequential ID No.: 508841					
Cobalt	µg	< 1	< 1	100	80 - 120
Cobalt (Co) Sequential ID No.: 508468					
Cobalt	µg	< 0.5	< 0.5	NA	NA
Chromium (Cr) Sequential ID No.: 508450					
Chromium	µg	< 1	< 1	114	80 - 120
Chromium (Cr) Sequential ID No.: 508841					
Chromium	µg	< 1	< 1	101	80 - 120
Chromium (Cr) Sequential ID No.: 508468					
Chromium	µg	< 0.5	< 0.5	NA	NA
Copper (Cu) Sequential ID No.: 508450					
Copper	µg	< 1	< 1	120	80 - 120

RDL : Reported Detection Limit

Appendix 1 of Certificate no.669328 - Page 3 of 9

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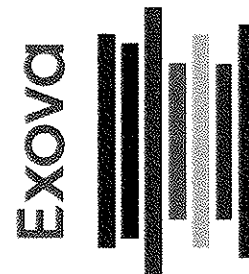
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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Copper (Cu)					
Sequential ID No.: 508841					
Copper	µg	< 1	< 1	104	80 - 120
Copper (Cu)					
Sequential ID No.: 508468					
Copper	µg	< 0.5	< 0.5	NA	NA
Iron (Fe)					
Sequential ID No.: 508450					
Iron	µg	< 50	< 50	94	80 - 120
Iron (Fe)					
Sequential ID No.: 508841					
Iron	µg	< 50	< 50	100	80 - 120
Iron (Fe)					
Sequential ID No.: 508468					
Iron	µg	< 0.5	1.1	NA	NA
Mercury (Hg)					
Sequential ID No.: 508450					
Mercury	µg	< 0.1	< 0.1	5.3	4 - 6
Mercury (Hg)					
Sequential ID No.: 508841					
Mercury	µg	< 0.1	< 0.1	5.0	4 - 6
Mercury (Hg)					
Sequential ID No.: 508468					
Mercury	µg	< 0.1	< 0.1	NA	NA
Potassium (K)					
Sequential ID No.: 508450					
Potassium	µg	< 500	< 500	483	400 - 600
Potassium (K)					
Sequential ID No.: 508841					
Potassium	µg	< 500	< 500	515	400 - 600
Potassium (K)					
Sequential ID No.: 508468					
Potassium	µg	< 25	< 25	NA	NA
Lithium (Li)					
Sequential ID No.: 508450					
Lithium	µg	< 1	< 1	91	80 - 120

RDL : Reported Detection Limit

Appendix 1 of Certificate no.669328 - Page 4 of 9

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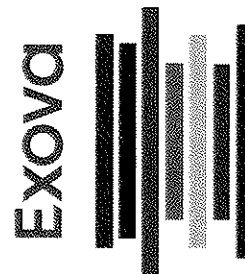
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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Lithium (Li)					
Sequential ID No.: 508841					
Lithium	µg	< 1	< 1	101	80 - 120
Lithium (Li)					
Sequential ID No.: 508468					
Lithium	µg	< 0.5	< 0.5	NA	NA
Magnesium (Mg)					
Sequential ID No.: 508450					
Magnesium	µg	< 1	< 1	455	400 - 600
Magnesium (Mg)					
Sequential ID No.: 508841					
Magnesium	µg	< 1	< 1	489	400 - 600
Magnesium (Mg)					
Sequential ID No.: 508468					
Magnesium	µg	< 0.5	< 0.5	NA	NA
Manganese (Mn)					
Sequential ID No.: 508450					
Manganese	µg	< 1	< 1	96	80 - 120
Manganese (Mn)					
Sequential ID No.: 508841					
Manganese	µg	< 1	< 1	101	80 - 120
Manganese (Mn)					
Sequential ID No.: 508468					
Manganese	µg	< 0.25	< 0.25	NA	NA
Molybdenum (Mo)					
Sequential ID No.: 508450					
Molybdenum	µg	< 1	< 1	96	80 - 120
Molybdenum (Mo)					
Sequential ID No.: 508841					
Molybdenum	µg	< 1	< 1	104	80 - 120
Molybdenum (Mo)					
Sequential ID No.: 508468					
Molybdenum	µg	< 1	< 1	NA	NA
Sodium (Na)					
Sequential ID No.: 508450					

