Report No. 22326

Report:

Clean Harbors Canada, Inc.
Annual Emission Testing Program for Compliance with Amended ECA No. 8295-CGGLZ3

Date: May 2, 2024



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Submitted to:	Erica Carabott Director, Environmental Compliance - Canada Clean Harbors Canada 4090 Telfer Road, RR #1 Corunna, Ontario N0N 1G0	
	Tel:	(519) 864-3890
	Cell:	(289) 691-2955
	E-mail:	carabott.erica@cleanharbors.com
Prepared by:	Tina Sanderson, B.Sc. Senior Project Manager, Emission Testing ORTECH Consulting Alliance Inc. 804 Southdown Road, Mississauga, Ontario L5J 2Y4	
	Tel:	(905) 822-4120, Ext. 522
	E-mail:	tsanderson@ortech.ca

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EXECUTIVE SUMMARY

ORTECH Consulting Alliance Inc. (ORTECH) was requested by Clean Harbors to conduct a comprehensive emission testing program at the incineration facility located at 4090 Telfer Road in Corunna, Ontario.

The emission testing program was performed to satisfy the requirements of Ontario Ministry of the Environment, Conservation and Parks (MECP) Amended Environmental Compliance Approval (ECA) No. 8295-CGGLZ3, issued September 1, 2023. Section 9(1) of the ECA states that "the company shall perform Source Testing in accordance with the procedures in Schedule C to determine the rates of emissions of the Test Contaminants from the Targeted Sources listed in Schedule A, within 6 months from the date of this approval. Source testing shall be repeated annually."

The emission testing program was completed between March 5 and March 7, 2024. During the emission testing program triplicate tests were completed for particulate matter, metals, acid gases, semi-volatile organic compounds (SVOCs), combustion gases and volatile organic compounds at the Main Stack.

The contaminant groups included in the emission test program and the reference test methods used are summarized below:

Test Groups	Reference Method
Particulate and Metals	US EPA Method 29 (Modified)
SVOCs	Environment Canada Method EPS 1/RM/2
Acid Gases	US EPA Method 26
Volatile Organic Compounds	US EPA SW-846 Method 0030 (SLO VOST modification)
Combustion Gases:	
Carbon Dioxide and Oxygen	US EPA Method 3A
Carbon Monoxide	US EPA Method 10
Sulphur Dioxide	US EPA Method 6C
Oxides of Nitrogen	US EPA Method 7E
Total Hydrocarbons	US EPA Method 25A

Testing was performed at a high feed rate, as specified by the ECA, to demonstrate compliance with MECP emission criteria. During the emission tests the average combined rich, lean and emulsion feed rates was 209 L/min. The maximum combined feed of all waste streams cannot not exceed 245 L/min. The Thermal Desorber Unit (TDU) was exhausting to the incinerator during each test.

In addition to the requirements of Regulation 419, Section 5 of the ECA provides concentration limits for particulate matter, mercury, and the toxic equivalent concentration of dioxins and furans in the stack gases.

Summary results for those compounds with specific limits listed in the ECA, to be confirmed through source testing, are provided below.

Stack Gas Concentration Criterion	Allowable Value	Test Average Value
Particulate Matter	maximum 20 mg/Rm^3 (1)	0.80 mg/Rm^3 (1)
Mercury	maximum 50 $\mu g/Rm^3$ (1)	1.36 $\mu g/Rm^3$ (1)
Dioxin and Furan TEQ	maximum 80 pg TEQ/Rm^3 (2)	9.47 pg TEQ/Rm^3 (2)

(1) adjusted to 11% oxygen, dry at 25°C and 1 atmosphere
(2) calculated using half the detection limit for compounds reported as <RDL, adjusted to 11% oxygen and dry at 25°C and 1 atmosphere

A tabular comparison of calculated emission rates based on the source testing results for the Test Contaminants to relevant estimates described in the facility's most recent ESDM Report is provided below.

Contaminant	Source Testing Emission Rate (g/s)	ESDM Emission Rate (g/s)	Contaminant	Source Testing Emission Rate (g/s)	ESDM Emission Rate (g/s)
Particulate Matter	1.72E-02	2.36E-01	Acenaphthene	4.42E-08	2.78E-06
Hydrogen Chloride	5.15E-01	1.78E+00	Acenaphthylene	8.23E-07	2.78E-06
Hydrogen Fluoride	6.61E-01	8.35E-02	Anthracene	8.54E-08	5.56E-07
Carbon Monoxide	1.21E+00	8.50E-01	Benzo(a)Anthracene	3.66E-08	2.78E-05
Nitrogen Oxides ***	3.25E+00	2.71E+00	Benzo(b)Fluoranthene	3.66E-08	2.78E-06
Sulphur Dioxide	1.42E+01	1.53E+01	Benzo(k)Fluoranthene	3.66E-08	2.78E-06
Antimony	5.41E-07	3.58E-05	Benzo(g,h,i)Perylene	2.96E-07	2.78E-06
Arsenic	3.41E-06	1.75E-04	Benzo(a)Pyrene	3.66E-08	1.44E-07
Barium	1.93E-04	2.90E-04	Biphenyl	6.43E-06	2.42E-05
Beryllium	7.43E-07	7.68E-07	2-Chloronaphthalene	3.30E-07	2.78E-04
Boron	4.70E-02	1.39E-02	Chrysene/Triphenylene	4.30E-08	2.78E-05
Cadmium	4.30E-06	2.63E-05	Dibenzo(a,c/a,h)Anthracene	4.19E-08	2.78E-06
Chromium	1.51E-04	2.12E-04	Fluoranthene	2.76E-07	2.78E-06
Cobalt	4.35E-06	2.41E-05	Fluorene	1.60E-07	2.78E-06
Copper	1.01E-04	3.05E-04	Indeno(1,2,3-cd)Pyrene	6.36E-08	2.78E-06
Iron	1.54E-03	7.40E-03	1-Methylnaphthalene	4.79E-06	2.78E-06
Lead	3.15E-06	1.40E-04	2-Methylnaphthalene	4.40E-06	2.78E-06
Lithium	3.84E-06	2.58E-05	Naphthalene	7.66E-05	1.45E-04
Manganese	1.80E-04	2.13E-03	Perylene	3.66E-08	2.78E-05
Mercury	2.93E-05	7.26E-02	Phenanthrene	1.42E-06	2.78E-05
Molybdenum	8.67E-05	1.66E-04	Pyrene	2.93E-07	5.56E-05
Nickel	1.22E-04	1.78E-04	Acetone	2.37E-03	2.90E-02
Selenium	6.39E-04	6.68E-04	Benzene	3.95E-03	2.13E-02
Silver	8.68E-07	3.53E-06	Bromodichloromethane	7.66E-05	2.64E-03
Strontium	7.72E-06	7.90E-05	Bromoform	2.13E-04	2.66E-03
Tin	1.55E-04	1.67E-04	Bromomethane	1.24E-03	3.26E-03
Titanium	3.41E-05	2.25E-03	2-Butanone	1.24E-03	2.80E-02
Vanadium	7.84E-07	5.50E-05	Carbon Tetrachloride	4.58E-05	2.64E-03
Zinc	2.84E-04	8.72E-04	Chloroform	4.58E-05	2.66E-03
Octachlorodibenzofuran	1.31E-14	8.33E-14	Dibromochloromethane	1.85E-04	5.28E-04
Total Dioxins, Furans and PCBs	2.10E-10	1.44E-10	Dichlorodifluoromethane	4.58E-05	2.64E-03
Total PCBs	2.98E-07	8.73E-07	1,2-Dichloroethane	4.58E-05	2.97E-03
1,3-Dichlorobenzene	1.15E-05	1.39E-03	trans,1,2-Dichloroethene	4.58E-05	2.64E-03
1,4-Dichlorobenzene	2.39E-06	1.39E-03	1,1-Dichloroethene	4.58E-05	2.64E-03
1,2-Dichlorobenzene	2.47E-06	1.40E-03	1,2-Dichloropropane	4.58E-05	2.64E-03
1,2,4-trichlorobenzene	1.35E-06	1.39E-03	Ethylbenzene	8.28E-05	1.39E-02
1,2,3-trichlorobenzene	5.96E-07	1.39E-03	Mesitylene (1,3,5-Trimethylbenzene)	4.58E-05	1.39E-03
Hexachlorobenzene	2.04E-07	6.60E-04	Methylene Chloride	5.38E-05	2.96E-03
Total Chlorobenzenes	2.14E-05	1.39E-03	Styrene	3.76E-04	1.40E-02
Hexachlorobutadiene	3.66E-08	6.60E-04	Tetrachloroethene	4.58E-05	2.64E-02
Hexachloroethane	3.66E-08	2.64E-03	Toluene	2.18E-03	1.70E-02
2,4/2,5-dichlorophenol	5.38E-06	1.39E-03	1,1,1-Trichloroethane	4.58E-05	2.64E-03
2,4,6-trichlorophenol	1.38E-05	1.39E-03	Trichloroethene/1,1,2-Trichloroethene	4.58E-05	2.64E-03
2,4,5-trichlorophenol	1.83E-07	1.39E-03	Trichlorofluoromethane	4.58E-05	2.64E-03
2,3,4,6-tetrachlorophenol	2.81E-07	1.39E-03	M&P-Xylene	1.22E-04	1.39E-03
Pentachlorophenol	1.83E-07	1.39E-03	O-Xylene	4.95E-05	1.39E-03
			Vinyl Chloride	4.58E-05	2.64E-03

All tables referenced in this report are provided in Appendix 1.

1. INTRODUCTION

ORTECH Consulting Alliance Inc. (ORTECH) was requested by Clean Harbors to conduct a comprehensive emission testing program at the incineration facility located at 4090 Telfer Road in Corunna, Ontario. The Facility NAICS Code is 562210 - Waste Treatment and Disposal.

The emission testing program was performed to satisfy the requirements of Ontario Ministry of the Environment, Conservation and Parks (MECP) Amended Environmental Compliance Approval (ECA) No. 8295-CGGLZ3, issued September 1, 2023. Section 9(1) of the ECA states that "the company shall perform Source Testing in accordance with the procedures in Schedule C to determine the rates of emissions of the Test Contaminants from the Targeted Sources listed in Schedule A, within 6 months from the date of this approval. Source testing shall be repeated annually." A copy of the ECA is provided in Appendix 2.

The emission testing program was completed between March 5 and March 7, 2024. During the emission testing program triplicate tests were completed for particulate matter, metals, acid gases, semi-volatile organic compounds (SVOCs), combustion gases and volatile organic compounds at the Main Stack.

2. PROCESS DESCRIPTION

The incineration system consists of a refractory-lined, fixed-chamber combustion reactor and a three-stage gas conditioning and cleaning system. In the combustion chamber there are two reaction zones referred to as the primary zone and secondary zone. In the primary zone, high heating value ("rich") wastes are intimately mixed with combustion air and ignited to produce a turbulent, luminous flame. Intermediate heating value ("emulsion") wastes are also injected into the primary zone. Reaction temperatures are continuously monitored and controlled to maintain temperatures in excess of 1300°C.

Downstream of the luminous primary reaction zone, aqueous ("lean") wastes with a much lower heating value are sprayed into the combustion chamber. This portion of the chamber is known as the secondary zone and temperatures within this zone are maintained in excess of 800°C.

Upon exiting the secondary zone of the combustion chamber, the combustion gases are cooled in a quench chamber to about 550°C by the injection of process water or a mixture of process water and leachate which has been pre-treated through the Dissolved Air Flotation (DAF) unit. The combustion gases are further cooled and acid gases are removed in a spray dryer where alkaline waste liquid ("alkaline") and/or reagent grade lime slurry is injected. The exit temperature of the gases leaving the spray dryer is typically between 160°C and 195°C, and does not exceed 220°C. Powdered activated carbon (PAC) is injected into the air pollution control system to absorb contaminants. The 15-minute rolling average powdered activated carbon (PAC) injection rate must not be less than 9 kilograms per hour during waste feed.

Finally, the gases are directed to a four-compartment baghouse with a total filtering area of 2790 square meters where the fine suspended particulate matter and PAC in the gas phase is filtered out. The hot, humid gases exiting the baghouse are then discharged to the atmosphere through a 68.5 meter high, 1.47 meter inside diameter (tapers to 1.22 m at the stack exit), insulated main stack. The stack gases are monitored by continuous emission monitors (CEMs) located in the induced draft fan discharge ducting with opacity being measured in-situ eight stack diameters downstream of the breaching inlet to the stack (approximately fifteen meters above grade, accessible by a ladder). The CEMs record oxygen, carbon monoxide, sulphur dioxide, total hydrocarbons (THC) and hydrogen chloride concentrations exhausting from the main stack.

The Leachate Pretreatment System was operating during the test program and pre-treated leachate was injected into the Quench during the emission test program at an average rate of 24.3 L/min.

During the emission testing program, the incinerator was operated with an average primary zone temperature of 1401°C. Normal operating temperature must be in excess of 1300°C while achieving the maximum thermal and feed loading practical within the incineration system. The average spray dryer outlet temperature was 198°C (must not exceed 220°C).

Average process feedrates measured for the rich, lean and emulsion streams for the emission testing program were as follows:

Feed Stream	Feedrate (L/min)			
	Test No. 1	Test No. 2	Test No. 3	Average
Rich	31.3	36.9	36.2	34.8
Lean	160	169	165	165
Emulsion	8.51	9.13	9.14	8.93
Total	200	215	210	209

The powdered activated carbon (PAC) injection rate during the test program was 11.4 kg/h (25.2 lb/h).

3. SAMPLING LOCATION

The Main Stack has an inside diameter of 1.47 meters at the sampling platform and 1.22 meters at the stack exit. The stack height above grade is 68.5 meters.

Sampling for particulate and metals and semi-volatile organics was conducted at the sampling platform permanently installed on the stack, through two ports at 90° to each other and at the same vertical height. Acid gases and volatile organics were sampled through a third port located on the same sampling platform.

The sampling ports were located at an "ideal" location as defined by the Ontario Source Testing Code. An "ideal" location is defined as being at least eight stack diameters downstream and at least two stack diameters upstream of flow disturbances.

The combustion gases sampling probe was inserted into the breaching connecting the induced draft fan to the stack. Previous testing programs conducted by ORTECH at the Clean Harbors Main Stack have shown that there is no stack gas stratification between the breaching connecting the induced draft fan to the stack and the stack sampling platform location.

4. SAMPLING METHODOLOGY

4.1 General

This section outlines the sampling procedures as well as pre-test and on-site internal quality assurance/quality control (QA/QC) procedures which were utilized in the testing program. The procedures described in this section ensured that representative samples were collected and that the integrity of the collected samples was maintained. The use of these sampling procedures significantly reduced the possibility of sample contamination from external sources. Sample handling and documentation requirements were key factors in this program.

Triplicate emission tests were completed for particulate matter, metals, semi-volatile organic compounds, acid gases, volatile organic compounds and combustion gases at the Main Stack.

The contaminant groups included in the emission test program and the reference test methods used are summarized below:

Test Groups	Reference Method
Particulate and Metals	US EPA Method 29 (Modified)
SVOCs	Environment Canada Method EPS 1/RM/2
Acid Gases	US EPA Method 26
Volatile Organic Compounds	US EPA SW-846 Method 0030
Combustion Gases:	
Carbon Dioxide and Oxygen	US EPA Method 3A
Carbon Monoxide	US EPA Method 10
Sulphur Dioxide	US EPA Method 6C
Oxides of Nitrogen	US EPA Method 7E
Total Hydrocarbons	US EPA Method 25A

4.2 Particulate and Metals

Particulate and metals were sampled using the sampling procedures outlined in US EPA Method 29. Major components of the sampling train were as follows:

- A one-piece glass nozzle and probe liner assembly
- A quartz fiber filter with low metal background
- The first impinger contained 100 mL of distilled, de-ionized water
- The second (knock-out) impinger was initially empty
- The third and fourth impingers contained 100 mL each of 5% nitric acid/10% hydrogen peroxide solution to collect metals
- The fifth impinger was initially empty
- The sixth and seventh impingers contained 100 mL each of 4% potassium permanganate/10% sulphuric acid solution to collect mercury
- The eighth impinger contained silica gel

Each test for particulate matter and metals involved the collection of stack gas sampled isokinetically at ten points centered on equal areas along each of two traverses (at 90° to each other) of the stack. Each of the twenty points was sampled for twelve minutes for a total actual sampling time of two hundred and forty minutes.

At three minute time increments throughout each test the following information was measured and recorded on field data sheets:

- Elapsed sampling time
- Dry gas meter volume
- Pitot tube pressure
- Stack gas temperature
- Probe, oven and impinger temperatures
- Dry gas meter temperatures
- Control module orifice pressure
- Sampling pump vacuum

The particulate and metals field data sheets are provided in Appendix 3.

At the start and finish of sampling each traverse the sampling train was leak-checked. A valid leak-check as specified by the sampling method is a leakage rate of less than 0.00057 cubic meters per minute (m^3/min) or 4% of the estimated sampling rate, whichever is less. All of the leak-checks, as detailed on the field data sheets, were acceptable.

A blank train was prepared and the samples recovered in a manner identical to the test sampling trains.

4.3 Semi-Volatile Organic Compounds

Semi-volatile organic compounds (SVOC), including dioxins and furans, polychlorinated biphenyls (PCBs), chlorobenzenes (CBs), chlorophenols (CPs) and polycyclic aromatic hydrocarbons (PAHs) were sampled using the sampling train and sampling procedures outlined in Environment Canada Report EPS 1/RM/2. Major components of the sampling train were as follows:

- A glass nozzle and probe liner assembly
- A clean and proven glass fiber filter
- Amberlite XAD-2 sorbent resin was used in a trap to collect semi-volatile organics
- The first impinger was initially empty
- The second impinger contained 100 mL of ethylene glycol
- The third impinger was initially empty
- The fourth impinger contained silica gel

All test train and auxiliary glassware were cleaned according to the methods as outlined in Environment Canada EPS 1/RM/2 except that the methods were modified by combining proofing extracts prior to analysis for the target analytes.

Each test for semi-volatile organic compounds involved the collection of stack gas sampled isokinetically at ten points centered on equal areas along each of two traverses (at 90° to each other) of the stack. Each of the twenty points was sampled for twelve minutes for a total actual sampling time of two hundred and forty minutes.

At three minute time increments the following information was measured and recorded on field data sheets:

- Elapsed sampling time
- Dry gas meter volume
- Pitot tube pressure
- Stack gas temperature
- Probe, oven and impinger outlet temperatures
- XAD-2 trap outlet temperature
- Dry gas meter temperatures
- Control module orifice pressure
- Sampling pump vacuum

Field data sheets for the SVOC tests are provided in Appendix 4.

At the start and finish of sampling each traverse, the sampling train was leak-checked. A valid leak-check as specified by the sampling method is a leakage rate of less than 0.00057 m^3/min or 4% of the estimated average sampling rate, whichever is less. All of the leak-checks for the tests reported, as detailed on the field data sheets, were acceptable.

A blank train was prepared in a manner identical to the test trains. It was assembled, transported and left at the sampling site for a period of time equal to the test trains. The blank train was treated at the sampling site in the same manner as the test trains and a gas volume was drawn through the blank train approximately equal to the leak-check volume for the test trains.

4.4 Acid Gases

Hydrogen fluoride and hydrogen chloride were sampled together using the sampling train and sampling procedures outlined in US EPA Method 26. Major components of the test train were as follows:

- A glass nozzle and probe liner assembly
- The first two impingers were initially be empty
- The third and fourth impingers contained 15 mL of 0.1N H_2SO_4 each
- The fifth impinger was initially empty
- The sixth impinger contained silica gel

At five minute time increments throughout each test the following information was measured and recorded on field data sheets:

- Elapsed sampling time
- Dry gas meter volume
- Pitot tube pressure
- Stack gas temperature
- Probe, oven and impinger temperatures
- Dry gas meter temperatures
- Control module orifice pressure
- Sampling pump vacuum

Field data sheets for the acid gases tests are provided in Appendix 5.