RDL : Reported Detection Limit

Appendix 1 of Certificate no.669328 - Page 5 of 9

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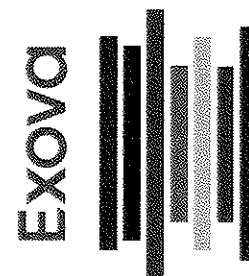
A1-84

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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Sodium	µg	< 500	< 500	499	400 - 600
Sodium (Na)					
Sequential ID No.: 508841					
Sodium	µg	< 500	< 500	526	400 - 600
Sodium (Na)					
Sequential ID No.: 508468					
Sodium	µg	< 25	< 25	NA	NA
Nickel (Ni)					
Sequential ID No.: 508450					
Nickel	µg	< 1	< 1	116	80 - 120
Nickel (Ni)					
Sequential ID No.: 508841					
Nickel	µg	< 1	< 1	98	80 - 120
Nickel (Ni)					
Sequential ID No.: 508468					
Nickel	µg	< 0.5	< 0.5	NA	NA
Phosphorus (P)					
Sequential ID No.: 508450					
Phosphorus	µg	< 100	< 100	95	80 - 120
Phosphorus (P)					
Sequential ID No.: 508841					
Phosphorus	µg	< 100	< 100	100	80 - 120
Lead (Pb)					
Sequential ID No.: 508450					
Lead	µg	< 1	< 1	112	80 - 120
Lead (Pb)					
Sequential ID No.: 508841					
Lead	µg	< 1	< 1	105	80 - 120
Lead (Pb)					
Sequential ID No.: 508468					
Lead	µg	< 0.5	< 0.5	NA	NA
Phosphorus (P)					
Sequential ID No.: 508468					
Phosphorus	µg	< 100	< 100	NA	NA

RDL : Reported Detection Limit

Appendix 1 of Certificate no.669328 - Page 6 of 9

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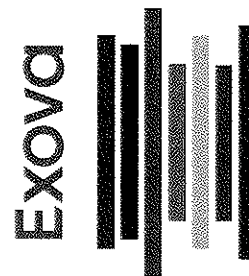
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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Antimony (Sb)					
Sequential ID No.: 508450					
Antimony	µg	< 1	< 1	120	80 - 120
Antimony (Sb)					
Sequential ID No.: 508841					
Antimony	µg	< 1	< 1	107	80 - 120
Antimony (Sb)					
Sequential ID No.: 508468					
Antimony	µg	< 0.5	< 0.5	NA	NA
Selenium (Se)					
Sequential ID No.: 508450					
Selenium	µg	< 1	< 1	93	80 - 120
Selenium (Se)					
Sequential ID No.: 508841					
Selenium	µg	< 1	< 1	94	80 - 120
Selenium (Se)					
Sequential ID No.: 508468					
Selenium	µg	< 0.5	< 0.5	NA	NA
Silicon extractable (Si)					
Sequential ID No.: 508450					
Silicium	µg	< 50	< 50	453	400 - 600
Silicon extractable (Si)					
Sequential ID No.: 508841					
Silicium	µg	< 50	< 50	484	400 - 600
Silicon (Si)					
Sequential ID No.: 508468					
Silicon	µg	< 1	5	NA	NA
Tin (Sn)					
Sequential ID No.: 508450					
Tin	µg	< 1	< 1	107	80 - 120
Tin (Sn)					
Sequential ID No.: 508841					
Tin	µg	< 1	< 1	113	80 - 120
Tin (Sn)					
Sequential ID No.: 508468					
Tin	µg	< 0.5	< 0.5	NA	NA

RDL : Reported Detection Limit

Appendix 1 of Certificate no.669328 - Page 7 of 9

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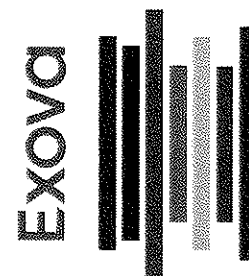
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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Strontium (Sr)					
Sequential ID No.: 508450					
Strontium	µg	< 1	< 1	108	80 - 120
Strontium (Sr)					
Sequential ID No.: 508841					
Strontium	µg	< 1	< 1	103	80 - 120
Strontium (Sr)					
Sequential ID No.: 508468					
Strontium	µg	< 0.5	< 0.5	NA	NA
Tellurium (Te)					
Sequential ID No.: 508450					
Tellurium	µg	< 1	< 1	90	80 - 120
Tellurium (Te)					
Sequential ID No.: 508841					
Tellurium	µg	< 1	< 1	90	80 - 120
Tellurium (Te)					
Sequential ID No.: 508468					
Tellurium	µg	< 1	< 1	NA	NA
Titanium (Ti)					
Sequential ID No.: 508450					
Titanium	µg	< 1	< 1	93	80 - 120
Titanium (Ti)					
Sequential ID No.: 508841					
Titanium	µg	< 1	< 1	101	80 - 120
Titanium (Ti)					
Sequential ID No.: 508468					
Titanium	µg	< 0.5	< 0.5	NA	NA
Thallium (Tl)					
Sequential ID No.: 508450					
Thallium	µg	< 1	< 1	116	80 - 120
Thallium (Tl)					
Sequential ID No.: 508841					
Thallium	µg	< 1	< 1	107	80 - 120
Thallium (Tl)					
Sequential ID No.: 508468					

RDL : Reported Detection Limit

Appendix 1 of Certificate no.669328 - Page 8 of 9

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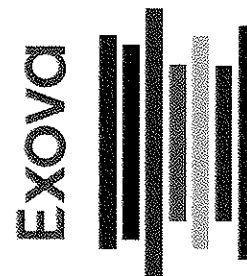
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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Thallium	µg	< 2.5	< 2.5	NA	NA
Uranium (U)					
Sequential ID No.: 508450					
Uranium	µg	< 1	< 1	114	80 - 120
Uranium (U)					
Sequential ID No.: 508841					
Uranium	µg	< 1	< 1	100	80 - 120
Uranium (U)					
Sequential ID No.: 508468					
Uranium	µg	< 0.5	< 0.5	NA	NA
Vanadium (V)					
Sequential ID No.: 508450					
Vanadium	µg	< 1	< 1	114	80 - 120
Vanadium (V)					
Sequential ID No.: 508841					
Vanadium	µg	< 1	< 1	102	80 - 120
Vanadium (V)					
Sequential ID No.: 508468					
Vanadium (V)	µg	< 0.1	< 0.1	NA	NA
Zinc (Zn)					
Sequential ID No.: 508450					
Zinc	µg	< 7	< 7	93	80 - 120
Zinc (Zn)					
Sequential ID No.: 508841					
Zinc	µg	< 7	< 7	96	80 - 120
Zinc (Zn)					
Sequential ID No.: 508468					
Zinc	µg	< 0.5	< 0.5	NA	NA

Comments

Sequential ID no. 508468 : Fer/Silice:
Blanc positif non soustrait des échantillons / Positive blank not subtracted from the samples.