At the start and finish of each test the sampling train was leak-checked. A valid leak-check as specified by the sampling method is a leakage rate of less than 0.00057 m^3/min or 4% of the estimated average sampling rate, whichever is less.

A blank train was prepared and samples recovered in a manner identical to the test sampling trains.

4.5 Volatile Organic Compounds

Volatile Organic Compound (VOC) sampling was performed in accordance with US EPA SW-846 Method 0030 (SLO-VOST modification). Briefly, the sampling method involved withdrawing a sample of the stack gas through a heated glass lined sampling probe containing a glass wool plug to remove particulate material. The sample was then passed through a water cooled condenser and a Tenax GC adsorbent tube, as the primary volatile organic collection device. Condensate was collected in an initial condensate trap and the sample was then drawn through a second condenser and a combined secondary Tenax GC/charcoal adsorbent tube, as the secondary volatile organic collection device. The sampled gas stream then passed through a silica gel trap to remove any remaining traces of moisture prior to the rotameter, pump and dry gas meter.

During each test, a single forty minute run was completed at an approximate flowrate of 0.5 L/min. A fourth run was also conducted and the tube pair was archived in case a sample was lost during desorption or analysis. Note the samples for Test No. 1, Test No. 2 and Test No. 4 were analyzed and reported; VOST Tests No. 1, 2 and 4 coincide with the isokinetic tests performed on March 5, 6 and 7, 2024. Test No. 3, the archived tube pair, was conducted on March 6, 2024.

At five minute time increments throughout sampling each pair of tubes, the following information was measured and recorded:

- Elapsed sampling time
- Dry gas meter volume
- Stack gas temperature
- Probe and first condenser outlet temperatures
- Dry gas meter temperatures
- Control module orifice pressure
- Sampling pump vacuum

The sampling train components were cleaned using the procedures in US EPA SW-846 Method 0030, Volatile Organic Sampling Train (VOST).

Field data sheets for the VOST tests are provided in Appendix 6.

4.6 Combustion Gases

Sampling by ORTECH for the combustion gases involved the insertion of a 9 millimeter inside diameter stainless steel probe into the breaching connecting the induced draft fan to the stack. The combustion gases were drawn through the probe and heated filter oven and transferred to the Mobile Source Monitoring Laboratory (MSML) by way of a heated Teflon sampling line that was maintained at a temperature of approximately 160°C throughout the test program to prevent possible condensation.

The combustion gas sample was then conditioned through another heated filter and dried using a two-pass refrigeration unit. The gas was then split into several portions that were metered with rotameters and delivered to each continuous combustion gas analyzer with the exception of the total hydrocarbon analyzer.

A Siemens Ultramat 23 analyzer was used to measure oxygen and carbon dioxide concentrations. The method used for sampling was US EPA Method 3A.

A Teledyne API 200EH chemiluminescence analyzer was used to measure the nitrogen oxides concentrations. The method used for sampling was US EPA Method 7E.

A Teledyne API T100H analyzer was used to measure sulphur dioxide concentrations. The method used was EPA Method 6C.

A Siemens Ultramat 23 analyzer was used to measure carbon monoxide concentrations. The method used for sampling was US EPA Method 10.

Total hydrocarbon concentrations were measured using a VIG20 analyzer following the procedures detailed in US EPA Method 25A.

The following data acquisition devices were used in conjunction with the continuous analyzers:

Data Logger:	Modicon TSX Momentum data acquisition system, 16 channels
Data Software:	CEMView
Data Processing:	Lap Top Computer

These data acquisition devices were used to transfer the electrical signals from each analyzer into a data file for later processing in a spreadsheet format.

Calibrations were completed before and after each test run according to the sampling protocols.

Linearization checks were performed on the CEMs prior to and at the conclusion of testing. Zero and span drifts, and bias checks were performed prior to and at the completion of each test.

Leak checks of the CEM system were conducted sporadically throughout the program. ORTECH generally relied on other indicators of leakage problems, such as oxygen interference. However, it should be noted that all leak checks performed were acceptable.

5. ANALYTICAL METHODOLOGY

5.1 Particulate and Metals

Prior to preparing the sampling trains for the field program, recovery data sheets were prepared on which to record initial weights of the test train components. These sheets were also used during sample recovery to record final weights, moisture gains and sample volumes. The sample recovery data sheets are provided in Appendix 7.

Following the conclusion of each test performed with the particulate and metals sampling train, the probe was disconnected and all openings were sealed with Teflon tape. The probe was recovered on the stack platform to reduce the risk of breaking the glass nozzle and probe liner assembly. A nylon bristle probe brush was used to assist in dislodging particulate material, which may have adhered to the inside surfaces of the glass nozzle and probe assembly. This front half rinse was then repeated using 0.1N nitric acid, however no brushing was performed. The test train and probe rinse samples were then transported to the ORTECH laboratory for sample recovery.

Once at the laboratory, the test trains were visually inspected to ensure that no damage during transportation had occurred. The train recovery procedures are detailed in the Pre-Test Plan as well as in the recovery data sheets and are briefly described as follows.

The condition of the test train was noted. Filter and impinger content colors were recorded. The filter housing was disassembled and the filter carefully transferred to its pre-test petri dish with the use of Teflon coated tweezers.

All of the impingers were wiped dry on the outside then weighed and the results used to determine the stack gas moisture content.

The front half of the sampling train (the cyclone by-pass and filter top glassware) was brushed and rinsed thoroughly with acetone. A brush was used to assist in dislodging particulate material which may have adhered to the inside surfaces of the front-half glassware. This front half rinse was then repeated using 0.1N nitric acid, however, no brushing was performed. These rinsings were added to the appropriate probe rinse samples that were previously collected on-site.

The contents of the first five impingers were combined. Triplicate rinses of the impingers and connecting glassware back to and including the Teflon filter support were performed with 0.1N nitric acid and combined with the impinger solution sample.

The contents of the sixth and seventh impingers were combined and the impingers and connecting glassware were rinsed in triplicate with approximately 100 mL of fresh acidified potassium permanganate solution followed by a triplicate rinse with distilled, de-ionized water. All the rinsings of the glassware were added to the impinger solution sample.

Any brown residue which was present in the impingers was removed by rinsing with 8N hydrochloric acid. These acid rinses were added to another sample bottle that initially contained 150 mL of distilled, de-ionized water.

Each sample container was sealed, labeled, and the fluid level marked once that portion of the recovery was completed. The samples were then checked against the master sample log/chain of custody form and refrigerated until they were delivered to ALS for analysis.

Particulate samples (front-half acetone rinse and the filter) collected from the particulate and metals train underwent gravimetric determination prior to metals analysis.

The particulate and metals analytical reports are provided in Appendix 8.

5.2 Semi-Volatile Organics

Prior to loading of the field test trains, recovery data sheets were prepared to record initial weights of the test train components. These sheets were also used during sample recovery to record final weights and determine moisture gains and sample volumes. The train recovery data sheets are provided in Appendix 9.

Following the conclusion of each test performed with the semi-volatile organics trains, the probe was disconnected and all openings were sealed with Teflon tape. The probe was cleaned on-site by brushing and rinsing with a Teflon probe brush and acetone into a pre-cleaned sample bottle. The probe was then rinsed with hexane into the same sample bottle and the test train and probe rinse sample were then transported to the ORTECH laboratory for sample recovery.

Once at the laboratory, the test trains were visually inspected to ensure that no damage during transportation had occurred. The train recovery procedures are detailed in the Pre-Test Plan and recovery data sheets and are briefly described as follows.

The condition of the test train was noted. Filter, XAD-2 trap and impinger content colours were recorded. The filter housing was disassembled and the filter carefully transferred with the use of Teflon coated tweezers to a sheet of pre-cleaned aluminum foil which was then folded in half and the ends crimped and placed in a pre-cleaned glass petri dish.

All of the impingers were wiped dry on the outside then weighed and the results used to determine the stack gas moisture content.

The front half of the sampling train was rinsed thoroughly with acetone. This front half rinse was then repeated using hexane, and these acetone and hexane rinsings were combined with the probe rinse sample collected on-site.

The XAD-2 trap was drained of excess cooling water and weighed. The ends were then sealed with Teflon tape and the trap was labeled and wrapped in aluminum foil. Since ORTECH uses a one piece trap and condenser, the five minute soak of this component was performed by the analytical laboratory.

The contents of the first three impingers were combined in a pre-cleaned amber glass sample bottle. Triplicate rinses of the impingers and connecting glassware back to and including the trap bottom u-tube were performed first with HPLC water, which was added to the impinger solution sample, and then with acetone followed by hexane. The acetone and hexane rinses were combined in a separate sample bottle from the impinger solutions.

Each sample container was sealed, labeled and the fluid level marked (where appropriate) once that portion of the recovery was completed. The samples were then checked against the master sample log/chain of custody form and refrigerated until they were delivered to ALS for analysis.

Semi-volatile organic analyses were performed on single composite extracts for each test according to EPS 1/RM/3 and EPS 1/RM/23. These methods were modified slightly to include other semi-volatile organic compounds following the Environment Canada NITEP/Mid-Connecticut combustion test procedures. These analytical improvements have been implemented over many years and have been identified and approved through laboratory accreditation and acceptance by the MECP.

The SVOC analytical reports are provided in Appendix 10.

5.3 Hydrogen Chloride and Hydrogen Fluoride

Following the conclusion of each test performed with the hydrogen fluoride and hydrogen chloride train the probe was disconnected and all openings were sealed with Teflon tape. The test train was then recovered on site in the ORTECH sample recovery trailer. The train recovery procedure is briefly described as follows.

The condition of the test train was noted. All the impingers were wiped dry on the outside and the contents of the first five impingers were combined and the volume measured. The first five impingers and connecting glassware were rinsed thoroughly with distilled, de-ionized water and these rinsings were added to the impinger solution sample. The final volume of the sample was made up to a known volume with distilled de-ionized water.

Each sample container was sealed, labeled and the fluid level marked (where appropriate) once that portion of the recovery was completed. The samples were then checked against the master sample log/chain of custody form and refrigerated until they were transported to the ALS laboratory for analysis.

Analysis for hydrogen fluoride and hydrogen chloride was performed via ion chromatography.

The acid gases sample recovery data sheet is provided in Appendix 11. The hydrogen chloride and hydrogen fluoride analytical results are presented in Appendix 12.

5.4 Volatile Organics Train Recovery

Following the conclusion of each tube pair run performed with the volatile organic sampling train (VOST), the tubes were removed from the train, capped and placed in appropriately labeled test tubes which were also capped. The tubes were sent to BV Labs for volatile organic compound (VOC) analysis.

The VOST samples were analyzed via SW846 Method 5041A/8260B. Briefly, after spiking with internal and surrogate standards, the traps were thermally desorbed through a clam shell heater then through a chilled aqueous purge to remove the bulk of the moisture onto a secondary trap. These secondary traps are further dried using a counter current flow of helium. The secondary traps are then thermally desorbed into a VOC sample concentrator and again the VOCs are thermally transferred/concentrated onto a GC column. The VOC compounds are separated via gas chromatography (GC) and analyzed via GC/MS.

The condensate collected from each tube pair run was carefully transferred to a glass bottle and combined as a single composite sample. The condensate sample was archived for future analysis if necessary.

The VOST analytical report is provided in Appendix 13.

6. INTERNAL QA/QC PROGRAM

This section of the report documents the quality assurance/quality control (QA/QC) activities performed by ORTECH during the execution of this test program.

Sampling and analysis methods used for the emission testing program have been outlined earlier in this report and are detailed in the Pre-Test Plan. All methods are based on published standard or draft methods.

Prior to commencing the test program, a Pre-Test Plan letter was submitted to the Ministry of the Environment Conservation and Parks detailing the sampling and analytical methodology. A copy of the Pre-Test Plan acceptance letter indicating acceptance of the sampling methodology is provided in Appendix 14.

6.1 Pre-Test Activities

Prior to the commencement of the emission testing program, the following activities were performed:

- Preparation, pre-cleaning and proofing of the manual stack sampling trains and sample containers.
- Preparation and quality checks of chemicals, reagents, filters and XAD-2 adsorbent resin.
- Calibration of all sampling and monitoring equipment.
- Development (and review) of data acquisition, data reduction and summary procedures.
- Development of internal QA/QC field data sheets.
- Review of equipment calibration logs.
- Review of proposed field and laboratory procedures.

All proving data for the Semi-Volatile Organics Train glassware and auxiliary equipment was deemed acceptable prior to the test program. For each batch of VOST tubes, a minimum of 1 pair in 10 was analyzed to demonstrate an absence of significant background contaminants from the tubes prior to the test program.

All equipment used in the field testing program was calibrated and checked prior to the field testing program. Pertinent equipment calibration data is supplied in Appendix 15.

As part of the pre-test activities linearization checks were performed on the ORTECH CEMs. The linearization check data and daily calibration data for the ORTECH CEMs is provided in Appendix 16.

As part of ORTECH's internal QA/QC, data acquisition, data reduction and summary procedures were already in place and periodic spot checks of the computer programs were performed using known data sets.

6.2 Emission Testing QA/QC Results

Prior to the field testing program, preliminary data was acquired to perform the required calculations for choosing a nozzle size to permit isokinetic sampling.

The internal diameter of each duct was verified and the appropriate number of sampling points was marked on each sampling probe.

The following general QA/QC criteria were satisfied for each of the test trains where applicable:

- All sampling equipment was cleaned and proven clean (where applicable) prior to the commencement of the field testing program.
- All sampling equipment passed a visual and operational check prior to use in the field.
- Oil filled manometer gauges which had been properly leveled and zeroed were used to measure the velocity pressure.

- All sampling data was recorded in ink on preformatted data sheets at least once every 5 minutes and/or at least twice during sampling each traverse point.
- Any unusual occurrences were noted during each test on the appropriate data form.
- The field team leader reviewed all calibration and sampling data forms daily.
- Only tapered edge sampling nozzles and S-type pitot tubes that had been visually inspected and caliper measured, and deemed acceptable, were used for sampling.
- Each leg of the S-type pitot was leak-checked before the start of testing. The leak-checks were all acceptable (no leak detected).
- Each entire sampling train met acceptable leak-check criteria before and after each test, and during any move from one sampling traverse to another. If a test did not meet the leak-check criteria the test was voided and repeated.
- The S-type pitot tube and sampling nozzle were maintained parallel to the flow during testing and care was taken to ensure that they did not scrape the ports when being inserted and removed from the stack.
- The probe and filter components were maintained at 120°C ± 14°C during testing. If the probe or filter temperature was outside of the acceptable range the test was halted until the temperature could be brought back into the acceptable range.
- Clean Harbors was responsible for monitoring process operations during testing and notified ORTECH when testing was to proceed.

6.3 Sample Recovery, Handling and Custody

ORTECH's sample identification scheme and system for handling and processing samples was initiated as part of ORTECH's sample tracking system for stack emission samples. All samples were identified by a unique sample number comprised of a series of numbers and letters. A master sample log/chain of custody form was maintained by the QA/QC designate and was made available to the ORTECH personnel designated to perform the sample recovery for a specific sampling train. Once a sample was collected it was labeled and checked against the sample log by the QA/QC designate.

The information contained within the sample number and the sample log enabled the sampling, recovery, data reduction and report writing personnel to easily determine the test date, test number, test type and train sample identification for a given sample. To ensure continuity, the analytical laboratory was requested to use the ORTECH number for sample identification.

The ORTECH personnel responsible for delivering samples used the master sample log/chain of custody form to document the transfer of the samples to the analytical laboratory. Appropriate care was taken when shipping the samples in order to maintain sample integrity. Once the samples and master sample log/chain of custody forms were received by the analytical laboratory, the laboratory personnel verified that all samples had been received and their integrity maintained. The laboratory personnel then signed the master log and made a photocopy which ORTECH personnel received as a record of the chain of custody for the samples.

6.4 Analytical Results

Analyses for the present emission testing program were performed using acceptable laboratory procedures in accordance with the specified analytical protocols. Adherence to the prescribed QA/QC procedures ensured data of consistent and measurable quality. Analytical quality control focused on the use of control standards to provide a measure of analytical accuracy. Replicate analysis (usually duplicate analysis) of the same sample was used as a means of determining precision of the various analytical procedures. Also specific acceptance criteria were defined for various analytical operations including calibrations, control standard analysis, drift checks, blanks, etc.

The following general QA/QC procedures were incorporated into the analytical effort:

- the on-site Field Supervisor reviewed all data and QA/QC data on a daily basis for completeness and acceptability
- master sample logs were maintained for all samples collected
- analytical QA/QC data was tabulated by the analytical laboratories using appropriate charts or forms
- all hard copy raw data was maintained in organized files

Specific analytical QA/QC procedures are presented in the analytical reports and are briefly summarized below.

6.4.1 Metals Sample Analysis QA/QC

The analysis of the Method 29 stack samples involved sample digestion followed by Inductively Coupled Argon Plasma Mass Spectroscopy (ICP-MS) analysis. The analysis for mercury employed cold vapour atomic absorption (CVAA). The analytical QA/QC is described as follows and the results are provided in the analytical report.

ICPMS Analysis

The quality assurance activities conducted by the analytical laboratory are detailed in the Quality Assurance Report provided in the analytical report. Specific QA/QC results are summarized below:

- One duplicate sample analysis was performed for the test program. The relative percent difference was less than 15.3% within the acceptable limit of less than ±20%, for elements that are greater than 5 times the minimum detection limit.
- A blank spike (performed as a pre-digestion spike) was analyzed with the test samples. All of the recovery results were between 85-119%. The acceptable limit is 85-115% of the true value.
- A matrix spike (performed as a post digestion spike) was analyzed with the test samples. All of the recovery results were between 82-110%. The acceptable limit is 75-125% of the true value.

The following general analytical QA/QC requirements must also be met or the samples are re-analyzed:

- An instrument calibration check standard was analyzed immediately after the calibration curve and must be within 90%-110% of the actual concentrations.
- Instrument calibration blank check sample were analyzed with every 10 samples and must be within three times the minimum detection limit.
- A continuing calibration check is run every 10 samples and must be within 85%-115% of the actual concentrations.
- Instrument (interference) check sample for ICP-MS analysis was analyzed before and after each analytical run. The value(s) found for the interference check sample must be within 80%-120% of the true value.

Mercury Analysis

The quality assurance activities conducted by the analytical laboratory are detailed in the Quality Assurance Report provided in the analytical report. Specific QA/QC results are summarized below:

- One duplicate sample analysis was performed for each fraction. The relative percent difference was less than 7.2% well within the acceptable limit of less than ±20%, for fractions that are greater than 5 times the minimum detection limit.
- A blank spike (performed as a pre-digestion spike) was analyzed with the test samples. All of the recovery results were between 90-95%. The acceptable limit is 90-110% of the true value.
- A matrix spike (performed as a post digestion spike) was analyzed with the test samples. All of the recovery results were between 78-101%. The acceptable limit is 75-125% of the true value.

The following general analytical QA/QC requirements must also be met or the samples are re-analyzed:

- A 5 point calibration was performed.
- An instrument check calibration standard was analyzed immediately after the calibration and must be within 90%-110% of the actual concentration
- One mid-range calibration standard was analyzed after 10 samples and at the end of the run and must be within 85%-115% of the actual concentration.
- Instrument calibration blank check sample is analyzed with every 10 samples and must be within three times the minimum detection limit.