RDL : Reported Detection Limit

Appendix 1 of Certificate no.669328 - Page 9 of 9

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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results - Part 2

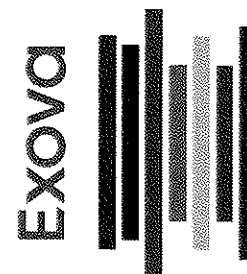
Parameters (Sequential ID No.)	Units	Duplicate		
		Value 1	Value 2	Difference (%)
Aluminum (Al)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Aluminum	µg	603	607	0.7
Antimony (Sb)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Antimony	µg	5	4	22.2
Arsenic (As)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Arsenic	µg	< 4	< 4	-
Barium (Ba)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Barium	µg	< 38	< 38	-
Beryllium (Be)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Beryllium	µg	< 4	< 4	-
Bismuth (Bi)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Bismuth	µg	< 4	< 4	-
Boron (B)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Boron	µg	2010	2040	1.5
Cadmium (Cd)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Cadmium	µg	< 1.9	< 1.9	-
Calcium (Ca)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Calcium	µg	3260	3250	0.3
Chlorides (IC)				
Sequential ID No: 508474	(Sample no)		(2871979)	
Chloride	µg	45100	42300	6.4
Chromium (Cr)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Chromium	µg	7	6	15.4

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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results - Part 2

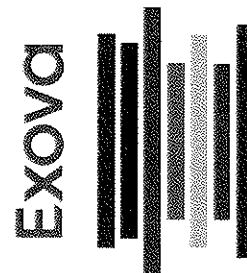
Parameters (Sequential ID No.)	Units	Duplicate		
		Value 1	Value 2	Difference (%)
Cobalt (Co)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Cobalt	µg	< 4	< 4	-
Copper (Cu)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Copper	µg	6	6	0.0
Iron (Fe)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Iron	µg	287	288	0.3
Lead (Pb)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Lead	µg	8	9	11.8
Lithium (Li)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Lithium	µg	< 4	< 4	-
Magnesium (Mg)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Magnesium	µg	867	856	1.3
Manganese (Mn)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Manganese	µg	162	145	11.1
Mercury (Hg)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Mercury	µg	< 0.4	< 0.4	-
Molybdenum (Mo)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Molybdenum	µg	< 4	< 4	-
Nickel (Ni)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Nickel	µg	6	6	0.0
Potassium (K)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Potassium	µg	< 1890	< 1890	-

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Certificat d'analyses

Client: **Exova**

Request Number: **15-670094**

P.O. Number	Your Project ID.	Project Manager
R15-046	R15-046	M. Christian St-Pierre

Quality Control Results - Part 2

Parameters (Sequential ID No.)	Units	Duplicate		
		Value 1	Value 2	Difference (%)
Selenium (Se)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Selenium	µg	< 4	< 4	-
Silver (Ag)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Silver	µg	< 1.9	< 1.9	-
Sodium (Na)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Sodium	µg	5380	5310	1.3
Strontium (Sr)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Strontium	µg	5	5	0.0
Thallium (Tl)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Thallium	µg	< 4	< 4	-
Tin (Sn)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Tin	µg	7	7	0.0
Titanium (Ti)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Titanium	µg	41	41	0.0
Vanadium (V)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Vanadium	µg	< 4	< 4	-
Zinc (Zn)				
Sequential ID No: 508450	(Sample no)		(2871982)	
Zinc	µg	< 26	< 26	-

**SMⁱ**LABORATOIRES
D'ANALYSES
S.M. INC.2350, Chemin du Lac
Longueuil, Québec J4N 1G8
Tel. (514) 332-6001 Fax (514) 332-5066 xx740, Galt Ouest, 2e étage
Sherbrooke, Québec J1H 1Z3
Tel. (819) 566-8855 Fax (819) 566-02243705, boul. Industriel
Sherbrooke, Québec J1L 1X8
Tel. (819) 566-8855 Fax (819) 566-0224

Certificate of Analysis

No M1043078, version 1

Printed on: 2015-07-13

Client: **EXOVA (Pte-Claire)**
Mme Geneviève Sévigny
121, boul. Hymus
Pointe-Claire, Québec
H9R 1E6Client No: 10596
Phone: 514-697-3273
Fax:
Project No: 16404
Purchase Order: CT-049323