6.4.2 Acid Gas Sample Analysis QA/QC

Analyses of the acid gas samples from the Method 26 sampling train was performed by Ion Chromatography (IC). The quality assurance activities conducted by the analytical laboratory are detailed in the Quality Assurance Report provided in the analytical report. Specific QA/QC results are summarized below:

- All of the hydrogen chloride and hydrogen fluoride analyses were conducted in duplicate. The relative percent difference was less than 1.0%, well within the acceptable limit of less than ±20% for compounds that are greater than 5 times the minimum detection limit.

The following general analytical QA/QC requirements must also be met or the samples are re-analyzed:

- A 6 point calibration bracketing the expected range.
- An instrument check calibration standard was analyzed immediately after the calibration and must be within 90%-110% of the actual concentration.
- A complete set of calibration standards were analyzed at the end of the analysis and must be within 10% of the true value.
- One mid-range calibration standard was analyzed after 10 samples and at the end of the run and must be within 90%-110% of the actual concentration.
- Instrument calibration blank check samples were analyzed with every 10 samples and must be within three times the minimum detection limit for each ion.

6.4.3 SVOC Sample Analysis QA/QC

ORTECH uses a one piece condenser and XAD-2 trap for SVOC collection, this component of the test train was Teflon sealed and wrapped with foil prior to being transported to the analytical laboratory where it was given the required five minute soaking with each of acetone and hexane.

The combined filter, probe rinse, Amberlite XAD-2 cartridge, impinger solutions and associated rinse and soaking solutions for each of the semi-volatile organics trains were analyzed together as one sample per test.

The analytical laboratory added extraction standards to all samples prior to extraction. Clean-up standards were added just prior to the clean-up process. Recoveries of the clean-up standards provide an indication on the losses that occur during the extract clean-up. The analytical report includes the lists of the field spike, extraction and clean-up standards used. The analysis of samples involved complex sample extraction and cleanup, followed by HRMS/MS analysis.

The dioxin and furan field spike recoveries were between 82-108%.

Per the analytical reports, the recoveries for some standards were marginally above the method control limit, however no impact to data quality is expected.

6.4.4 Volatile Organic Compound Analysis QA/QC

Prior to sampling, VOST tube pairs were cleaned and conditioned under helium sweep (approximately 50 mL/min flow) through each tube in an oven at 280°C for at least 12 hours. One VOST pair was proofed for every 10 pairs cleaned. VOST tubes were end-capped and stored sealed in individual screw-capped vials at 4°C between conditioning and shipment to the field.

A field blank and a laboratory method blank were analyzed with the test sample tubes that were taken in the field. VOST tubes were desorbed and analyzed combined as pairs and analyzed according to SW846 Method 5041A/8260B.

The surrogate recoveries for each of the surrogates should be between 50-150%. Recoveries that were below or above the control limit were flagged in the analytical report. The surrogate recoveries for the test samples were between 76-107%.

7. RESULTS AND DISCUSSION

Emission tests were completed for particulate matter, metals, semi-volatile organic compounds, acid gases, combustion gases and volatile organic compounds at the Main Stack between March 5 and March 7, 2024.

Detailed test schedules are provided in Table 1.

7.1 Stack Gas Sampling Parameters

Emission test calculations for the particulate and metals tests are provided in Appendix 17. Emission test calculations for the semi-volatile organics tests are provided in Appendix 18.

Stack gas sampling parameters for the particulate and metals, and semi-volatile organics tests are summarized in Table 2. These parameters include calibration data, nozzle diameter, dry gas volume sampled and average percentage of isokineticity for each test.

7.2 Stack Gas Physical Parameters

Stack gas physical parameters for the particulate and metals, and the semi-volatile organics tests are given in Table 3. Stack gas volumetric flowrate data for the particulate and metals, and the semi-volatile organics tests are given in Table 4.

The average values for each sampling train are summarized below:

Stack Gas Parameter	Particulate and Metals	SVOC
Gas Temperature (°C)	193	192
Moisture in Gas Stream (%)	49.2	48.3
Velocity (m/s)	31.9	32.4
Absolute Pressure (kPa)	99.8	99.8
Actual Flowrate (m^3/s)	54.4	55.3
Dry Reference Flowrate (Rm^3/s)*	17.4	18.0
Dry Adjusted Flowrate (Rm^3/s)**	21.5	22.2
Wet Reference Flowrate (Rm^3/s)*	34.2	34.9

* at 25°C and 1 atmosphere
** at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

7.3 Particulate Emission Data

Particulate emission data obtained from the three particulate and metals test trains are given in Table 5. The results for the three particulate tests were consistent. The average particulate emission results are presented below:

Particulate Emission Parameter	Average
Actual Concentration (mg/m^3)	0.32
Dry Reference Concentration (mg/Rm^3)*	0.99
Dry Adjusted Concentration (mg/Rm^3)**	0.80
Wet Reference Concentration (mg/Rm^3)*	0.50
Particulate Emission Rate (mg/s)	0.017

* at 25°C and 1 atmosphere
** at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

The total particulate matter collected in the blank acetone probe rinse (0.6 mg) and filter sample (2.6 mg) was significant when compared to the amounts collected in the test trains. The particulate emission data was not blank corrected.

7.4 Hydrogen Fluoride and Hydrogen Chloride Emission Data

Hydrogen chloride and hydrogen fluoride emission data obtained from each of the three acid gas tests are given in Table 6.

Hydrogen chloride and hydrogen fluoride were detected in quantities greater than the detect limit in all three tests. The average acid gas emission results are presented below:

Parameter	Hydrogen Chloride	Hydrogen Fluoride
Actual Conc. (mg/m^3)	9.35	12.1
Dry Reference Conc. (mg/Rm^3)*	28.9	37.4
Dry Adjusted Conc. (mg/Rm^3)**	23.3	30.2
Dry Conc. (ppm)	14.8	19.1
Emission Rate (g/s)	0.51	0.66

* at 25°C and 1 atmosphere
** at 25°C and 1 atmosphere, adjusted to 11% oxygen

7.5 Combustion Gas Emission Data

Average combustion gas analysis data for each of the tests conducted at the Main Stack are summarized in Table 7 as dry concentrations. The average combustion gas analysis data is also shown on a dry basis adjusted to 11% oxygen in Table 7.

Combustion gas emission data for the three tests performed at the Main Stack are given in Table 8. The combustion gas emission data are summarized in Table 9.

The average combustion gas emission results were as follows:

Combustion Gas Parameter	Average Value						
	CO_2	CO	NO_X	NO	O_2	THC	SO_2
Actual Conc. (mg/m^3)	53705	22.1	59.2	35.2	36671	259	13.5
Dry Reference Conc. (mg/Rm^3)*	166233	68.3	183	109	113485	802	41.8
Dry Adjusted Conc. (mg/Rm^3)**	134652	55.5	148	88.4	143873	647	33.9
Dry Conc. (ppm)	92400	59.7	97.4	88.9	86800	32.8	307
Emission Rate (g/s)	2944	1.21	3.25	1.93	2010	14.2	0.74

* at 25°C and 1 atmosphere
** at 25°C and 1 atmosphere, adjusted to 11% oxygen

Combustion gas concentrations measured by the ORTECH continuous emission monitoring system, expressed as 1-minute average concentrations, for the three tests performed at the Main Stack are provided in Appendix 19.

7.6 Metals Emission Data

Metal analytical results are given in Tables 10, 11 and 12 for Test No. 1, Test No. 2 and Test No. 3, respectively. Metal concentrations and emission rates are shown in Tables 13, 14 and 15 for Test No. 1, Test No. 2 and Test No. 3, respectively.

Summaries of the metal actual concentrations, dry reference concentrations, dry adjusted concentrations, wet reference concentrations, and emission rates including the coefficients of variation for the three tests performed during the emission testing program are provided in Tables 16, 17, 18, 19, and 20, respectively. The highest average metal emission rates were reported for aluminum (4.25 mg/s), boron (47.0 mg/s), calcium (2.15 mg/s), iron (1.54 mg/s), potassium (1.66 mg/s) silicon (61.3 mg/s) and sodium (14.2 mg/s). The average sulphur emission rate was 5917 mg/s. All other average metal emission rates, including mercury, were at or below 1.0 mg/s.

The metals analysis of the Method 29 test trains is performed on three separate analytical fractions, the probe and filter nitric acid digest, the probe and filter hydrofluoric acid digest, and the analysis of the train impingers and associated rinses. In instances where all analyses were reported to be below the detection limit for a given metal, the value of the detection limit for the fraction most likely to contain that metal was used to calculate emission data, and the remaining fractions were assigned a value of zero. In instances where any given fraction(s) was detected that value was used to calculate emission data and the remaining undetected fraction(s) was assigned a value of zero. Table 21 summarizes the average metal emission data for the three tests performed.

The relatively high blank analyses for aluminum, boron, calcium, magnesium, silicon and sodium (Table 22) were likely caused by the harsh digestion conditions for the filter.

The ECA provides a stack concentration limit for mercury. A summary of the mercury emission data is provided below.

Emission Parameter	Average Mercury
Actual Concentration (µg/m^3)	0.54
Dry Reference Concentration (µg/Rm^3)*	1.69
Dry Adjusted Concentration (µg/Rm^3)**	1.36
Wet Reference Concentration (µg/Rm^3)*	0.86
Emission Rate (mg/s)	0.029

* at 25°C and 1 atmosphere
** at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

The concentrations of mercury was well below the limit listed in the ECA of 50 µg/Rm^3 adjusted to 11% oxygen.

7.7 Semi-Volatile Organic Emission Data

The filter, probe rinse (front half rinse), Amberlite XAD-2 extract, and the impinger solutions with back-half rinse, for each of the semi-volatile organics trains were combined for one analysis per test train for the semi-volatile organic compounds.

7.7.1 Dioxins and Furans Emission Data

Dioxins and furans are groups of chemically related chlorinated organic compounds or congeners. There are seventy-five dioxin congeners and one hundred and thirty five furan congeners. The individual congeners all have different molecular structures and they may also have different molecular formulae. Individual congeners, which have the same molecular formula but different molecular structure, are referred to as isomers. Groups of isomers are referred to as congener groups or homologues. The basic dioxin and furan molecules have the molecular formulae $C_{12}H_8O_2$ and $C_{12}H_8O$, respectively. In chlorinated dioxin and furans, between one and eight chlorine atoms may replace an equal number of hydrogen atoms in the basic molecule.

The following table lists the chlorinated dioxin and furan congener groups, and the number of isomers present in each group:

Congener Group Abbreviation		Number of Chlorine Atoms Per Molecule	Molecular Formula	Number of Isomers Per Congener Group
Dioxins	M1CDD	1	$C_{12}H_7ClO_2$	2
	D2CDD	2	$C_{12}H_6Cl_2O_2$	10
	T3CDD	3	$C_{12}H_5Cl_3O_2$	14
	T4CDD	4	$C_{12}H_4Cl_4O_2$	22
	P5CDD	5	$C_{12}H_3Cl_5O_2$	14
	H6CDD	6	$C_{12}H_2Cl_6O_2$	10
	H7CDD	7	$C_{12}H_1Cl_7O_2$	2
	O8CDD	8	$C_{12}Cl_8O_2$	1
Furans	M1CDF	1	$C_{12}H_7ClO$	4
	D2CDF	2	$C_{12}H_6Cl_2O$	16
	T3CDF	3	$C_{12}H_5Cl_3O$	28
	T4CDF	4	$C_{12}H_4Cl_4O$	38
	P5CDF	5	$C_{12}H_3Cl_5O$	28
	H6CDF	6	$C_{12}H_2Cl_6O$	16
	H7CDF	7	$C_{12}H_1Cl_7O$	4
	O8CDF	8	$C_{12}Cl_8O$	1

In Ontario, the MECP normally requires that only the higher tetra to octa (T4CDD to O8CDD) dioxin congeners and the higher tetra to octa (T4CDF to O8CDF) furan congeners are included in air emission testing. This is because the lower mono to tri congener groups (M1CDD to T3CDD and M1CDF to T3CDF) are considered to be generally less toxic than the higher congener groups and the test procedures have not been validated for these lower groups. In addition, it is acceptable to the MECP to use only specific isomers in the higher congener groups to compare emission data with the MECP interim guideline for dioxin and furan emissions.

Dioxin and furan congener group analytical results and emission data for the three tests performed are given in Table 23, Table 24 and Table 25 for Test No. 1, Test No. 2 and Test No. 3, respectively. These analyses are shown as congener groups from T4CDF to O8CDF and T4CDD to O8CDD, as normally required by the MECP.

For the dioxins and furans, as with the other semi-volatile organic components, amounts collected were assumed to be equivalent to the detection limit, where the analytical results were below the reportable detection limit.

Summaries of the dioxin and furan congener group actual concentrations, dry reference concentrations, dry adjusted concentrations, wet reference concentrations, and emission rates, including the coefficients of variation for the tests performed during the emission testing program are provided in Tables 26, 27, 28, 29, and 30, respectively. A summary of the dioxin and furan congener group emission data is detailed in Table 31.

The total dioxin and furan congener emission rates were 4.94 ng/s for dioxins and <5.47 ng/s for furans.

The amounts of dioxins and furans detected in the blank sampling train and in the lab blank were insignificant when compared to the amounts detected in the test trains since most of the congener groups were at or slightly above the detection limit. The blank sampling train analytical results are shown in Table 32. The blank analyses were not subtracted from the test sample analyses during calculation of the dioxin and furan emission data.

Dioxin and furan isomer analytical results and emission data for the three tests performed are given in Table 33, Table 34 and Table 35 for Test No. 1, Test No. 2 and Test No. 3, respectively. The isomers included in these tables are considered the most toxic of all the dioxin and furan isomers. They are characterized by having chlorine atoms located at the 2, 3, 7 and 8 positions of the basic dioxin and furan molecules.

Summaries of the dioxin and furan isomer actual concentrations, dry reference concentrations, dry adjusted concentrations, wet reference concentrations, and emission rates including the coefficients of variation for the three tests performed during the emission testing program are provided in Tables 36, 37, 38, 39, and 40, respectively.

A summary of the dioxin and furan specific isomer emission data is detailed in Table 41.

The amounts of dioxins and furans detected in the blank sampling train (<50.7 pg) and in the lab blank (<69.8 pg) were significant compared to the amounts detected in the test trains (from <644 to <905 pg) since most of the isomers were at or near the reportable detection limit. The blank analyses were not subtracted from the test sample analyses during the calculation of the emission data. The specific isomer blank analysis is provided in Table 42.

Several schemes have been proposed for calculating dioxin and furan toxic equivalents (TEQ's) in which different factors have been assigned to the various isomers and congener groups. Calculations in this report are based on the method preferred by the MECP, which uses International Toxicity Equivalency Factors (I-TEFs).

The purpose in calculating dioxin and furan emission rates as toxic equivalents is to provide a means of assessing and comparing the effects of dioxin and furan emission rates for different emission sources. In these calculations, 2,3,7,8-T4CDD, the most toxic of all the dioxin and furan isomers, is assigned an arbitrary value of 1.0 for a toxic equivalency factor. Then, other dioxin and furan isomers are assigned toxic equivalency factors which are based on their relative toxicity compared with 2,3,7,8-T4CDD. Emission rates for each isomer are multiplied by their assigned factor and the products are summed to provide the toxic equivalency emission rate.

Dioxin and furan TEQ actual concentrations, dry reference concentrations, dry adjusted concentrations, wet reference concentrations and emission rates are shown in Tables 43, 44, 45, 46 and 47, respectively. A summary of the average dioxin and furan toxicity equivalent emission data is given in Table 48.

The MECP "Summary of Standards and Guidelines to Support Ontario Regulation 419/05 – Air Pollution – Local Air Quality", dated April 2012, provided a new framework for calculating dioxin and furan toxicity equivalent concentrations which includes emission data for 12 dioxin-like PCBs. This document was replaced by "Air Contaminants Benchmarks List: standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", however the dioxin and furan toxicity equivalent calculation methodology remains the same.

Table 43 to 48 show the total dioxins and furan emission data calculated using the toxicity equivalent calculation method detailed in Schedule D of the ECA.

The average test result (<13.8 pg I-TEQ/Rm^3) is well below the Environment Canada level of quantification (LOQ) for dioxin and furan emissions (32 pg I-TEQ Rm^3) at dry reference conditions.

The dioxins and furans point of impingement concentration was calculated using the methodology detailed in the “Air Contaminants Benchmarks List: standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants” and includes the 12 dioxin-like PCBs. Table 49 shows the dioxins, furans and dioxin-like PCBs emission data calculated using the framework detailed in the MECP document (using half the detection limit for those compounds not found in quantities greater than the reportable detection limit).

A summary of the dioxin and furan toxicity equivalent emission data obtained during the test program is presented below:

Dioxin and Furan Emission Parameter	Full Detection Limit Dioxins & Furans Only (Table 48)	Half Detection Limit Dioxins, Furans & PCBs (Table 49)
Actual Conc. (pg TEQ/m^3)	<4.49	3.81
Dry Reference Conc. (pg TEQ/Rm^3)*	<13.8	11.7
Dry Adjusted Conc. (pg TEQ/Rm^3)**	<11.2	9.47
Wet Reference Conc. (pg TEQ/Rm^3)*	<7.12	6.03
Emission Rate (ng TEQ/s)	<0.25	0.21

* at 25°C and 1 atmosphere

** at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

7.7.2 Polychlorinated Biphenyl Emission Data

Polychlorinated Biphenyl’s (PCB’s) are also a family of congeners with different molecular structures and different numbers of chlorine atoms in the molecular structure. The results are shown as congener groups that include congeners with the same number of chlorine atoms. Normally, the MECP requires that dichlorinated PCB (D2PCB) congeners to decachlorinated PCB (D10PCB) congeners are included in PCB emission data.

PCB analytical results and emission data are given in Table 50, Table 51 and Table 52 for Test No. 1, Test No. 2 and Test No. 3, respectively. The amount collected in a test train was assumed to be equivalent to the detection limit, where the analytical results were below the reportable detection limit.

A summary of the PCB actual concentrations, dry reference concentrations, dry adjusted concentrations, wet reference concentrations, and emission rates are shown in Tables 53, 54, 55, 56 and 57, respectively. A summary of the average PCB emission data is given in Table 58.

The average total PCB emission rate was calculated to be <0.30 µg/s for the tests performed.

Blank sampling train and laboratory blank analytical results for PCBs are given in Table 59. As with all other analytical results reported the test train samples were not blank corrected.

7.7.3 Chlorobenzene and Chlorophenol Emission Data

As with dioxins and furans, chlorobenzenes and chlorophenols are groups of compounds that have different molecular structures and may also have different numbers of chlorine atoms in the basic molecule. Chlorobenzenes have the structure of the benzene molecule except that between one and six chlorine atoms are substituted for an equal number of hydrogen atoms in the benzene ring. Benzene has the molecular formula C_6H_6. Chlorobenzene congener groups have the molecular formulae C_6H_5Cl, $C_6H_4Cl_2$, $C_6H_3Cl_3$, $C_6H_2Cl_4$, C_6HCl_5 and C_6Cl_6. Chlorophenols have the structure of the phenol molecule except that between one and five chlorine atoms are substituted for an equal number of hydrogen atoms in the benzene ring. Phenol has the molecular formula C_6H_5OH. Chlorophenol congener groups have the molecular formulae C_6H_4ClOH, $C_6H_3Cl_2OH$, $C_6H_2Cl_3OH$, C_6HCl_4OH and C_6Cl_5OH.