Carbon copy:

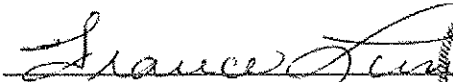
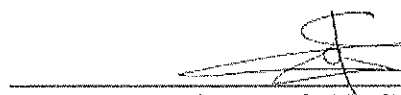
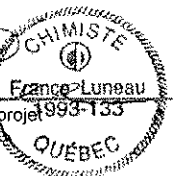
Mme Vanessa Fournier, - Email: Vanessa.Fournier@exova.com

Project:

Type of Sample: Air

Sample No /	Description	Result	Unit	Max. Conc.	Analysis Date
2641644 /	15046-4066(101ml)+406(402ml) - 2871986 Sampled on: - By: Client Reception: 2015-07-07 Mercury (Hg) (NAA)	Accident de laboratoire	µg tot		2015-07-09
2641648 /	15046-4074(104ml)+4075(400ml) - 2872003 Sampled on: - By: Client Reception: 2015-07-07 Mercury (Hg) (NAA)	<0.2	µg tot		2015-07-09
2641651 /	15046-4082(102ml)+4083(400ml) - 2872015 Sampled on: - By: Client Reception: 2015-07-07 Mercury (Hg) (NAA)	<0.2	µg tot		2015-07-09
2641653 /	15046-4088(200ml) - 2872015 Sampled on: - By: Client Reception: 2015-07-07 Mercury (Hg) (NAA)	<0.2	µg tot		2015-07-09

Test Method	Description	External Reference	Internal Procedure
Mercury	Cold vapor and AA	MA.203-Hg 1.0	ILCE-032


France Luneau, Chimiste, chargée de projet 993-133

Chahrezade Guelailia, Chimiste 2014-110


- This certificate should not be partly reproduced without written authorization from Laboratoires d'analyses S.M. inc.
- This certificate of analysis is the only valid reference in case of differences with other transmitted document
- The analysis results refer only to what was provided for testing.
- Unless specified otherwise, all results are calculated on a dry basis.

- NAA : Non Accredited Analysis

Page 1 of 1

A1-92

CLIENT NAME: EXOVA
1390 RUE HOCQUART
ST-BRUNO DE DE MONTARVILLE, QC J3V6E1
(450) 441-5880

ATTENTION TO: CHRISTIAN ST-PIERRE

PROJECT: R15-046

AGAT WORK ORDER: 15M989423

ULTRA TRACE REVIEWED BY: Philippe Morneau, chimiste

DATE REPORTED: 2015-07-23

VERSION*: 1

PAGES (INCLUDING COVER): 8

Should you require any information regarding this analysis please contact your client services representative at (514) 337-1000

***NOTES**

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

A1-93



AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 15M989423

N° DE PROJET: R15-046

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
http://www.agatlab.com

NOM DU CLIENT: EXOVA

PRÉLEVÉ PAR: Exova St-Bruno

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:

Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)									
DATE DE RÉCEPTION: 2015-06-26		#1		#2		#3		DATE DU RAPPORT: 2015-07-23	
IDENTIFICATION DE L'ÉCHANTILLON: 15046.10+.11+.12+.13+.14+.15+.16									
MATRIÈRE: Air									
DATE D'ÉCHANTILLONNAGE: 2015-06-19									
Paramètre	Unités	C / N	LDR	2015-06-19	2015-06-15	LDR	Air	2015-06-21	LDR
2,3,7,8-TCDD (pg total)	pg	3	4	4.5	4.5	4	5	1	<1
1,2,3,7,8 PeCDD (pg total)	pg	3	3	6	7	4	9	2	<2
1,2,3,4,7,8 HxCDD (pg total)	pg	3.5	3.7	5	5	5	6	3	<3
1,2,3,6,7,8 HxCDD (pg total)	pg	3	4	5	9	5	29	3	<3
1,2,3,7,8,9 HxCDD (pg total)	pg	3.5	3.7	5	10	5	19	3	<3
1,2,3,4,6,7,8 HpCDD (pg total)	pg	5	8	7	38	5	103	3	3
OCDD (pg total)	pg	20	23	20	48	8	96	8	<8
2,3,7,8 TCDF (pg total)	pg	0.5	2.2	0.5	8.2	0.5	14.4	1	<1
1,2,3,7,8 PeCDF (pg total)	pg	2	4	5	11	2	19	2	<2
2,3,4,7,8-PeCDF (pg total)	pg	3	<3	4	28	3	56	3	<3
1,2,3,4,7,8 HxCDF (pg total)	pg	3	5	6	36	5	101	1	<1
1,2,3,6,7,8 HxCDF (pg total)	pg	3	3	6	14	5	35	1	<1
2,3,4,6,7,8-HxCDF (pg total)	pg	3	4	6	29	5	70	2	<2
1,2,3,7,8,9 HxCDF (pg total)	pg	4	<4	8	9	6	7	2	<2
1,2,3,4,6,7,8 HpCDF (pg total)	pg	3	9	3	39	3	136	3	4
1,2,3,4,7,8,9 HpCDF (pg total)	pg	4	<4	5	7	4	15	3	<3
OCDF (pg total)	pg	10	19	10	16	10	64	6	11
Sommation des Tétrachlorodibenzodioxines	pg	3	41	5	37	4	46	1	<1
Sommation des Pentachlorodibenzodioxines	pg	3	20	6	82	4	140	2	24
Sommation des Hexachlorodibenzodioxines	pg	4	17	5	53	5	172	3	<3
Sommation des Heptachlorodibenzodioxines	pg	5	20	7	42	5	106	2	8
Sommation des PCDDs	pg	20	121	20	261	8	560	8	34
Sommation des Tétrachlorodibenzofuranes	pg	2	68	0.5	340	0.5	663	1	3

Certifié par:

La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDEFP. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDEFP.

AGAT CERTIFICAT D'ANALYSE

Cette version remplace et annule toute version, le cas échéant. Ce document ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite du laboratoire. Les résultats ne se rapportent qu'aux échantillons soumis pour analyse.

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
http://www.agallabs.com

Certificat d'analyse

N° BON DE TRAVAIL: 15M989423

N° DE PROJET: R15-046

NOM DU CLIENT: EXOVA

PRÉLEVÉ PAR: Exova St-Bruno

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:

Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)

DATE DE RÉCEPTION: 2015-06-26

DATE DU RAPPORT: 2015-07-23

15046.10+11+.

12+13+14+15+.

16

15046.1+2+3+.

4+5+6+7

MATRIÈRE: Air

IDENTIFICATION DE L'ÉCHANTILLON: 4+5+6+7

DATE D'ÉCHANTILLONNAGE: 2015-06-19

Unités

Paramètre

C / N

LDR

2

30

5

264

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510

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7

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AGAT Laboratoires

Certificat d'analyse

N° BON DE TRAVAIL: 15M989423

N° DE PROJET: R15-046

9770 ROUTE TRANSCANADIENNE
ST. LAURENT, QUEBEC
CANADA H4S 1V9
TEL (514)337-1000
FAX (514)333-3046
http://www.agatlabs.com

NOM DU CLIENT: EXOVA

PRÉLEVÉ PAR: Exova St-Bruno

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:

Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)