Chlorobenzene isomer and congener group analytical results and emission data are provided in Table 60, Table 61 and Table 62 for Test No. 1, Test No. 2 and Test No. 3, respectively. Chlorobenzene isomer and congener group actual concentrations, dry reference concentrations, dry adjusted concentrations, wet reference concentrations, and emission rates are shown in Tables 63, 64, 65, 66 and 67, respectively.

A summary of the average isomer and congener group emission data for chlorobenzenes, and other related chlorinated compounds, is given in Table 68.

The average chlorobenzene congener group emission rates were as follows:

Congener Group	Average Emission Rates (µg/s)
Dichlorobenzenes	16.3
Trichlorobenzenes	2.47
Tetrachlorobenzenes	1.93
Pentachlorobenzene	0.45
Hexachlorobenzene	0.20

The total chlorobenzene congener group emission rate averaged 21.4 µg/s for the tests performed.

Three additional related chlorinated compounds were analyzed (hexachlorobutadiene, hexachloroethane and octachlorostyrene). However, these compounds were not detected in levels greater than the reportable detection limit in any of the tests performed.

The chlorobenzene isomer and congener lab blank and blank train analyses are summarized in Table 69. The analytical results for the test train samples were not blank corrected.

Chlorophenol isomer and congener group analytical results and emission data are provided in Table 70, Table 71 and Table 72 for Test No. 1, Test No. 2 and Test No. 3, respectively. Chlorophenol isomer and congener group actual concentrations, dry reference concentrations, dry adjusted concentrations, wet reference concentrations, and emission rates are shown in Tables 73, 74, 75, 76 and 77, respectively.

A summary of the average chlorophenol emission data is given in Table 78.

The average chlorophenol congener emission rates were as follows:

Congener Group	Average Emission Rates (µg/s)
Dichlorophenols	<5.75
Trichlorophenols	<14.4
Tetrachlorophenols	<0.46
Pentachlorophenol	<0.18

The total chlorophenol congener group emission rate averaged <20.8 µg/s for the tests performed.

The blank analyses data for the chlorophenols is detailed in Table 79. The analytical results for the test train samples were not blank corrected.

7.7.4 Polycyclic Aromatic Hydrocarbon Emission Data

The SVOC samples were analyzed for 40 polycyclic aromatic hydrocarbons. Dibenzo(a,h)anthracene co-elutes with dibenzo(a,c)anthracene on the GC/MS. The data reported for dibenzo(a,c)anthracene represents the total of the (a,h) and (a,c) isomers. Similarly, triphenylene and chrysene co-elute. Analytical results and emission data are provided in Table 80, Table 81 and Table 82 for Test No. 1, Test No. 2 and Test No. 3, respectively.

PAH actual concentrations, dry reference concentrations, dry adjusted concentrations, wet reference concentrations, and emission rates are shown in Tables 83, 84, 85, 86 and 87, respectively.

A summary of the average PAH emission data is given in Table 88.

The total PAH emission rate averaged <98.4 µg/s with naphthalene representing approximately 78% of the total PAH emissions.

Table 89 summarizes the lab blank and blank train PAH analysis. The blank train sample analyses were not subtracted from the test train sample analyses for the purposes of emission rate calculations.

7.8 Volatile Organic Emission Data

Three forty minute test runs were completed for volatile organic compounds using SLO-VOST. One backup pair of tubes was collected and archived in case a sample was lost during the analytical extraction process.

Volatile organic analysis data for the tests is provided in Table 90, 91 and Table 92 for Test No. 1, Test No. 2 and Test No. 4, respectively. Test No. 3 was archived. The average test results of volatile organic actual concentrations, dry reference concentrations, dry adjusted concentrations, wet reference concentrations, and emission rates are shown in Table 93 to 97, respectively. The average volatile organic emission data is summarized in Table 98.

The average total VOC emission data collected from the VOST sampling train is presented below:

VOC Emission Parameter	Average
Actual Conc. ($\mu g/m^3$)	<235
Dry Reference Conc. ($\mu g/Rm^3$)*	<727
Dry Adjusted Conc. ($\mu g/Rm^3$)**	<588
Wet Reference Conc. ($\mu g/Rm^3$)*	<372
Emission Rate (mg/s)	<12.9

* at 25°C and 1 atmosphere
** at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Analysis of blank adsorbent tubes is provided in Table 99. The field blank tubes were taken to the test site and uncapped in order to expose the tubes to the ambient environment at the sampling location. Test sample analyses were not blank corrected during the calculation of the emission data.

8. FACILITY PROCESS DATA

Incinerator process data was supplied by Clean Harbors personnel for the emission test periods. The process data is provided as average values for each test and as overall average values for the following process parameters:

- daily incineration report of analysis
- incinerator feed rates (rich, lean, emulsion, alkaline and leachate streams)
- volumetric flowrates (TDU, secondary air and stack gases)
- PAC feed rate
- temperatures (primary zone, secondary zone, spray dryer inlet and outlet)
- pressures (spray dryer outlet, baghouse differential)
- combustion gas stack concentrations (CO, HCl, CO_2, H_2O, THC, O_2, SO_2)
- stack gas opacity

The process data is provided in Appendix 20.

Testing was performed at a high feed rate, as specified by the ECA, to demonstrate compliance with MECP emission criteria. The maximum combined feed of all waste streams cannot not exceed 245 L/min. During the emission tests the average combined rich, lean and emulsion feed rates was 209 L/min (85.3% of the maximum combined federate). The Thermal Desorber Unit (TDU) was exhausting to the incinerator during each test.

The Leachate Pretreatment System was operating during the test program and pre-treated leachate was injected into the Quench during the emission test program at an average rate of 24.3 L/min.

The analytical data for the leachate and treated effluent collected during the source testing and the amount of effluent used as quench during the testing is also provided in Appendix 20.

APPENDIX 1

Data Tables
(99 pages)

TABLE 1
Clean Harbors Sarnia
Test Schedules

Particulate and Metals

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
1	March 5, 2024	9:36	14:45	240
2	March 6, 2024	8:55	13:31	240
3	March 7, 2024	8:36	13:48	240

Semi-Volatile Organics

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
1	March 5, 2024	9:36	15:12	240
2	March 6, 2024	8:55	13:31	240
3	March 7, 2024	8:36	13:48	240

Acid Gases

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
1	March 5, 2024	9:52	10:52	60
2	March 6, 2024	11:50	12:50	60
3	March 7, 2024	10:02	11:02	60

Volatile Organic Compounds

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
1	March 5, 2024	14:10	14:50	40
2	March 6, 2024	9:07	9:47	40
3	March 6, 2024	10:03	10:43	40
4	March 7, 2024	8:49	9:29	40

Combustion Gases

Test Number	Test Date	Sampling Period Start	Sampling Period Finish	Sampling Time* min
1	March 5, 2024	9:36	15:12	207
2	March 6, 2024	8:55	13:31	240
3	March 7, 2024	8:36	13:48	240

* Actual sampling time excluding leak-checks and traverse changes.

TABLE 2
Clean Harbors Sarnia
Stack Gas Sampling Parameters

Particulate and Metals Trains

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
1	0.844	1.035	6.32	4.696	101.2
2	0.844	1.035	6.32	4.618	102.4
3	0.844	1.035	6.32	4.762	101.7

Semi-Volatile Organics Trains

Test No.	Pitot Tube Coefficient	Dry Gas Meter Factor	Nozzle Diameter mm	Gas Volume Sampled Rm^3 *	Percentage of Isokineticity %
1	0.843	0.992	6.43	4.706	98.3
2	0.847	0.963	6.40	4.981	101.8
3	0.847	0.963	6.40	5.079	100.2

* Dry at 25°C and 1 atmosphere

TABLE 3
Clean Harbors Sarnia
Stack Gas Physical Parameters

Particulate and Metals Trains

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
1	192	49.0	32.0	99.4	9.05	8.96
2	195	49.4	31.5	99.8	9.64	8.48
3	192	49.1	32.1	100.1	9.04	8.59
Average	193	49.2	31.9	99.8	9.24	8.68

Semi-Volatile Organics Trains

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
1	193	48.3	31.6	99.4	9.05	8.96
2	192	48.7	32.6	99.8	9.64	8.48
3	191	48.0	33.1	100.1	9.04	8.59
Average	192	48.3	32.4	99.8	9.24	8.68

Averaged Metals and Semi-Volatile Organics Trains

Test No.	Gas Temp. °C	Moisture by Volume %	Gas Velocity m/s	Absolute Pressure kPa	Carbon Dioxide by Volume % *	Oxygen by Volume % *
1	192	48.7	31.8	99.4	9.05	8.96
2	194	49.1	32.1	99.8	9.64	8.48
3	192	48.6	32.6	100.1	9.04	8.59
Average	193	48.8	32.2	99.8	9.24	8.68
Coefficient of Variation, %	0.5	0.5	1.3	0.4	3.7	2.9

* Dry basis

TABLE 4
Clean Harbors Sarnia
Stack Gas Volumetric Flowrates

Particulate and Metals Trains

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
1	54.6	17.5	21.1	34.3
2	53.7	17.1	21.4	33.7
3	54.8	17.7	22.0	34.7
Average	54.4	17.4	21.5	34.2

Semi-Volatile Organics Trains

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
1	53.8	17.5	21.1	33.8
2	55.6	18.0	22.6	35.1
3	56.4	18.6	23.1	35.8
Average	55.3	18.0	22.2	34.9

Averaged Metals and Semi-Volatile Organics Trains

Test No.	Actual Flowrate m^3/s	Dry Reference Flowrate Rm^3/s *	Dry Adjusted Flowrate Rm^3/s **	Wet Reference Flowrate Rm^3/s*
1	54.2	17.5	21.1	34.1
2	54.6	17.5	22.0	34.4
3	55.6	18.1	22.5	35.2
Average	54.8	17.7	21.9	34.6
Coefficient of Variation, %	1.3	2.1	3.4	1.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 5
Clean Harbors Sarnia
Particulate Emission Data

Test No.	Particulate Collected Probe Rinse mg	Main Filter mg	Total mg	Dry Gas Volume Sampled Rm^3*	Particulate Concentration Actual mg/m^3	Dry Reference mg/Rm^3*	Dry Adjusted mg/Rm^3**	Wet Reference mg/Rm^3*	Particulate Emission Rate g/s
1	3.5	2.7	6.2	4.696	0.42	1.32	1.10	0.67	0.023
2	2.2	2.4	4.6	4.618	0.32	1.00	0.79	0.50	0.017
3	1.2	1.9	3.1	4.762	0.21	0.65	0.52	0.33	0.011
Average					0.32	0.99	0.80	0.50	0.017
Coefficient of Variation, %					33.8	33.8	35.5	34.0	33.8

* At 25 °C and 1 atmosphere

** At 25 °C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 6
Clean Harbors Sarnia
Acid Gas Emission Data

Hydrogen Chloride

Test No.	HCl Collected mg	Dry Volume Sampled Rm^3*	Actual mg/m^3	Hydrogen Chloride Concentration Dry Reference mg/Rm^3*	Dry Adjusted mg/Rm^3**	Wet Reference mg/Rm^3*	HCl Emission Rate g/s
1	1.62	0.1242	4.21	13.0	10.8	6.70	0.23
2	4.07	0.1266	10.3	32.1	25.6	16.4	0.56
3	5.17	0.1245	13.5	41.5	33.4	21.4	0.75
Average			9.35	28.9	23.3	14.8	0.51
Blank	<0.021						

Hydrogen Fluoride

Test No.	HF Collected mg	Dry Volume Sampled Rm^3*	Actual mg/m^3	Hydrogen Fluoride Concentration Dry Reference mg/Rm^3*	Dry Adjusted mg/Rm^3**	Wet Reference mg/Rm^3*	HF Emission Rate g/s
1	3.96	0.1242	10.3	31.9	26.5	16.4	0.56
2	5.68	0.1266	14.4	44.9	35.8	22.9	0.79
3	4.40	0.1245	11.5	35.3	28.4	18.2	0.64
Average			12.1	37.4	30.2	19.1	0.66
Blank	<0.0145						

* At 25 °C and 1 atmosphere

** At 25 °C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 7
Clean Harbors Sarnia
Combustion Gas Analyses

Average Combustion Gases - As Measured

Test No.	Carbon Dioxide %	Carbon Monoxide ppm	Nitrogen Oxides * ppm	Nitric Oxide ppm	Oxygen %	Sulfur Dioxide ppm	Total Hydrocarbons ** ppm
1	9.05	67.9	91.7	88.6	8.96	205	31.9
2	9.64	42.8	98.7	87.4	8.48	397	34.4
3	9.04	68.4	101.8	90.8	8.59	318	32.0
Average	9.24	59.7	97.4	88.9	8.68	307	32.8

Average Combustion Gases - Dry Basis Adjusted to 11% Oxygen

Test No.	Carbon Dioxide %	Carbon Monoxide ppm	Nitrogen Oxides * ppm	Nitric Oxide ppm	Oxygen %	Sulfur Dioxide ppm	Total Hydrocarbons ppm
1	7.50	56.3	76.0	73.5	-	170	51.6
2	7.68	34.1	78.7	69.7	-	316	53.9
3	7.27	55.0	81.9	73.0	-	256	50.1
Average	7.49	48.5	78.9	72.1	-	247	51.8

* Nitric oxide and nitrogen dioxide

** Wet basis as methane, one-minute average data

TABLE 8
Clean Harbors Sarnia
Combustion Gas Emission Data

Test No.	Combustion Gas	Dry Actual Concentration ppm	Dry Adjusted Concentration ppm	Dry Concentration by Weight Reference** mg/Rm^3	Dry Concentration by Weight Adjusted *** mg/Rm^3	Wet Concentration by Weight Actual mg/m^3	Wet Concentration by Weight Reference** mg/Rm^3	Emission Rate g/s
1	Carbon Dioxide	90500	75066	162756	135000	52510	83577	2846
	Carbon Monoxide	67.9	56.3	77.7	64.5	25.1	39.9	1.36
	Nitrogen Oxides ****	91.7	76.1	172	143	55.6	88.5	3.01
	Nitric Oxide	88.6	73.5	109	90.1	35.1	55.8	1.90
	Oxygen	89600	110000	117191	143873	37810	60179	2049
	Sulphur Dioxide	205	170	536	445	173	275	9.38
	Total Hydrocarbons	31.9 *	51.5	40.6	33.7	13.1	20.9	0.71
2	Carbon Dioxide	96400	76835	173367	138181	55568	88310	3037
	Carbon Monoxide	42.8	34.1	49.0	39.0	15.7	25.0	0.86
	Nitrogen Oxides ****	98.7	78.7	186	148	59.5	94.5	3.25
	Nitric Oxide	87.4	69.7	107	85.4	34.4	54.6	1.88
	Oxygen	84800	110000	110913	143873	35550	56497	1943
	Sulphur Dioxide	397	316	1039	828	333	529	18.2
	Total Hydrocarbons	34.4 *	53.8	44.2	35.2	14.2	22.5	0.77
3	Carbon Dioxide	90400	72717	162577	130775	53037	83652	2948
	Carbon Monoxide	68.4	55.0	78.3	63.0	25.5	40.3	1.42
	Nitrogen Oxides ****	102	81.9	191	154	62.4	98.5	3.47
	Nitric Oxide	90.8	73.0	111	89.6	36.3	57.3	2.02
	Oxygen	85900	110000	112352	143873	36652	57810	2038
	Sulphur Dioxide	318	256	832	669	271	428	15.1
	Total Hydrocarbons	32.0 *	50.0	40.7	32.7	13.3	20.9	0.74

* THC concentrations by volume (ppm) are provided on a wet basis

** At 25°C and 1 atmosphere

*** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

**** Nitric oxide and nitrogen dioxide as the equivalent amount of nitrogen dioxide

TABLE 9
Clean Harbors Sarnia
Summary of Combustion Gas Emission Data

Combustion Gas	Actual Concentration Test No. 1 mg/m³	Test No. 2 mg/m³	Test No. 3 mg/m³	Average mg/m³	Coefficient of Variation %
Carbon Dioxide	52510	55568	53037	53705	3.0
Carbon Monoxide	25.1	15.7	25.5	22.1	25.1
Nitrogen Oxides ***	55.6	59.5	62.4	59.2	5.8
Nitric Oxide	35.1	34.4	36.3	35.2	2.8
Oxygen	37810	35550	36652	36671	3.1
Sulphur Dioxide	173	333	271	259	31.1
Total Hydrocarbons	13.1	14.2	13.3	13.5	4.2

Combustion Gas	Dry Reference Concentration Test No. 1 mg/Rm³*	Test No. 2 mg/Rm³*	Test No. 3 mg/Rm³*	Average mg/Rm³*	Coefficient of Variation %
Carbon Dioxide	162756	173367	162577	166233	3.7
Carbon Monoxide	77.7	49.0	78.3	68.3	24.5
Nitrogen Oxides ***	172	186	191	183	5.3
Nitric Oxide	109	107	111	109	1.9
Oxygen	117191	110913	112352	113485	2.9
Sulphur Dioxide	536	1039	832	802	31
Total Hydrocarbons	40.6	44.2	40.7	41.8	4.9

Combustion Gas	Dry Adjusted Concentration Test No. 1 mg/Rm³**	Test No. 2 mg/Rm³**	Test No. 3 mg/Rm³**	Average mg/Rm³**	Coefficient of Variation %
Carbon Dioxide	135000	138181	130775	134652	2.8
Carbon Monoxide	64.5	39.0	63.0	55.5	25.7
Nitrogen Oxides ***	143	148	154	148	3.7
Nitric Oxide	90.1	85.4	89.6	88.4	2.9
Oxygen	143873	143873	143873	143873	-
Sulphur Dioxide	445	828	669	647	29.7
Total Hydrocarbons	33.7	35.2	32.7	33.9	3.7

Combustion Gas	Emission Rate Test No. 1 g/s	Test No. 2 g/s	Test No. 3 g/s	Average g/s	Coefficient of Variation %
Carbon Dioxide	2846	3037	2948	2944	3.2
Carbon Monoxide	1.36	0.86	1.42	1.21	25.4
Nitrogen Oxides ***	3.01	3.25	3.47	3.25	7.0
Nitric Oxide	1.90	1.88	2.02	1.93	4.0
Oxygen	2049	1943	2038	2010	2.9
Sulphur Dioxide	9.38	18.2	15.1	14.2	31.4
Total Hydrocarbons	0.71	0.77	0.74	0.74	4.3

* Dry at 25°C and 1 atmosphere.
** Dry at 25°C and 1 atmosphere, adjusted to 11% oxygen by volume.
*** Nitrogen oxides are expressed as the equivalent amount of nitrogen dioxide.

TABLE 10
Clean Harbors Sarnia
Metal Analyses, Test No. 1

Metal	Probe & Filter Nitric Acid Digest µg	Probe & Filter Hydrofluoric Acid Digest µg	Impingers & Rinses µg	Total Collected µg
Aluminum *	43.4	130	934	977
Antimony	<0.2	<0.2	0.14	0.14
Arsenic	<1	<1	0.77	0.77
Barium	16.4	33.3	2.18	51.9
Beryllium	<0.2	<0.2	<0.1	<0.20
Boron *	37.1	38.1	12300	12337
Cadmium	0.55	<0.1	0.47	1.02
Calcium *	<500	<500	499	499
Chromium	24.4	3.85	11.8	40.1
Cobalt	1.09	<0.2	0.45	1.54
Copper	5.87	1.77	37.3	44.9
Iron	336	<200	131	467
Lead	<0.5	<0.5	0.95	0.95
Lithium	<0.5	<0.5	0.65	0.65
Magnesium *	19.2	31.4	28.3	47.5
Manganese	28.6	3.09	9.46	41.2
Mercury **	0.11	<0.015	3.38	3.49
Molybdenum	3.64	18.0	1.08	22.7
Nickel	18.1	2.21	17.3	37.6
Phosphorus	<100	<100	<25	<100
Potassium	318	<100	123	441
Selenium	7.57	<2	117	125
Silicon *	2290	-	9790	12080
Silver	<0.2	<0.2	0.22	0.22
Sodium *	745	151	2660	3405
Strontium	0.53	0.61	0.88	2.03
Sulphur	<10000	<10000	1010000	1010000
Tin	14.7	2.09	25.5	42.3
Titanium	<10	<10	7.14	7.14
Vanadium	<1	<1	0.14	0.14
Zinc	41.0	31.3	25.9	98.2
Total				<1040876

* Hydrofluoric acid digest not included in the total.