DATE DE RÉCEPTION: 2015-06-26

DATE DU RAPPORT: 2015-07-23

Étalon de recouvrement		Unités	Limites	DATE D'ÉCHANTILLONNAGE: 2015-06-19	MATRICE: Air	15046.1+2+3+ 4+5+6+7	15046.10+11+ 12+13+14+15+ .16	15046.20+21+ 22+23+24+26	15046.30+31+ 32+33+34+35
		%	30-140	6688240	2015-06-15	Air	6688250	2015-06-21	2015-06-21
								6688261	6688272
13C-2378-TCDF		%	30-140	81	68	83	65	83	93
13C-12378-PeCDF		%	30-140	95	82	83	83	83	111
13C-23478-PeCDF		%	30-140	98	84	84	87	87	117
13C-123478-HxCDF		%	30-140	84	73	73	70	70	85
13C-123678-HxCDF		%	30-140	77	66	66	62	62	79
13C-234678-HxCDF		%	30-140	82	72	72	68	68	85
13C-123789-HxCDF		%	30-140	77	68	68	66	66	83
13C-1234678-HpCDF		%	30-140	79	72	72	68	68	84
13C-1234789-HpCDF		%	30-140	80	76	76	70	70	88
13C-2378-TCDD		%	30-140	58	50	48	48	48	66
13C-12378-PeCDD		%	30-140	76	66	66	70	70	94
13C-123478-HxCDD		%	30-140	68	57	56	56	56	70
13C-123678-HxCDD		%	30-140	64	58	58	56	56	69
13C-1234678-HxCDD		%	30-140	70	63	63	60	60	76
13C-OCDD		%	30-140	41	42	42	40	40	48

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes

6688240-6688272 Le résultat en pg total correspond au composite de chacune des parties du train d'échantillonnage.

Certifié par:



La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDEFP. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDEFP.

AGAT CERTIFICAT D'ANALYSE

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Contrôle de qualité

NOM DU CLIENT: EXOVA

N° DE PROJET: R15-046

PRÉLEVÉ PAR: Exova St-Bruno

N° BON DE TRAVAIL: 15M989423

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:

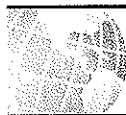
Analyse haute résolution

Date du rapport: 2015-07-23			DUPLICATA			MATÉRIAU DE RÉFÉRENCE				BLANC FORTIFIÉ			ÉCH. FORTIFIÉ		
PARAMÈTRE	Lot	N° éch.	Dup #1	Dup #2	% d'écart	Blanc de méthode	% Récup.	Limites		% Récup.	Limites		% Récup.	Limites	
								Inf.	Sup.		Inf.	Sup.		Inf.	Sup.
Dioxines et furanes - Air (train d'échantillonnage - OTAN 1988)															
2,3,7,8-TCDD (pg total)	1	NA	NA	NA	0.0	< 0.6	110%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,7,8 PeCDD (pg total)	1	NA	NA	NA	0.0	< 0.6	125%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,4,7,8 HxCDD (pg total)	1	NA	NA	NA	0.0	< 0.6	124%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,6,7,8 HxCDD (pg total)	1	NA	NA	NA	0.0	< 0.6	130%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,7,8,9 HxCDD (pg total)	1	NA	NA	NA	0.0	< 0.6	120%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,4,6,7,8 HpCDD (pg total)	1	NA	NA	NA	0.0	< 2	117%	70%	130%	NA	70%	130%	NA	70%	130%
OCDD (pg total)	1	NA	NA	NA	0.0	< 8	118%	70%	130%	NA	70%	130%	NA	70%	130%
2,3,7,8 TCDF (pg total)	1	NA	NA	NA	0.0	< 0.5	129%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,7,8 PeCDF (pg total)	1	NA	NA	NA	0.0	< 2	123%	70%	130%	NA	70%	130%	NA	70%	130%
2,3,4,7,8-PeCDF (pg total)	1	NA	NA	NA	0.0	< 3	125%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,4,7,8 HxCDF (pg total)	1	NA	NA	NA	0.0	< 1	118%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,6,7,8 HxCDF (pg total)	1	NA	NA	NA	0.0	< 1	117%	70%	130%	NA	70%	130%	NA	70%	130%
2,3,4,6,7,8-HxCDF (pg total)	1	NA	NA	NA	0.0	< 2	125%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,7,8,9 HxCDF (pg total)	1	NA	NA	NA	0.0	< 2	113%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,4,6,7,8 HpCDF (pg total)	1	NA	NA	NA	0.0	< 3	105%	70%	130%	NA	70%	130%	NA	70%	130%
1,2,3,4,7,8,9 HpCDF (pg total)	1	NA	NA	NA	0.0	< 0.8	103%	70%	130%	NA	70%	130%	NA	70%	130%
OCDF (pg total)	1	NA	NA	NA	0.0	< 6	129%	70%	130%	NA	70%	130%	NA	70%	130%