** Includes the permanganate impingers

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit, "<MDL"). Where all values were reported below the detection limit for a given metal, the value of the detection limit for the fraction most likely to contain that metal was used to calculate emission data, the remaining fractions were assigned a value of zero. In instances where only one fraction was below the detection limit, that fraction was assigned a value of zero to calculate emission data.

TABLE 11
Clean Harbors Sarnia
Metal Analyses, Test No. 2

Metal	Probe & Filter Nitric Acid Digest µg	Probe & Filter Hydrofluoric Acid Digest µg	Impingers & Rinses µg	Total Collected µg
Aluminum *	26.8	132	1270	1297
Antimony	<0.2	<0.2	0.14	0.14
Arsenic	<1	<1	1.19	1.19
Barium	17.6	32.0	2.27	51.9
Beryllium	<0.2	<0.2	<0.1	<0.20
Boron *	<30	34.5	13600	13600
Cadmium	0.97	<0.1	0.36	1.33
Calcium *	<500	<500	644	644
Chromium	26.3	7.71	16.9	50.9
Cobalt	0.86	<0.2	0.40	1.26
Copper	4.68	1.13	11.6	17.4
Iron	386	<200	205	591
Lead	<0.5	<0.5	0.80	0.80
Lithium	0.72	<0.5	1.02	1.74
Magnesium *	14.2	32.6	65.8	80.0
Manganese	34.8	3.77	8.07	46.6
Mercury **	0.11	0.016	13.2	13.3
Molybdenum	5.09	18.1	2.17	25.4
Nickel	19.1	4.26	15.8	39.2
Phosphorus	<100	<100	<25	<100
Potassium	346	<100	124	470
Selenium	10.1	2.46	236	249
Silicon *	3050	-	19900	22950
Silver	<0.2	<0.2	0.29	0.29
Sodium *	658	131	3610	4268
Strontium	0.45	0.56	1.15	2.17
Sulphur	<10000	<10000	1850000	1850000
Tin	12.2	1.72	24.1	38.0
Titanium	<10	<10	10.7	10.7
Vanadium	<1	<1	0.22	0.22
Zinc	23.3	29.2	14.6	67.1
Total				<1894618

* Hydrofluoric acid digest not included in the total.

** Includes the permanganate impingers

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit, "<MDL"). Where all values were reported below the detection limit for a given metal, the value of the detection limit for the fraction most likely to contain that metal was used to calculate emission data, the remaining fractions were assigned a value of zero. In instances where only one fraction was below the detection limit, that fraction was assigned a value of zero to calculate emission data.

TABLE 12
Clean Harbors Sarnia
Metal Analyses, Test No. 3

Metal	Probe & Filter Nitric Acid Digest µg	Probe & Filter Hydrofluoric Acid Digest µg	Impingers & Rinses µg	Total Collected µg
Aluminum *	20.8	139	1140	1161
Antimony	<0.2	<0.2	0.16	0.16
Arsenic	<1	<1	0.80	0.80
Barium	14.0	34.3	3.42	51.7
Beryllium	<0.2	<0.2	<0.1	<0.20
Boron *	<30	36.3	12000	12000
Cadmium	0.49	<0.1	0.63	1.12
Calcium *	<500	<500	594	594
Chromium	9.56	3.48	17.6	30.6
Cobalt	0.43	<0.2	0.29	0.72
Copper	2.22	<1	17.1	19.3
Iron	<200	<200	184	184
Lead	<0.5	<0.5	0.80	0.80
Lithium	<0.5	<0.5	0.71	0.71
Magnesium *	12.0	31.1	69.6	81.6
Manganese	27.2	4.17	26.4	57.8
Mercury **	0.080	0.020	6.85	6.95
Molybdenum	1.55	18.0	2.39	21.9
Nickel	7.08	1.73	13.2	22.0
Phosphorus	<100	<100	<25	<100
Potassium	299	<100	129	428
Selenium	5.44	2.56	135	143
Silicon *	808	-	13700	14508
Silver	<0.2	<0.2	0.19	0.19
Sodium *	513	130	3250	3763
Strontium	0.34	0.60	1.10	2.04
Sulphur	<10000	<10000	1920000	1920000
Tin	14.9	2.80	27.2	44.9
Titanium	<10	<10	9.71	9.71
Vanadium	<1	<1	0.28	0.28
Zinc	16.3	30.1	17.7	64.1
Total				<1953298

* Hydrofluoric acid digest not included in the total.

** Includes the permanganate impingers

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit, "<MDL"). Where all values were reported below the detection limit for a given metal, the value of the detection limit for the fraction most likely to contain that metal was used to calculate emission data, the remaining fractions were assigned a value of zero. In instances where only one fraction was below the detection limit, that fraction was assigned a value of zero to calculate emission data.

TABLE 13
Clean Harbors Sarnia
Metal Emission Data, Test No. 1

Metal	Total Collected µg	Actual Concentration µg/m³	Dry Reference Concentration µg/Rm³*	Dry Adjusted Concentration µg/Rm³**	Wet Reference Concentration µg/Rm³*	Emission Rate mg/s
Aluminum	977	66.7	208	173	106	3.64
Antimony	0.14	0.0096	0.030	0.025	0.015	0.00052
Arsenic	0.77	0.052	0.16	0.14	0.083	0.0029
Barium	51.9	3.54	11.0	9.16	5.64	0.19
Beryllium	<0.20	<0.014	<0.043	<0.035	<0.022	<0.00075
Boron	12337	842	2627	2179	1340	46.0
Cadmium	1.02	0.070	0.22	0.18	0.11	0.0038
Calcium	499	34.1	106	88.1	54.2	1.86
Chromium	40.1	2.73	8.53	7.07	4.35	0.15
Cobalt	1.54	0.10	0.33	0.27	0.17	0.0057
Copper	44.9	3.07	9.57	7.94	4.88	0.17
Iron	467	31.9	99.4	82.5	50.7	1.74
Lead	0.95	0.065	0.20	0.17	0.10	0.0035
Lithium	0.65	0.045	0.14	0.12	0.071	0.0024
Magnesium	47.5	3.24	10.1	8.39	5.16	0.18
Manganese	41.2	2.81	8.76	7.27	4.47	0.15
Mercury	3.49	0.24	0.74	0.62	0.38	0.013
Molybdenum	22.7	1.55	4.84	4.01	2.47	0.085
Nickel	37.6	2.57	8.01	6.64	4.09	0.14
Phosphorus	<100	<6.83	<21.3	<17.7	<10.9	<0.37
Potassium	441	30.1	93.9	77.9	47.9	1.64
Selenium	125	8.50	26.5	22.0	13.5	0.46
Silicon	12080	824	2572	2134	1312	45.0
Silver	0.22	0.015	0.048	0.040	0.024	0.00083
Sodium	3405	232	725	601	370	12.7
Strontium	2.03	0.14	0.43	0.36	0.22	0.0076
Sulphur	1010000	68935	215077	178381	109733	3764
Tin	42.3	2.89	9.01	7.47	4.59	0.16
Titanium	7.14	0.49	1.52	1.26	0.78	0.027
Vanadium	0.14	0.0094	0.029	0.024	0.015	0.00051
Zinc	98.2	6.70	20.9	17.3	10.7	0.37
Total	<1040876	<71042	<221652	<183834	<113088	<3879

Dry Gas Volume Sampled (Rm³*) :	4.696
Actual Flowrate (m³/s) :	54.6
Dry Reference Flowrate (Rm³/s*) :	17.5
Dry Adjusted Flowrate (Rm³/s**) :	21.1
Wet Reference Flowrate (Rm³/s*) :	34.3

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 14
Clean Harbors Sarnia
Metal Emission Data, Test No. 2

Metal	Total Collected µg	Actual Concentration µg/m³	Dry Reference Concentration µg/Rm³*	Dry Adjusted Concentration µg/Rm³**	Wet Reference Concentration µg/Rm³*	Emission Rate mg/s
Aluminum	1297	89.4	281	224	142	4.80
Antimony	0.14	0.0093	0.029	0.023	0.015	0.00050
Arsenic	1.19	0.082	0.26	0.21	0.13	0.0044
Barium	51.9	3.58	11.2	8.98	5.70	0.19
Beryllium	<0.20	<0.014	<0.043	<0.035	<0.022	<0.00074
Boron	13600	938	2945	2353	1494	50.4
Cadmium	1.33	0.092	0.29	0.23	0.15	0.0049
Calcium	644	44.4	139	111	70.8	2.38
Chromium	50.9	3.51	11.0	8.81	5.59	0.19
Cobalt	1.26	0.087	0.27	0.22	0.14	0.0047
Copper	17.4	1.20	3.77	3.01	1.91	0.064
Iron	591	40.8	128	102	64.9	2.19
Lead	0.80	0.055	0.17	0.14	0.088	0.0030
Lithium	1.74	0.12	0.38	0.30	0.19	0.0064
Magnesium	80.0	5.52	17.3	13.8	8.79	0.30
Manganese	46.6	3.22	10.1	8.07	5.12	0.17
Mercury	13.3	0.92	2.88	2.30	1.46	0.049
Molybdenum	25.4	1.75	5.49	4.39	2.79	0.094
Nickel	39.2	2.70	8.48	6.78	4.30	0.15
Phosphorus	<100	<6.90	<21.7	<17.3	<11.0	<0.37
Potassium	470	32.4	102	81.3	51.6	1.74
Selenium	249	17.1	53.8	43.0	27.3	0.92
Silicon	22950	1583	4970	3971	2522	85.0
Silver	0.29	0.020	0.063	0.050	0.032	0.0011
Sodium	4268	294	924	739	469	15.8
Strontium	2.17	0.15	0.47	0.37	0.24	0.0080
Sulphur	1850000	127567	400606	320111	203275	6850
Tin	38.0	2.62	8.23	6.58	4.18	0.14
Titanium	10.7	0.74	2.32	1.85	1.18	0.040
Vanadium	0.22	0.015	0.047	0.037	0.024	0.00080
Zinc	67.1	4.63	14.5	11.6	7.37	0.25
Total	<1894618	<130644	<410268	<327831	<208178	<7016

Dry Gas Volume Sampled (Rm³*) :	4.618
Actual Flowrate (m³/s) :	53.7
Dry Reference Flowrate (Rm³/s*) :	17.1
Dry Adjusted Flowrate (Rm³/s**) :	21.4
Wet Reference Flowrate (Rm³/s*) :	33.7

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 15
Clean Harbors Sarnia
Metal Emission Data, Test No. 3

Metal	Total Collected µg	Actual Concentration µg/m³	Dry Reference Concentration µg/Rm³*	Dry Adjusted Concentration µg/Rm³**	Wet Reference Concentration µg/Rm³*	Emission Rate mg/s
Aluminum	1161	78.7	244	196	124	4.31
Antimony	0.16	0.011	0.034	0.027	0.017	0.00060
Arsenic	0.80	0.054	0.17	0.13	0.085	0.0030
Barium	51.7	3.51	10.9	8.74	5.54	0.19
Beryllium	<0.20	<0.014	<0.042	<0.034	<0.021	<0.00074
Boron	12000	814	2520	2027	1285	44.6
Cadmium	1.12	0.076	0.23	0.19	0.12	0.0042
Calcium	594	40.3	125	100	63.6	2.21
Chromium	30.6	2.08	6.43	5.18	3.28	0.11
Cobalt	0.72	0.049	0.15	0.12	0.077	0.0027
Copper	19.3	1.31	4.06	3.26	2.07	0.072
Iron	184	12.5	38.6	31.1	19.7	0.68
Lead	0.80	0.054	0.17	0.14	0.086	0.0030
Lithium	0.71	0.048	0.15	0.12	0.076	0.0027
Magnesium	81.6	5.53	17.1	13.8	8.74	0.30
Manganese	57.8	3.92	12.1	9.76	6.19	0.21
Mercury	6.95	0.47	1.46	1.17	0.74	0.026
Molybdenum	21.9	1.49	4.61	3.71	2.35	0.082
Nickel	22.0	1.49	4.62	3.72	2.36	0.082
Phosphorus	<100	<6.78	<21.0	<16.9	<10.7	<0.37
Potassium	428	29.0	89.9	72.3	45.8	1.59
Selenium	143	9.70	30.0	24.2	15.3	0.53
Silicon	14508	984	3047	2451	1554	53.9
Silver	0.19	0.013	0.039	0.031	0.020	0.00069
Sodium	3763	255	790	636	403	14.0
Strontium	2.04	0.14	0.43	0.34	0.22	0.0076
Sulphur	1920000	130228	403192	324386	205663	7136
Tin	44.9	3.05	9.43	7.59	4.81	0.17
Titanium	9.71	0.66	2.04	1.64	1.04	0.036
Vanadium	0.28	0.019	0.059	0.047	0.030	0.0010
Zinc	64.1	4.35	13.5	10.8	6.87	0.24
Total	<1953298	<132487	<410184	<330012	<209230	<7260

Dry Gas Volume Sampled (Rm³*) :	4.762
Actual Flowrate (m³/s) :	54.8
Dry Reference Flowrate (Rm³/s*) :	17.7
Dry Adjusted Flowrate (Rm³/s**) :	22.0
Wet Reference Flowrate (Rm³/s*) :	34.7

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 16
Clean Harbors Sarnia
Summary of Metal Actual Concentrations

Metal	Actual Concentration				Coefficient
	Test No. 1	Test No. 2	Test No. 3	Average	of Variation
	μg/m³	μg/m³	μg/m³	μg/m³	%
Aluminum	66.7	89.4	78.7	78.3	14.5
Antimony	0.0096	0.0093	0.011	0.010	9.1
Arsenic	0.052	0.082	0.054	0.063	26.5
Barium	3.54	3.58	3.51	3.54	1.0
Beryllium	<0.014	<0.014	<0.014	<0.014	0.8
Boron	842	938	814	865	7.5
Cadmium	0.070	0.092	0.076	0.079	14.2
Calcium	34.1	44.4	40.3	39.6	13.2
Chromium	2.73	3.51	2.08	2.77	25.8
Cobalt	0.10	0.087	0.049	0.080	35.5
Copper	3.07	1.20	1.31	1.86	56.3
Iron	31.9	40.8	12.5	28.4	51.0
Lead	0.065	0.055	0.054	0.058	9.9
Lithium	0.045	0.12	0.048	0.071	59.7
Magnesium	3.24	5.52	5.53	4.76	27.7
Manganese	2.81	3.22	3.92	3.31	16.9
Mercury	0.24	0.92	0.47	0.54	63.6
Molybdenum	1.55	1.75	1.49	1.60	8.5
Nickel	2.57	2.70	1.49	2.25	29.4
Phosphorus	<6.83	<6.90	<6.78	<6.83	0.8
Potassium	30.1	32.4	29.0	30.5	5.7
Selenium	8.50	17.1	9.70	11.8	39.7
Silicon	824	1583	984	1130	35.4
Silver	0.015	0.020	0.013	0.016	23.6
Sodium	232	294	255	261	12.0
Strontium	0.14	0.15	0.14	0.14	4.6
Sulphur	68935	127567	130228	108910	31.8
Tin	2.89	2.62	3.05	2.85	7.5
Titanium	0.49	0.74	0.66	0.63	20.4
Vanadium	0.0094	0.015	0.019	0.014	33.8
Zinc	6.70	4.63	4.35	5.23	24.6
Total	<71042	<130644	<132487	<111391	31.4

TABLE 17
Clean Harbors Sarnia
Summary of Metal Dry Reference Concentrations

Metal	Dry Reference Concentration				Coefficient
	Test No. 1	Test No. 2	Test No. 3	Average	of Variation
	µg/Rm³*	µg/Rm³*	µg/Rm³*	µg/Rm³*	%
Aluminum	208	281	244	244	14.9
Antimony	0.030	0.029	0.034	0.031	8.4
Arsenic	0.16	0.26	0.17	0.20	27.2
Barium	11.0	11.2	10.9	11.0	1.7
Beryllium	<0.043	<0.043	<0.042	<0.043	1.5
Boron	2627	2945	2520	2697	8.2
Cadmium	0.22	0.29	0.23	0.25	14.7
Calcium	106	139	125	123	13.5
Chromium	8.53	11.0	6.43	8.66	26.5
Cobalt	0.33	0.27	0.15	0.25	35.9
Copper	9.57	3.77	4.06	5.80	56.4
Iron	99.4	128	38.6	88.7	51.5
Lead	0.20	0.17	0.17	0.18	10.0
Lithium	0.14	0.38	0.15	0.22	60.4
Magnesium	10.1	17.3	17.1	14.9	27.7
Manganese	8.76	10.1	12.1	10.3	16.4
Mercury	0.74	2.88	1.46	1.69	64.1
Molybdenum	4.84	5.49	4.61	4.98	9.2
Nickel	8.01	8.48	4.62	7.04	29.9
Phosphorus	<21.3	<21.7	<21.0	<21.3	1.5
Potassium	93.9	102	89.9	95.2	6.4
Selenium	26.5	53.8	30.0	36.8	40.4
Silicon	2572	4970	3047	3530	36.0
Silver	0.048	0.063	0.039	0.050	24.3
Sodium	725	924	790	813	12.5
Strontium	0.43	0.47	0.43	0.44	5.2
Sulphur	215077	400606	403192	339625	31.8
Tin	9.01	8.23	9.43	8.89	6.8
Titanium	1.52	2.32	2.04	1.96	20.6
Vanadium	0.029	0.047	0.059	0.045	33.4
Zinc	20.9	14.5	13.5	16.3	24.7
Total	<221652	<410268	<410184	<347368	31.3

* At 25°C and 1 atmosphere

TABLE 18
Clean Harbors Sarnia
Summary of Metal Dry Adjusted Concentrations

Metal	Dry Adjusted Concentration				Coefficient
	Test No. 1	Test No. 2	Test No. 3	Average	of Variation
	µg/Rm³*	µg/Rm³*	µg/Rm³*	µg/Rm³*	%
Aluminum	173	224	196	198	13.1
Antimony	0.025	0.023	0.027	0.025	8.1
Arsenic	0.14	0.21	0.13	0.16	25.7
Barium	9.16	8.98	8.74	8.96	2.4
Beryllium	<0.035	<0.035	<0.034	<0.035	2.2
Boron	2179	2353	2027	2187	7.5
Cadmium	0.18	0.23	0.19	0.20	13.1
Calcium	88.1	111	100	100	11.7
Chromium	7.07	8.81	5.18	7.02	25.9
Cobalt	0.27	0.22	0.12	0.20	37.1
Copper	7.94	3.01	3.26	4.74	58.5
Iron	82.5	102	31.1	71.9	51.1
Lead	0.17	0.14	0.14	0.15	12.0
Lithium	0.12	0.30	0.12	0.18	59.0
Magnesium	8.39	13.8	13.8	12.0	26.1
Manganese	7.27	8.07	9.76	8.37	15.2
Mercury	0.62	2.30	1.17	1.36	62.9
Molybdenum	4.01	4.39	3.71	4.04	8.5
Nickel	6.64	6.78	3.72	5.71	30.2
Phosphorus	<17.7	<17.3	<16.9	<17.3	2.2
Potassium	77.9	81.3	72.3	77.2	5.9
Selenium	22.0	43.0	24.2	29.7	38.9
Silicon	2134	3971	2451	2852	34.4
Silver	0.040	0.050	0.031	0.040	23.5
Sodium	601	739	636	659	10.8
Strontium	0.36	0.37	0.34	0.36	4.3
Sulphur	178381	320111	324386	274293	30.3
Tin	7.47	6.58	7.59	7.21	7.6
Titanium	1.26	1.85	1.64	1.58	18.9
Vanadium	0.024	0.037	0.047	0.036	32.1
Zinc	17.3	11.6	10.8	13.3	26.8
Total	<183834	<327831	<330012	<280559	29.9

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 19
Clean Harbors Sarnia
Summary of Metal Wet Reference Concentrations

Metal	Wet Reference Concentration Test No. 1 µg/Rm³*	Test No. 2 µg/Rm³*	Test No. 3 µg/Rm³*	Average µg/Rm³*	Coefficient of Variation %
Aluminum	106	142	124	124	14.6
Antimony	0.015	0.015	0.017	0.016	8.6
Arsenic	0.083	0.13	0.085	0.10	26.8
Barium	5.64	5.70	5.54	5.63	1.4
Beryllium	<0.022	<0.022	<0.021	<0.022	1.3
Boron	1340	1494	1285	1373	7.9
Cadmium	0.11	0.15	0.12	0.13	14.4
Calcium	54.2	70.8	63.6	62.9	13.2
Chromium	4.35	5.59	3.28	4.41	26.2
Cobalt	0.17	0.14	0.077	0.13	35.9
Copper	4.88	1.91	2.07	2.96	56.6
Iron	50.7	64.9	19.7	45.1	51.3
Lead	0.10	0.088	0.086	0.092	10.2
Lithium	0.071	0.19	0.076	0.11	60.0
Magnesium	5.16	8.79	8.74	7.56	27.5
Manganese	4.47	5.12	6.19	5.26	16.5
Mercury	0.38	1.46	0.74	0.86	63.8
Molybdenum	2.47	2.79	2.35	2.54	8.9
Nickel	4.09	4.30	2.36	3.58	29.8
Phosphorus	<10.9	<11.0	<10.7	<10.9	1.3
Potassium	47.9	51.6	45.8	48.5	6.1
Selenium	13.5	27.3	15.3	18.7	40.0
Silicon	1312	2522	1554	1796	35.6
Silver	0.024	0.032	0.020	0.025	24.0
Sodium	370	469	403	414	12.2
Strontium	0.22	0.24	0.22	0.23	4.9
Sulphur	109733	203275	205663	172890	31.6
Tin	4.59	4.18	4.81	4.53	7.1
Titanium	0.78	1.18	1.04	1.00	20.4
Vanadium	0.015	0.024	0.030	0.023	33.4
Zinc	10.7	7.37	6.87	8.30	24.9
Total	<113088	<208178	<209230	<176832	31.2

* At 25°C and 1 atmosphere

TABLE 20
Clean Harbors Sarnia
Summary of Metal Emission Rates

Metal	Emission Rate Test No. 1 mg/s	Test No. 2 mg/s	Test No. 3 mg/s	Average mg/s	Coefficient of Variation %
Aluminum	3.64	4.80	4.31	4.25	13.7
Antimony	0.00052	0.00050	0.00060	0.00054	9.9
Arsenic	0.0029	0.0044	0.0030	0.0034	25.3
Barium	0.19	0.19	0.19	0.19	0.4
Beryllium	<0.00075	<0.00074	<0.00074	<0.00074	0.3
Boron	46.0	50.4	44.6	47.0	6.4
Cadmium	0.0038	0.0049	0.0042	0.0043	13.2
Calcium	1.86	2.38	2.21	2.15	12.4
Chromium	0.15	0.19	0.11	0.15	24.8
Cobalt	0.0057	0.0047	0.0027	0.0044	35.4
Copper	0.17	0.064	0.072	0.10	56.8
Iron	1.74	2.19	0.68	1.54	50.2
Lead	0.0035	0.0030	0.0030	0.0032	10.3
Lithium	0.0024	0.0064	0.0027	0.0038	58.5
Magnesium	0.18	0.30	0.30	0.26	27.4
Manganese	0.15	0.17	0.21	0.18	17.4
Mercury	0.013	0.049	0.026	0.029	62.5
Molybdenum	0.085	0.094	0.082	0.087	7.4
Nickel	0.14	0.15	0.082	0.12	28.8
Phosphorus	<0.37	<0.37	<0.37	<0.37	0.3
Potassium	1.64	1.74	1.59	1.66	4.6
Selenium	0.46	0.92	0.53	0.64	38.6
Silicon	45.0	85.0	53.9	61.3	34.2
Silver	0.00083	0.0011	0.00069	0.00087	22.5
Sodium	12.7	15.8	14.0	14.2	11.1
Strontium	0.0076	0.0080	0.0076	0.0077	3.5
Sulphur	3764	6850	7136	5917	31.6
Tin	0.16	0.14	0.17	0.16	8.5
Titanium	0.027	0.040	0.036	0.034	19.7
Vanadium	0.00051	0.00080	0.0010	0.00078	34.1
Zinc	0.37	0.25	0.24	0.28	25.0
Total	<3879	<7016	<7260	<6052	31.2

TABLE 21
Clean Harbors Sarnia
Summary of Metal Emission Data

Metal	Actual Concentration µg/m³	Dry Reference Concentration µg/Rm³*	Dry Adjusted Concentration µg/Rm³**	Wet Reference Concentration µg/Rm³*	Emission Rate mg/s
Aluminum	78.3	244	198	124	4.25
Antimony	0.010	0.031	0.025	0.016	0.00054
Arsenic	0.063	0.20	0.16	0.10	0.0034
Barium	3.54	11.0	8.96	5.63	0.19
Beryllium	<0.014	<0.043	<0.035	<0.022	<0.00074
Boron	865	2697	2187	1373	47.0
Cadmium	0.079	0.25	0.20	0.13	0.0043
Calcium	39.6	123	100	62.9	2.15
Chromium	2.77	8.66	7.02	4.41	0.15
Cobalt	0.080	0.25	0.20	0.13	0.0044
Copper	1.86	5.80	4.74	2.96	0.10
Iron	28.4	88.7	71.9	45.1	1.54
Lead	0.058	0.18	0.15	0.092	0.0032
Lithium	0.071	0.22	0.18	0.11	0.0038
Magnesium	4.76	14.9	12.0	7.56	0.26
Manganese	3.31	10.3	8.37	5.26	0.18
Mercury	0.54	1.69	1.36	0.86	0.029
Molybdenum	1.60	4.98	4.04	2.54	0.087
Nickel	2.25	7.04	5.71	3.58	0.12
Phosphorus	<6.83	<21.3	<17.3	<10.9	<0.37
Potassium	30.5	95.2	77.2	48.5	1.66
Selenium	11.8	36.8	29.7	18.7	0.64
Silicon	1130	3530	2852	1796	61.3
Silver	0.016	0.050	0.040	0.025	0.00087
Sodium	261	813	659	414	14.2
Strontium	0.14	0.44	0.36	0.23	0.0077
Sulphur	108910	339625	274293	172890	5917
Tin	2.85	8.89	7.21	4.53	0.16
Titanium	0.63	1.96	1.58	1.00	0.034
Vanadium	0.014	0.045	0.036	0.023	0.00078
Zinc	5.23	16.3	13.3	8.30	0.28
Total	<111391	<347368	<280559	<176832	<6052

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 22
Clean Harbors Sarnia
Blank Train Metal Analyses

Metal	Probe & Filter Nitric Acid Digest µg	Probe & Filter Hydrofluoric Acid Digest µg	Impingers & Rinses µg	Total Collected µg
Aluminum *	<20	135	9.07	9.07
Antimony	<0.2	<0.2	<0.1	<0.20
Arsenic	<1	<1	<0.2	<0.20
Barium	11.7	36.4	1.04	49.1
Beryllium	<0.2	<0.2	<0.1	<0.20
Boron *	<30	31.5	<1000	<1000
Cadmium	<0.1	<0.1	<0.05	<0.10
Calcium *	<500	<500	160	160
Chromium	<1	2.09	0.46	2.55
Cobalt	<0.2	<0.2	<0.1	<0.20
Copper	2.77	1.23	5.00	9.00
Iron	<200	<200	<15	<15.0
Lead	<0.5	<0.5	0.19	0.19
Lithium	<0.5	<0.5	<0.25	<0.50
Magnesium *	11.7	35.0	13.5	25.2
Manganese	<0.5	0.95	0.53	1.48
Mercury **	<0.015	<0.015	<0.25	<0.25
Molybdenum	0.20	17.9	<0.1	18.1
Nickel	0.37	0.78	0.31	1.46
Phosphorus	<100	<100	<25	<100
Potassium	<100	<100	<100	<100
Selenium	<2	<2	<1	<1.00
Silicon *	792	-	121	913
Silver	<0.2	<0.2	<0.1	<0.20
Sodium *	397	132	340	737
Strontium	0.23	0.65	0.21	1.08
Sulphur	<10000	<10000	<300000	<300000
Tin	8.79	2.44	19.8	31.0
Titanium	<10	<10	<1	<10.0
Vanadium	<1	<1	<0.1	<1.00
Zinc	<6	30.7	<3	30.7
Total				<303218

* Hydrofluoric acid digest not included in the total.

** Includes the permanganate impingers.

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit). Where all values are reported below the detection limit for a given metal, the value of the detection limit for the fraction most likely to contain that metal was used to calculate the total collected in the blank, the remaining fractions are assigned a value of zero. In instances where only one fraction was below the detection limit, that fraction was assigned a value of zero to calculate the total collected in the blank.

TABLE 23
Clean Harbors Sarnia
Dioxin and Furan Congener Group Emission Data
Test No. 1

Dioxins

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	145	0.010	0.031	0.026	0.016	0.54
Pentachlorodibenzo-p-dioxins	195	0.013	0.041	0.034	0.021	0.73
Hexachlorodibenzo-p-dioxins	169	0.012	0.036	0.030	0.019	0.63
Heptachlorodibenzo-p-dioxins	312	0.022	0.066	0.055	0.034	1.16
Octachlorodibenzo-p-dioxin	103	0.0071	0.022	0.018	0.011	0.38
Total	924	0.064	0.20	0.16	0.10	3.44

Furans

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	338	0.023	0.072	0.060	0.037	1.26
Pentachlorodibenzofurans	325	0.022	0.069	0.057	0.036	1.21
Hexachlorodibenzofurans	350	0.024	0.074	0.062	0.039	1.30
Heptachlorodibenzofurans	102	0.0071	0.022	0.018	0.011	0.38
Octachlorodibenzofuran	17.5	0.0012	0.0037	0.0031	0.0019	0.065
Total	1133	0.078	0.24	0.20	0.12	4.21

Dry Gas Volume Sampled (Rm³*) :	4.706
Actual Flowrate (m³/s) :	53.8
Dry Reference Flowrate (Rm³/s*) :	17.5
Dry Adjusted Flowrate (Rm³/s**) :	21.1
Wet Reference Flowrate (Rm³/s*) :	33.8

* At 25°C and 1 atmosphere
** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 24
Clean Harbors Sarnia
Dioxin and Furan Congener Group Emission Data
Test No. 2

Dioxins

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	218	0.014	0.044	0.035	0.022	0.79
Pentachlorodibenzo-p-dioxins	401	0.026	0.081	0.064	0.041	1.45
Hexachlorodibenzo-p-dioxins	620	0.040	0.124	0.099	0.064	2.24
Heptachlorodibenzo-p-dioxins	454	0.030	0.091	0.073	0.047	1.64
Octachlorodibenzo-p-dioxin	124	0.0081	0.025	0.020	0.013	0.45
Total	1817	0.12	0.36	0.29	0.19	6.57

Furans

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	382	0.025	0.077	0.061	0.039	1.38
Pentachlorodibenzofurans	796	0.052	0.160	0.127	0.082	2.88
Hexachlorodibenzofurans	401	0.026	0.081	0.064	0.041	1.45
Heptachlorodibenzofurans	205	0.013	0.041	0.033	0.021	0.74
Octachlorodibenzofuran	13.3	0.00086	0.0027	0.0021	0.0014	0.048
Total	1797	0.12	0.36	0.29	0.19	6.49

Dry Gas Volume Sampled (Rm³*) :	4.981
Actual Flowrate (m³/s) :	55.6
Dry Reference Flowrate (Rm³/s*) :	18.0
Dry Adjusted Flowrate (Rm³/s**) :	22.6
Wet Reference Flowrate (Rm³/s*) :	35.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 25
Clean Harbors Sarnia
Dioxin and Furan Congener Group Emission Data
Test No. 3

Dioxins

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	150	0.0097	0.030	0.024	0.015	0.55
Pentachlorodibenzo-p-dioxins	282	0.018	0.056	0.045	0.029	1.03
Hexachlorodibenzo-p-dioxins	480	0.031	0.095	0.076	0.049	1.76
Heptachlorodibenzo-p-dioxins	322	0.021	0.063	0.051	0.033	1.18
Octachlorodibenzo-p-dioxin	83.2	0.0054	0.016	0.013	0.0085	0.30
Total	1317	0.086	0.26	0.21	0.13	4.82

Furans

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	487	0.032	0.096	0.077	0.050	1.78
Pentachlorodibenzofurans	609	0.040	0.12	0.097	0.062	2.23
Hexachlorodibenzofurans	352	0.023	0.069	0.056	0.036	1.29
Heptachlorodibenzofurans	99.3	0.0064	0.020	0.016	0.010	0.36
Octachlorodibenzofuran	<10	<0.00065	<0.0020	<0.0016	<0.0010	<0.037
Total	<1557	<0.10	<0.31	<0.25	<0.16	<5.70

Dry Gas Volume Sampled (Rm³*) :	5.079
Actual Flowrate (m³/s) :	56.4
Dry Reference Flowrate (Rm³/s*) :	18.6
Dry Adjusted Flowrate (Rm³/s**) :	23.1
Wet Reference Flowrate (Rm³/s*) :	35.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the amount detected is less than the analytical detection limit (<MDL). In these cases the value of the detection limit was used to calculate the emission data.

TABLE 26
Clean Harbors Sarnia
Dioxin and Furan Congener Group Actual Concentrations

Dioxins

Congener Group	Actual Concentration Test No. 1 ng/m³	Test No. 2 ng/m³	Test No. 3 ng/m³	Average ng/m³	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.010	0.014	0.0097	0.011	21.9
Pentachlorodibenzo-p-dioxins	0.013	0.026	0.018	0.019	32.9
Hexachlorodibenzo-p-dioxins	0.012	0.040	0.031	0.028	52.7
Heptachlorodibenzo-p-dioxins	0.022	0.030	0.021	0.024	19.9
Octachlorodibenzo-p-dioxin	0.0071	0.0081	0.0054	0.0069	19.6
Total	0.064	0.12	0.086	0.089	30.6

Furans

Congener Group	Actual Concentration Test No. 1 ng/m³	Test No. 2 ng/m³	Test No. 3 ng/m³	Average ng/m³	Coefficient of Variation %
Tetrachlorodibenzofurans	0.023	0.025	0.032	0.027	16.6
Pentachlorodibenzofurans	0.022	0.052	0.040	0.038	38.8
Hexachlorodibenzofurans	0.024	0.026	0.023	0.024	6.6
Heptachlorodibenzofurans	0.0071	0.013	0.0064	0.0089	42.6
Octachlorodibenzofuran	0.0012	0.00086	<0.00065	<0.00091	31.1
Total	0.078	0.12	<0.10	<0.099	19.6

TABLE 27
Clean Harbors Sarnia
Dioxin and Furan Congener Group Dry Reference Concentrations

Dioxins

Congener Group	Dry Reference Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.031	0.044	0.030	0.035	22.7
Pentachlorodibenzo-p-dioxins	0.041	0.081	0.056	0.059	33.4
Hexachlorodibenzo-p-dioxins	0.036	0.12	0.095	0.085	53.0
Heptachlorodibenzo-p-dioxins	0.066	0.091	0.063	0.074	20.7
Octachlorodibenzo-p-dioxin	0.022	0.025	0.016	0.021	20.5
Total	0.20	0.36	0.26	0.27	31.1

Furans

Congener Group	Dry Reference Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	0.072	0.077	0.096	0.081	15.6
Pentachlorodibenzofurans	0.069	0.16	0.12	0.12	39.1
Hexachlorodibenzofurans	0.074	0.081	0.069	0.075	7.5
Heptachlorodibenzofurans	0.022	0.041	0.020	0.027	43.4
Octachlorodibenzofuran	0.0037	0.0027	<0.0020	<0.0028	31.6
Total	0.24	0.36	<0.31	<0.30	19.9

* At 25°C and 1 atmosphere

TABLE 28
Clean Harbors Sarnia
Dioxin and Furan Congener Group Dry Adjusted Concentrations

Dioxins

Congener Group	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.026	0.035	0.024	0.028	21.2
Pentachlorodibenzo-p-dioxins	0.034	0.064	0.045	0.048	31.6
Hexachlorodibenzo-p-dioxins	0.030	0.099	0.076	0.068	51.7
Heptachlorodibenzo-p-dioxins	0.055	0.073	0.051	0.060	19.3
Octachlorodibenzo-p-dioxin	0.018	0.020	0.013	0.017	20.2
Total	0.16	0.29	0.21	0.22	29.3

Furans

Congener Group	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	0.060	0.061	0.077	0.066	14.8
Pentachlorodibenzofurans	0.057	0.13	0.097	0.094	37.4
Hexachlorodibenzofurans	0.062	0.064	0.056	0.061	7.1
Heptachlorodibenzofurans	0.018	0.033	0.016	0.022	41.8
Octachlorodibenzofuran	0.0031	0.0021	<0.0016	<0.0023	33.5
Total	0.20	0.29	<0.25	<0.24	18.0

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 29
Clean Harbors Sarnia
Dioxin and Furan Congener Group Wet Reference Concentrations

Dioxins

Congener Group	Wet Reference Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.016	0.022	0.015	0.018	22.0
Pentachlorodibenzo-p-dioxins	0.021	0.041	0.029	0.031	32.8
Hexachlorodibenzo-p-dioxins	0.019	0.064	0.049	0.044	52.6
Heptachlorodibenzo-p-dioxins	0.034	0.047	0.033	0.038	20.0
Octachlorodibenzo-p-dioxin	0.011	0.013	0.0085	0.011	19.9
Total	0.10	0.19	0.13	0.14	30.5

Furans

Congener Group	Wet Reference Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Tetrachlorodibenzofurans	0.037	0.039	0.050	0.042	16.1
Pentachlorodibenzofurans	0.036	0.082	0.062	0.060	38.6
Hexachlorodibenzofurans	0.039	0.041	0.036	0.039	6.8
Heptachlorodibenzofurans	0.011	0.021	0.010	0.014	42.6
Octachlorodibenzofuran	0.0019	0.0014	<0.0010	<0.0014	31.6
Total	0.12	0.19	<0.16	<0.16	19.4

* At 25°C and 1 atmosphere

TABLE 30
Clean Harbors Sarnia
Dioxin and Furan Congener Group Emission Rates

Dioxins

Congener Group	Emission Rate Test No. 1 ng/s	Test No. 2 ng/s	Test No. 3 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzo-p-dioxins	0.54	0.79	0.55	0.63	22.5
Pentachlorodibenzo-p-dioxins	0.73	1.45	1.03	1.07	34.0
Hexachlorodibenzo-p-dioxins	0.63	2.24	1.76	1.54	53.6
Heptachlorodibenzo-p-dioxins	1.16	1.64	1.18	1.33	20.5
Octachlorodibenzo-p-dioxin	0.38	0.45	0.30	0.38	19.0
Total	3.44	6.57	4.82	4.94	31.7