Certifié par:

AI-97

La procédure des Laboratoires AGAT concernant les signatures et les signataires se conforme strictement aux exigences d'accréditation ISO 17025:2005 comme le requiert, lorsque applicable, CALA, CCN et MDDEFP. Toutes les signatures sur les certificats d'AGAT sont protégées par des mots de passe et les signataires rencontrent les exigences des domaines d'accréditation ainsi que les exigences régionales approuvées par CALA, CCN et MDDEFP.



Sommaire de méthode

NOM DU CLIENT: EXOVA

N° DE PROJET: R15-046

PRÉLEVÉ PAR: Exova St-Bruno

N° BON DE TRAVAIL: 15M989423

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse haute résolution					
2,3,7,8-TCDD (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8 PeCDD (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8 HxCDD (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8 HxCDD (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9 HxCDD (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8 HpCDD (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
OCDD (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8 TCDF (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8 PeCDF (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,7,8-PeCDF (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8 HxCDF (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8 HxCDF (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,6,7,8-HxCDF (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9 HxCDF (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8 HpCDF (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8,9 HpCDF (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
OCDF (pg total)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Tétrachlorodibenzodioxines	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Pentachlorodibenzodioxines	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Hexachlorodibenzodioxines	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Heptachlorodibenzodioxines	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDDs	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Tétrachlorodibenzofuranes	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Pentachlorodibenzofuranes	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Hexachlorodibenzofuranes	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des Heptachlorodibenzofuranes	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDFs	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8-Tetra CDD (TEF 1.0)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8-Penta CDD (TEF 0.5)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8-Hexa CDD (TEF 0.1)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8-Hexa CDD (TEF 0.1)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9-Hexa CDD (TEF 0.1)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8-Hepta CDD (TEF 0.01)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Octa CDD (TEF 0.001)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,7,8-Tetra CDF (TEF 0.1)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8-Penta CDF (TEF 0.05)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,7,8-Penta CDF (TEF 0.5)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8-Hexa CDF (TEF 0.1)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,6,7,8-Hexa CDF (TEF 0.1)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
2,3,4,6,7,8-Hexa CDF (TEF 0.1)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,7,8,9-Hexa CDF (TEF 0.1)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,6,7,8-Hepta CDF (TEF 0.01)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
1,2,3,4,7,8,9-Hepta CDF (TEF 0.01)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS

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Sommaire de méthode

NOM DU CLIENT: EXOVA

N° DE PROJET: R15-046

PRÉLEVÉ PAR: Exova St-Bruno

N° BON DE TRAVAIL: 15M989423

À L'ATTENTION DE: CHRISTIAN ST-PIERRE

LIEU DE PRÉLÈVEMENT:

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Octa CDF (TEF 0.001)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
Sommation des PCDDs et PCDFs (TEQ)	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-2378-TCDF	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-12378-PeCDF	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-23478-PeCDF	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123478-HxCDF	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123678-HxCDF	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-234678-HxCDF	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123789-HxCDF	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234678-HpCDF	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234789-HpCDF	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-2378-TCDD	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-12378-PeCDD	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123478-HxCDD	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-123678-HxCDD	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-1234678-HxCDD	2015-07-02	2015-07-10	HR-151-5400	EPA 1613/EPA Method 23	HRMS
13C-OCDD	2015-07-02	2015-07-10	HR-151-5400	CEAEQ MA.400 - DF 1.0	HRMS

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