Furans

Congener Group	Emission Rate Test No. 1 ng/s	Test No. 2 ng/s	Test No. 3 ng/s	Average ng/s	Coefficient of Variation %
Tetrachlorodibenzofurans	1.26	1.38	1.78	1.47	18.7
Pentachlorodibenzofurans	1.21	2.88	2.23	2.11	40.0
Hexachlorodibenzofurans	1.30	1.45	1.29	1.35	6.6
Heptachlorodibenzofurans	0.38	0.74	0.36	0.49	43.1
Octachlorodibenzofuran	0.065	0.048	<0.037	<0.050	28.7
Total	4.21	6.49	<5.70	<5.47	21.2

TABLE 31
Clean Harbors Sarnia
Summary of Dioxin and Furan Congener Group Emission Data

Dioxins

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzo-p-dioxins	0.011	0.035	0.028	0.018	0.63
Pentachlorodibenzo-p-dioxins	0.019	0.059	0.048	0.031	1.07
Hexachlorodibenzo-p-dioxins	0.028	0.085	0.068	0.044	1.54
Heptachlorodibenzo-p-dioxins	0.024	0.074	0.060	0.038	1.33
Octachlorodibenzo-p-dioxin	0.0069	0.021	0.017	0.011	0.38
Total	0.089	0.27	0.22	0.14	4.94

Furans

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate ng/s
Tetrachlorodibenzofurans	0.027	0.081	0.066	0.042	1.47
Pentachlorodibenzofurans	0.038	0.12	0.094	0.060	2.11
Hexachlorodibenzofurans	0.024	0.075	0.061	0.039	1.35
Heptachlorodibenzofurans	0.0089	0.027	0.022	0.014	0.49
Octachlorodibenzofuran	<0.00091	<0.0028	<0.0023	<0.0014	<0.050
Total	<0.099	<0.30	<0.24	<0.16	<5.47

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 32
Clean Harbors Sarnia
Blank Dioxin and Furan Congener Group Analyses

Dioxins

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzo-p-dioxins	<3.6	<4.8
Pentachlorodibenzo-p-dioxins	<2.6	<3.6
Hexachlorodibenzo-p-dioxins	<2.6	<4.2
Heptachlorodibenzo-p-dioxins	<3.5	<4.8
Octachlorodibenzo-p-dioxin	<9.4	16.3
Total	<21.7	<33.7

Furans

Congener Group	Blank Train pg	Laboratory Blank pg
Tetrachlorodibenzofurans	<2.9	<3.3
Pentachlorodibenzofurans	<2.5	<2.5
Hexachlorodibenzofurans	<2.0	<2.1
Heptachlorodibenzofurans	<2.2	<3.2
Octachlorodibenzofuran	<5.2	<7.1
Total	<14.8	<18.2

"<" indicates that the amount detected is less than the analytical detection limit (<MDL). In these cases the value of the detection limit was used to calculate the total collected.

TABLE 33
Clean Harbors Sarnia
Dioxin and Furan Specific Isomer Emission Data
Test No. 1

Specific Isomer	Total Collected pg	Actual Concentration pg/m³	Dry Reference Concentration pg/Rm³*	Dry Adjusted Concentration pg/Rm³**	Wet Reference Concentration pg/Rm³*	Emission Rate ng/s
2378-tetrachlorodibenzo-p-dioxin	<4.1	<0.28	<0.87	<0.72	<0.45	<0.015
12378-pentachlorodibenzo-p-dioxin	18.5	1.28	3.93	3.26	2.04	0.069
123478-hexachlorodibenzo-p-dioxin	<12	<0.83	<2.55	<2.11	<1.32	<0.045
123678-hexachlorodibenzo-p-dioxin	<37	<2.56	<7.86	<6.52	<4.07	<0.14
123789-hexachlorodibenzo-p-dioxin	20.7	1.43	4.40	3.65	2.28	0.077
1234678-heptachlorodibenzo-p-dioxin	151	10.4	32.1	26.6	16.6	0.56
Octachlorodibenzo-p-dioxin	103	7.12	21.9	18.2	11.3	0.38
2378-tetrachlorodibenzofuran	<13	<0.90	<2.76	<2.29	<1.43	<0.048
12378-pentachlorodibenzofuran	<20	<1.38	<4.25	<3.52	<2.20	<0.074
23478-pentachlorodibenzofuran	53.6	3.70	11.4	9.45	5.90	0.20
123478-hexachlorodibenzofuran	19.3	1.33	4.10	3.40	2.12	0.072
123678-hexachlorodibenzofuran	<41	<2.83	<8.71	<7.23	<4.51	<0.15
234678-hexachlorodibenzofuran	58.1	4.02	12.3	10.2	6.39	0.22
123789-hexachlorodibenzofuran	14.7	1.02	3.12	2.59	1.62	0.055
1234678-heptachlorodibenzofuran	67.3	4.65	14.3	11.9	7.40	0.25
1234789-heptachlorodibenzofuran	<14	<0.97	<2.97	<2.47	<1.54	<0.052
Octachlorodibenzofuran	17.5	1.21	3.72	3.08	1.93	0.065
PCB 77	227	15.7	48.2	40.0	25.0	0.84
PCB 81	<29	<2.00	<6.16	<5.11	<3.19	<0.11
PCB 126	<23	<1.59	<4.89	<4.05	<2.53	<0.086
PCB 169	<18	<1.24	<3.82	<3.17	<1.98	<0.067
PCB 105	1120	77.4	238	197	123	4.16
PCB 114	<61	<4.22	<13.0	<10.8	<6.71	<0.23
PCB 118	3580	247	761	631	394	13.3
PCB 123	<50	<3.46	<10.6	<8.81	<5.50	<0.19
PCB 156/157	<96	<6.64	<20.4	<16.9	<10.6	<0.36
PCB 167	<17	<1.18	<3.61	<3.00	<1.87	<0.063
PCB 189	<18	<1.24	<3.82	<3.17	<1.98	<0.067
Total Dioxins & Furans Only	<665	<46.0	<141	<117	<73.1	<2.47

Dry Gas Volume Sampled (Rm³*) :	4.706
Actual Flowrate (m³/s) :	53.8
Dry Reference Flowrate (Rm³/s*) :	17.5
Dry Adjusted Flowrate (Rm³/s**) :	21.1
Wet Reference Flowrate (Rm³/s*) :	33.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 34
Clean Harbors Sarnia
Dioxin and Furan Specific Isomer Emission Data
Test No. 2

Specific Isomer	Total Collected pg	Actual Concentration pg/m³	Dry Reference Concentration pg/Rm³*	Dry Adjusted Concentration pg/Rm³**	Wet Reference Concentration pg/Rm³*	Emission Rate ng/s
2378-tetrachlorodibenzo-p-dioxin	<4.7	<0.31	<0.94	<0.75	<0.48	<0.017
12378-pentachlorodibenzo-p-dioxin	<23	<1.49	<4.62	<3.68	<2.37	<0.083
123478-hexachlorodibenzo-p-dioxin	<13	<0.84	<2.61	<2.08	<1.34	<0.047
123678-hexachlorodibenzo-p-dioxin	<52	<3.38	<10.4	<8.31	<5.35	<0.19
123789-hexachlorodibenzo-p-dioxin	31.1	2.02	6.24	4.97	3.20	0.11
1234678-heptachlorodibenzo-p-dioxin	213	13.8	42.8	34.1	21.9	0.77
Octachlorodibenzo-p-dioxin	124	8.06	24.9	19.8	12.8	0.45
2378-tetrachlorodibenzofuran	<15	<0.97	<3.01	<2.40	<1.54	<0.054
12378-pentachlorodibenzofuran	41.9	2.72	8.41	6.70	4.31	0.15
23478-pentachlorodibenzofuran	75.8	4.93	15.2	12.1	7.80	0.27
123478-hexachlorodibenzofuran	28.0	1.82	5.62	4.48	2.88	0.10
123678-hexachlorodibenzofuran	<54	<3.51	<10.8	<8.63	<5.56	<0.20
234678-hexachlorodibenzofuran	81.5	5.30	16.4	13.0	8.39	0.29
123789-hexachlorodibenzofuran	17.8	1.16	3.57	2.85	1.83	0.064
1234678-heptachlorodibenzofuran	93.7	6.09	18.8	15.0	9.65	0.34
1234789-heptachlorodibenzofuran	23.0	1.49	4.62	3.68	2.37	0.083
Octachlorodibenzofuran	13.3	0.86	2.67	2.13	1.37	0.048
PCB 77	170	11.0	34.1	27.2	17.5	0.61
PCB 81	<29	<1.88	<5.82	<4.64	<2.99	<0.10
PCB 126	<31	<2.01	<6.22	<4.96	<3.19	<0.11
PCB 169	<29	<1.88	<5.82	<4.64	<2.99	<0.10
PCB 105	979	63.6	197	157	101	3.54
PCB 114	<73	<4.74	<14.7	<11.7	<7.52	<0.26
PCB 118	2920	190	586	467	301	10.6
PCB 123	<47	<3.05	<9.44	<7.52	<4.84	<0.17
PCB 156/157	115	7.47	23.1	18.4	11.8	0.42
PCB 167	<42	<2.73	<8.43	<6.72	<4.32	<0.15
PCB 189	<20	<1.30	<4.02	<3.20	<2.06	<0.072
Total Dioxins & Furans Only	<905	<58.8	<182	<145	<93.2	<3.27

Dry Gas Volume Sampled (Rm³*) :	4.981
Actual Flowrate (m³/s) :	55.6
Dry Reference Flowrate (Rm³/s*) :	18.0
Dry Adjusted Flowrate (Rm³/s**) :	22.6
Wet Reference Flowrate (Rm³/s*) :	35.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 35
Clean Harbors Sarnia
Dioxin and Furan Specific Isomer Emission Data
Test No. 3

Specific Isomer	Total Collected pg	Actual Concentration pg/m³	Dry Reference Concentration pg/Rm³*	Dry Adjusted Concentration pg/Rm³**	Wet Reference Concentration pg/Rm³*	Emission Rate ng/s
2378-tetrachlorodibenzo-p-dioxin	<4.7	<0.31	<0.93	<0.75	<0.48	<0.017
12378-pentachlorodibenzo-p-dioxin	<7.0	<0.45	<1.38	<1.11	<0.72	<0.026
123478-hexachlorodibenzo-p-dioxin	<11	<0.71	<2.17	<1.74	<1.13	<0.040
123678-hexachlorodibenzo-p-dioxin	37.6	2.44	7.40	5.96	3.85	0.14
123789-hexachlorodibenzo-p-dioxin	21.6	1.40	4.25	3.42	2.21	0.079
1234678-heptachlorodibenzo-p-dioxin	146	9.48	28.7	23.1	14.9	0.53
Octachlorodibenzo-p-dioxin	83.2	5.40	16.4	13.2	8.51	0.30
2378-tetrachlorodibenzofuran	<18	<1.17	<3.54	<2.85	<1.84	<0.066
12378-pentachlorodibenzofuran	<33	<2.14	<6.50	<5.23	<3.38	<0.12
23478-pentachlorodibenzofuran	60.1	3.90	11.8	9.53	6.15	0.22
123478-hexachlorodibenzofuran	23.7	1.54	4.67	3.76	2.42	0.087
123678-hexachlorodibenzofuran	<39	<2.53	<7.68	<6.18	<3.99	<0.14
234678-hexachlorodibenzofuran	64.3	4.18	12.7	10.2	6.58	0.24
123789-hexachlorodibenzofuran	14.4	0.94	2.84	2.28	1.47	0.053
1234678-heptachlorodibenzofuran	56.8	3.69	11.2	9.00	5.81	0.21
1234789-heptachlorodibenzofuran	13.8	0.90	2.72	2.19	1.41	0.051
Octachlorodibenzofuran	<10	<0.65	<1.97	<1.59	<1.02	<0.037
PCB 77	359	23.3	70.7	56.9	36.7	1.31
PCB 81	<30	<1.95	<5.91	<4.76	<3.07	<0.11
PCB 126	<45	<2.92	<8.86	<7.13	<4.60	<0.16
PCB 169	<31	<2.01	<6.10	<4.91	<3.17	<0.11
PCB 105	1550	101	305	246	159	5.68
PCB 114	172	11.2	33.9	27.3	17.6	0.63
PCB 118	4680	304	921	742	479	17.1
PCB 123	<58	<3.77	<11.4	<9.19	<5.93	<0.21
PCB 156/157	168	10.9	33.1	26.6	17.2	0.62
PCB 167	72.1	4.68	14.2	11.4	7.38	0.26
PCB 189	<18	<1.17	<3.54	<2.85	<1.84	<0.066
Total Dioxins & Furans Only	<644	<41.8	<127	<102	<65.9	<2.36

Dry Gas Volume Sampled (Rm^3*) :	5.079
Actual Flowrate (m^3/s) :	56.4
Dry Reference Flowrate (Rm^3/s*) :	18.6
Dry Adjusted Flowrate (Rm^3/s**) :	23.1
Wet Reference Flowrate (Rm^3/s*) :	35.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 36
Clean Harbors Sarnia
Dioxin and Furan Specific Isomer Actual Concentrations

Specific Isomer	Actual Concentration Test No. 1 pg/m³	Test No. 2 pg/m³	Test No. 3 pg/m³	Average pg/m³	Coefficient of Variation %
2378-tetrachlorodibenzo-p-dioxin	<0.28	<0.31	<0.31	<0.30	4.2
12378-pentachlorodibenzo-p-dioxin	1.28	<1.49	<0.45	<1.08	51.0
123478-hexachlorodibenzo-p-dioxin	<0.83	<0.84	<0.71	<0.80	9.0
123678-hexachlorodibenzo-p-dioxin	<2.56	<3.38	2.44	<2.79	18.3
123789-hexachlorodibenzo-p-dioxin	1.43	2.02	1.40	1.62	21.6
1234678-heptachlorodibenzo-p-dioxin	10.4	13.8	9.48	11.3	20.4
Octachlorodibenzo-p-dioxin	7.12	8.06	5.40	6.86	19.6
2378-tetrachlorodibenzofuran	<0.90	<0.97	<1.17	<1.01	13.7
12378-pentachlorodibenzofuran	<1.38	2.72	<2.14	<2.08	32.3
23478-pentachlorodibenzofuran	3.70	4.93	3.90	4.18	15.7
123478-hexachlorodibenzofuran	1.33	1.82	1.54	1.56	15.6
123678-hexachlorodibenzofuran	<2.83	<3.51	<2.53	<2.96	16.9
234678-hexachlorodibenzofuran	4.02	5.30	4.18	4.50	15.5
123789-hexachlorodibenzofuran	1.02	1.16	0.94	1.04	10.8
1234678-heptachlorodibenzofuran	4.65	6.09	3.69	4.81	25.1
1234789-heptachlorodibenzofuran	<0.97	1.49	0.90	<1.12	29.2
Octachlorodibenzofuran	1.21	0.86	<0.65	0.91	31.1
PCB 77	15.7	11.0	23.3	16.7	37.1
PCB 81	<2.00	<1.88	<1.95	<1.95	3.1
PCB 126	<1.59	<2.01	<2.92	<2.18	31.3
PCB 169	<1.24	<1.88	<2.01	<1.71	24.0
PCB 105	77.4	63.6	101	80.6	23.2
PCB 114	<4.22	<4.74	11.2	<6.71	57.7
PCB 118	247	190	304	247	23.1
PCB 123	<3.46	<3.05	<3.77	<3.43	10.4
PCB 156/157	<6.64	7.47	10.9	<8.34	27.1
PCB 167	<1.18	<2.73	4.68	<2.86	61.4
PCB 189	<1.24	<1.30	<1.17	<1.24	5.3
Total Dioxins & Furans Only	<46.0	<58.8	<41.8	<48.9	18.1

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 37
Clean Harbors Sarnia
Dioxin and Furan Specific Isomer Dry Reference Concentrations

Specific Isomer	Dry Reference Concentration Test No. 1 pg/Rm³*	Test No. 2 pg/Rm³*	Test No. 3 pg/Rm³*	Average pg/Rm³*	Coefficient of Variation %
2378-tetrachlorodibenzo-p-dioxin	<0.87	<0.94	<0.93	<0.91	4.1
12378-pentachlorodibenzo-p-dioxin	3.93	<4.62	<1.38	<3.31	51.6
123478-hexachlorodibenzo-p-dioxin	<2.55	<2.61	<2.17	<2.44	9.9
123678-hexachlorodibenzo-p-dioxin	<7.86	<10.4	7.40	<8.57	19.1
123789-hexachlorodibenzo-p-dioxin	4.40	6.24	4.25	4.97	22.4
1234678-heptachlorodibenzo-p-dioxin	32.1	42.8	28.7	34.5	21.2
Octachlorodibenzo-p-dioxin	21.9	24.9	16.4	21.1	20.5
2378-tetrachlorodibenzofuran	<2.76	<3.01	<3.54	<3.11	12.9
12378-pentachlorodibenzofuran	<4.25	8.41	<6.50	<6.39	32.6
23478-pentachlorodibenzofuran	11.4	15.2	11.8	12.8	16.3
123478-hexachlorodibenzofuran	4.10	5.62	4.67	4.80	16.0
123678-hexachlorodibenzofuran	<8.71	<10.8	<7.68	<9.08	17.8
234678-hexachlorodibenzofuran	12.3	16.4	12.7	13.8	16.2
123789-hexachlorodibenzofuran	3.12	3.57	2.84	3.18	11.7
1234678-heptachlorodibenzofuran	14.3	18.8	11.2	14.8	26.0
1234789-heptachlorodibenzofuran	<2.97	4.62	2.72	<3.44	30.0
Octachlorodibenzofuran	3.72	2.67	<1.97	2.79	31.6
PCB 77	48.2	34.1	70.7	51.0	36.1
PCB 81	<6.16	<5.82	<5.91	<5.96	3.0
PCB 126	<4.89	<6.22	<8.86	<6.66	30.4
PCB 169	<3.82	<5.82	<6.10	<5.25	23.7
PCB 105	238	197	305	247	22.2
PCB 114	<13.0	<14.7	33.9	<20.5	56.7
PCB 118	761	586	921	756	22.2
PCB 123	<10.6	<9.44	<11.4	<10.5	9.5
PCB 156/157	<20.4	23.1	33.1	<25.5	26.2
PCB 167	<3.61	<8.43	14.2	<8.75	60.6
PCB 189	<3.82	<4.02	<3.54	<3.79	6.2
Total Dioxins & Furans Only	<141	<182	<127	<150	19.0

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 38
Clean Harbors Sarnia
Dioxin and Furan Specific Isomer Dry Adjusted Concentrations

Specific Isomer	Dry Adjusted Concentration Test No. 1 pg/Rm³*	Test No. 2 pg/Rm³*	Test No. 3 pg/Rm³*	Average pg/Rm³*	Coefficient of Variation %
2378-tetrachlorodibenzo-p-dioxin	<0.72	<0.75	<0.75	<0.74	2.1
12378-pentachlorodibenzo-p-dioxin	3.26	<3.68	<1.11	<2.68	51.4
123478-hexachlorodibenzo-p-dioxin	<2.11	<2.08	<1.74	<1.98	10.3
123678-hexachlorodibenzo-p-dioxin	<6.52	<8.31	5.96	<6.93	17.7
123789-hexachlorodibenzo-p-dioxin	3.65	4.97	3.42	4.02	20.8
1234678-heptachlorodibenzo-p-dioxin	26.6	34.1	23.1	27.9	20.0
Octachlorodibenzo-p-dioxin	18.2	19.8	13.2	17.1	20.2
2378-tetrachlorodibenzofuran	<2.29	<2.40	<2.85	<2.51	11.9
12378-pentachlorodibenzofuran	<3.52	6.70	<5.23	<5.15	30.8
23478-pentachlorodibenzofuran	9.45	12.1	9.53	10.4	14.7
123478-hexachlorodibenzofuran	3.40	4.48	3.76	3.88	14.1
123678-hexachlorodibenzofuran	<7.23	<8.63	<6.18	<7.35	16.7
234678-hexachlorodibenzofuran	10.2	13.0	10.2	11.2	14.6
123789-hexachlorodibenzofuran	2.59	2.85	2.28	2.57	11.0
1234678-heptachlorodibenzofuran	11.9	15.0	9.00	11.9	25.0
1234789-heptachlorodibenzofuran	<2.47	3.68	2.19	<2.78	28.5
Octachlorodibenzofuran	3.08	2.13	<1.59	2.27	33.5
PCB 77	40.0	27.2	56.9	41.4	36.0
PCB 81	<5.11	<4.64	<4.76	<4.83	5.1
PCB 126	<4.05	<4.96	<7.13	<5.38	29.4
PCB 169	<3.17	<4.64	<4.91	<4.24	22.1
PCB 105	197	157	246	200	22.3
PCB 114	<10.8	<11.7	27.3	<16.6	56.0
PCB 118	631	467	742	613	22.6
PCB 123	<8.81	<7.52	<9.19	<8.51	10.3
PCB 156/157	<16.9	18.4	26.6	<20.6	25.4
PCB 167	<3.00	<6.72	11.4	<7.05	60.0
PCB 189	<3.17	<3.20	<2.85	<3.07	6.2
Total Dioxins & Furans Only	<117	<145	<102	<121	17.8

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 39
Clean Harbors Sarnia
Dioxin and Furan Specific Isomer Wet Reference Concentrations

Specific Isomer	Wet Reference Concentration Test No. 1 pg/Rm³*	Test No. 2 pg/Rm³*	Test No. 3 pg/Rm³*	Average pg/Rm³*	Coefficient of Variation %
2378-tetrachlorodibenzo-p-dioxin	<0.45	<0.48	<0.48	<0.47	3.8
12378-pentachlorodibenzo-p-dioxin	2.04	<2.37	<0.72	<1.71	51.2
123478-hexachlorodibenzo-p-dioxin	<1.32	<1.34	<1.13	<1.26	9.4
123678-hexachlorodibenzo-p-dioxin	<4.07	<5.35	3.85	<4.42	18.4
123789-hexachlorodibenzo-p-dioxin	2.28	3.20	2.21	2.56	21.6
1234678-heptachlorodibenzo-p-dioxin	16.6	21.9	14.9	17.8	20.5
Octachlorodibenzo-p-dioxin	11.3	12.8	8.51	10.9	19.9
2378-tetrachlorodibenzofuran	<1.43	<1.54	<1.84	<1.61	13.2
12378-pentachlorodibenzofuran	<2.20	4.31	<3.38	<3.30	32.1
23478-pentachlorodibenzofuran	5.90	7.80	6.15	6.62	15.7
123478-hexachlorodibenzofuran	2.12	2.88	2.42	2.48	15.4
123678-hexachlorodibenzofuran	<4.51	<5.56	<3.99	<4.69	17.1
234678-hexachlorodibenzofuran	6.39	8.39	6.58	7.12	15.5
123789-hexachlorodibenzofuran	1.62	1.83	1.47	1.64	11.0
1234678-heptachlorodibenzofuran	7.40	9.65	5.81	7.62	25.3
1234789-heptachlorodibenzofuran	<1.54	2.37	1.41	<1.77	29.3
Octachlorodibenzofuran	1.93	1.37	<1.02	1.44	31.6
PCB 77	25.0	17.5	36.7	26.4	36.7
PCB 81	<3.19	<2.99	<3.07	<3.08	3.3
PCB 126	<2.53	<3.19	<4.60	<3.44	30.8
PCB 169	<1.98	<2.99	<3.17	<2.71	23.6
PCB 105	123	101	159	128	22.8
PCB 114	<6.71	<7.52	17.6	<10.6	57.2
PCB 118	394	301	479	391	22.8
PCB 123	<5.50	<4.84	<5.93	<5.42	10.2
PCB 156/157	<10.6	11.8	17.2	<13.2	26.6
PCB 167	<1.87	<4.32	7.38	<4.52	61.0
PCB 189	<1.98	<2.06	<1.84	<1.96	5.6
Total Dioxins & Furans Only	<73.1	<93.2	<65.9	<77.4	18.2

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 40
Clean Harbors Sarnia
Dioxin and Furan Specific Isomer Emission Rates

Specific Isomer	Emission Rate Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/s	ng/s	ng/s	ng/s	%
2378-tetrachlorodibenzo-p-dioxin	<0.015	<0.017	<0.017	<0.016	6.5
12378-pentachlorodibenzo-p-dioxin	0.069	<0.083	<0.026	<0.059	50.6
123478-hexachlorodibenzo-p-dioxin	<0.045	<0.047	<0.040	<0.044	7.7
123678-hexachlorodibenzo-p-dioxin	<0.14	<0.19	0.14	<0.15	18.8
123789-hexachlorodibenzo-p-dioxin	0.077	0.11	0.079	0.089	22.2
1234678-heptachlorodibenzo-p-dioxin	0.56	0.77	0.53	0.62	20.7
Octachlorodibenzo-p-dioxin	0.38	0.45	0.30	0.38	19.0
2378-tetrachlorodibenzofuran	<0.048	<0.054	<0.066	<0.056	15.9
12378-pentachlorodibenzofuran	<0.074	0.15	<0.12	<0.12	33.6
23478-pentachlorodibenzofuran	0.20	0.27	0.22	0.23	16.7
123478-hexachlorodibenzofuran	0.072	0.10	0.087	0.087	17.0
123678-hexachlorodibenzofuran	<0.15	<0.20	<0.14	<0.16	17.0
234678-hexachlorodibenzofuran	0.22	0.29	0.24	0.25	16.4
123789-hexachlorodibenzofuran	0.055	0.064	0.053	0.057	10.8
1234678-heptachlorodibenzofuran	0.25	0.34	0.21	0.27	25.1
1234789-heptachlorodibenzofuran	<0.052	0.083	0.051	<0.062	29.7
Octachlorodibenzofuran	0.065	0.048	<0.037	0.050	28.7
PCB 77	0.84	0.61	1.31	0.92	38.6
PCB 81	<0.11	<0.10	<0.11	<0.11	2.4
PCB 126	<0.086	<0.11	<0.16	<0.12	33.4
PCB 169	<0.067	<0.10	<0.11	<0.095	26.0
PCB 105	4.16	3.54	5.68	4.46	24.6
PCB 114	<0.23	<0.26	0.63	<0.37	59.6
PCB 118	13.3	10.6	17.1	13.7	24.2
PCB 123	<0.19	<0.17	<0.21	<0.19	11.3
PCB 156/157	<0.36	0.42	0.62	<0.46	29.3
PCB 167	<0.063	<0.15	0.26	<0.16	63.0
PCB 189	<0.067	<0.072	<0.066	<0.068	5.0
Total Dioxins & Furans Only	<2.47	<3.27	<2.36	<2.70	18.4

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 41
Clean Harbors Sarnia
Summary of Dioxin and Furan Specific Isomer Emission Data

Specific Isomer	Actual Concentration pg/m³	Dry Reference Concentration pg/Rm³*	Dry Adjusted Concentration pg/Rm³**	Wet Reference Concentration pg/Rm³*	Emission Rate ng/s
2378-tetrachlorodibenzo-p-dioxin	<0.30	<0.91	<0.74	<0.47	<0.016
12378-pentachlorodibenzo-p-dioxin	<1.08	<3.31	<2.68	<1.71	<0.059
123478-hexachlorodibenzo-p-dioxin	<0.80	<2.44	<1.98	<1.26	<0.044
123678-hexachlorodibenzo-p-dioxin	<2.79	<8.57	<6.93	<4.42	<0.15
123789-hexachlorodibenzo-p-dioxin	1.62	4.97	4.02	2.56	0.089
1234678-heptachlorodibenzo-p-dioxin	11.3	34.5	27.9	17.8	0.62
Octachlorodibenzo-p-dioxin	6.86	21.1	17.1	10.9	0.38
2378-tetrachlorodibenzofuran	<1.01	<3.11	<2.51	<1.61	<0.056
12378-pentachlorodibenzofuran	<2.08	<6.39	<5.15	<3.30	<0.12
23478-pentachlorodibenzofuran	4.18	12.8	10.4	6.62	0.23
123478-hexachlorodibenzofuran	1.56	4.80	3.88	2.48	0.087
123678-hexachlorodibenzofuran	<2.96	<9.08	<7.35	<4.69	<0.16
234678-hexachlorodibenzofuran	4.50	13.8	11.2	7.12	0.25
123789-hexachlorodibenzofuran	1.04	3.18	2.57	1.64	0.057
1234678-heptachlorodibenzofuran	4.81	14.8	11.9	7.62	0.27
1234789-heptachlorodibenzofuran	<1.12	<3.44	<2.78	<1.77	<0.062
Octachlorodibenzofuran	0.91	2.79	2.27	1.44	0.050
PCB 77	16.7	51.0	41.4	26.4	0.92
PCB 81	<1.95	<5.96	<4.83	<3.08	<0.11
PCB 126	<2.18	<6.66	<5.38	<3.44	<0.12
PCB 169	<1.71	<5.25	<4.24	<2.71	<0.095
PCB 105	80.6	247	200	128	4.46
PCB 114	<6.71	<20.5	<16.6	<10.6	<0.37
PCB 118	247	756	613	391	13.7
PCB 123	<3.43	<10.5	<8.51	<5.42	<0.19
PCB 156/157	<8.34	<25.5	<20.6	<13.2	<0.46
PCB 167	<2.86	<8.75	<7.05	<4.52	<0.16
PCB 189	<1.24	<3.79	<3.07	<1.96	<0.068
Total Dioxins & Furans Only	<48.9	<150	<121	<77.4	<2.70

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 42
Clean Harbors Sarnia
Blank Dioxin and Furan Specific Isomer Analyses

Specific Isomer	Blank Train pg	Laboratory Blank pg
2378-tetrachlorodibenzo-p-dioxin	<3.6	<4.8
12378-pentachlorodibenzo-p-dioxin	<2.6	<3.6
123478-hexachlorodibenzo-p-dioxin	<2.6	<4.2
123678-hexachlorodibenzo-p-dioxin	<2.6	<4.1
123789-hexachlorodibenzo-p-dioxin	<2.4	<3.9
1234678-heptachlorodibenzo-p-dioxin	<3.5	<4.8
Octachlorodibenzo-p-dioxin	<9.4	16.3
2378-tetrachlorodibenzofuran	<2.9	<3.3
12378-pentachlorodibenzofuran	<2.5	<2.5
23478-pentachlorodibenzofuran	<2.2	<2.2
123478-hexachlorodibenzofuran	<1.7	<1.7
123678-hexachlorodibenzofuran	<1.7	<1.7
234678-hexachlorodibenzofuran	<1.7	<1.7
123789-hexachlorodibenzofuran	<2.0	<2.1
1234678-heptachlorodibenzofuran	<1.9	<2.6
1234789-heptachlorodibenzofuran	<2.2	<3.2
Octachlorodibenzofuran	<5.2	<7.1
PCB 77	<13	<19
PCB 81	<12	<19
PCB 126	<17	<33
PCB 169	<10	<11
PCB 105	<16	<30
PCB 114	<18	<35
PCB 118	<17	<30
PCB 123	<18	<35
PCB 156/157	<13	<14
PCB 167	<10	<9.8
PCB 189	<6.1	<12
Total Dioxins & Furans Only	<50.7	<69.8

"<" indicates that the amount detected is less than the analytical detection limit (<MDL). In these cases the value of the detection limit was used to calculate the total collected.

TABLE 43
Clean Harbors Sarnia
Dioxin and Furan Toxicity Equivalent Actual Concentrations

Specific Isomer	Toxicity Equivalency Factor	Actual Concentration Test No. 1 pg TEQ/m³	Test No. 2 pg TEQ/m³	Test No. 3 pg TEQ/m³	Average pg TEQ/m³
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.28	<0.31	<0.31	<0.30
12378-pentachlorodibenzo-p-dioxin	1.000	1.28	<1.49	<0.45	<1.08
123478-hexachlorodibenzo-p-dioxin	0.100	<0.083	<0.084	<0.071	<0.080
123678-hexachlorodibenzo-p-dioxin	0.100	<0.26	<0.34	0.24	<0.28
123789-hexachlorodibenzo-p-dioxin	0.100	0.14	0.20	0.14	0.16
1234678-heptachlorodibenzo-p-dioxin	0.010	0.10	0.14	0.095	0.11
Octachlorodibenzo-p-dioxin	0.0003	0.0021	0.0024	0.0016	0.0021
2378-tetrachlorodibenzofuran	0.100	<0.090	<0.097	<0.12	<0.10
12378-pentachlorodibenzofuran	0.030	<0.041	0.082	<0.064	<0.062
23478-pentachlorodibenzofuran	0.300	1.11	1.48	1.17	1.25
123478-hexachlorodibenzofuran	0.100	0.13	0.18	0.15	0.16
123678-hexachlorodibenzofuran	0.100	<0.28	<0.35	<0.25	<0.30
234678-hexachlorodibenzofuran	0.100	0.40	0.53	0.42	0.45
123789-hexachlorodibenzofuran	0.100	0.10	0.12	0.094	0.10
1234678-heptachlorodibenzofuran	0.010	0.047	0.061	0.037	0.048
1234789-heptachlorodibenzofuran	0.010	<0.0097	0.015	0.0090	<0.011
Octachlorodibenzofuran	0.0003	0.00036	0.00026	<0.00019	0.00027
PCB 77	0.0001	0.0016	0.0011	0.0023	0.0017
PCB 81	0.0003	<0.00060	<0.00057	<0.00058	<0.00058
PCB 126	0.1000	<0.16	<0.20	<0.29	<0.22
PCB 169	0.0300	<0.037	<0.057	<0.060	<0.051
PCB 105	0.00003	0.0023	0.0019	0.0030	0.0024
PCB 114	0.00003	<0.00013	<0.00014	0.00034	<0.00020
PCB 118	0.00003	0.0074	0.0057	0.0091	0.0074
PCB 123	0.00003	<0.00010	<0.000092	<0.00011	<0.00010
PCB 156/157	0.00003	<0.00020	0.00022	0.00033	<0.00025
PCB 167	0.00003	<0.000035	<0.000082	0.00014	<0.000086
PCB 189	0.00003	<0.000037	<0.000039	<0.000035	<0.000037
Total Dioxins & Furans Only		<4.37	<5.48	<3.63	<4.49

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 44
Clean Harbors Sarnia
Dioxin and Furan Toxicity Equivalent Dry Reference Concentrations

Specific Isomer	Toxicity Equivalency Factor	Dry Reference Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.87	<0.94	<0.93	<0.91
12378-pentachlorodibenzo-p-dioxin	1.000	3.93	<4.62	<1.38	<3.31
123478-hexachlorodibenzo-p-dioxin	0.100	<0.25	<0.26	<0.22	<0.24
123678-hexachlorodibenzo-p-dioxin	0.100	<0.79	<1.04	0.74	<0.86
123789-hexachlorodibenzo-p-dioxin	0.100	0.44	0.62	0.43	0.50
1234678-heptachlorodibenzo-p-dioxin	0.010	0.32	0.43	0.29	0.35
Octachlorodibenzo-p-dioxin	0.0003	0.0066	0.0075	0.0049	0.0063
2378-tetrachlorodibenzofuran	0.100	<0.28	<0.30	<0.35	<0.31
12378-pentachlorodibenzofuran	0.030	<0.13	0.25	<0.19	<0.19
23478-pentachlorodibenzofuran	0.300	3.42	4.57	3.55	3.84
123478-hexachlorodibenzofuran	0.100	0.41	0.56	0.47	0.48
123678-hexachlorodibenzofuran	0.100	<0.87	<1.08	<0.77	<0.91
234678-hexachlorodibenzofuran	0.100	1.23	1.64	1.27	1.38
123789-hexachlorodibenzofuran	0.100	0.31	0.36	0.284	0.32
1234678-heptachlorodibenzofuran	0.010	0.14	0.19	0.11	0.15
1234789-heptachlorodibenzofuran	0.010	<0.030	0.046	0.027	<0.034
Octachlorodibenzofuran	0.0003	0.0011	0.00080	<0.00059	0.00084
PCB 77	0.0001	0.0048	0.0034	0.0071	0.0051
PCB 81	0.0003	<0.0018	<0.0017	<0.0018	<0.0018
PCB 126	0.1000	<0.49	<0.62	<0.89	<0.67
PCB 169	0.0300	<0.11	<0.17	<0.18	<0.16
PCB 105	0.00003	0.0071	0.0059	0.0092	0.0074
PCB 114	0.00003	<0.00039	<0.00044	0.0010	<0.00061
PCB 118	0.00003	0.023	0.018	0.028	0.023
PCB 123	0.00003	<0.00032	<0.00028	<0.00034	<0.00031
PCB 156/157	0.00003	<0.00061	0.00069	0.00099	<0.00077
PCB 167	0.00003	<0.00011	<0.00025	0.00043	<0.00026
PCB 189	0.00003	<0.00011	<0.00012	<0.00011	<0.00011
Total Dioxins & Furans Only		<13.4	<16.9	<11.0	<13.8

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 45
Clean Harbors Sarnia
Dioxin and Furan Toxicity Equivalent Dry Adjusted Concentrations

Specific Isomer	Toxicity Equivalency Factor	Dry Adjusted Concentration Test No. 1 pg TEQ/Rm^3*	Test No. 2 pg TEQ/Rm^3*	Test No. 3 pg TEQ/Rm^3*	Average pg TEQ/Rm^3*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.72	<0.75	<0.75	<0.74
12378-pentachlorodibenzo-p-dioxin	1.000	3.26	<3.68	<1.11	<2.68
123478-hexachlorodibenzo-p-dioxin	0.100	<0.21	<0.21	<0.17	<0.20
123678-hexachlorodibenzo-p-dioxin	0.100	<0.65	<0.83	0.60	<0.69
123789-hexachlorodibenzo-p-dioxin	0.100	0.36	0.50	0.34	0.40
1234678-heptachlorodibenzo-p-dioxin	0.010	0.27	0.34	0.23	0.28
Octachlorodibenzo-p-dioxin	0.0003	0.0054	0.0059	0.0040	0.0051
2378-tetrachlorodibenzofuran	0.100	<0.23	<0.24	<0.29	<0.25
12378-pentachlorodibenzofuran	0.030	<0.11	0.20	<0.16	<0.15
23478-pentachlorodibenzofuran	0.300	2.83	3.64	2.86	3.11
123478-hexachlorodibenzofuran	0.100	0.34	0.45	0.38	0.39
123678-hexachlorodibenzofuran	0.100	<0.72	<0.86	<0.62	<0.73
234678-hexachlorodibenzofuran	0.100	1.02	1.30	1.02	1.12
123789-hexachlorodibenzofuran	0.100	0.26	0.28	0.23	0.26
1234678-heptachlorodibenzofuran	0.010	0.12	0.15	0.090	0.12
1234789-heptachlorodibenzofuran	0.010	<0.025	0.037	0.022	<0.028
Octachlorodibenzofuran	0.0003	0.00093	0.00064	<0.00048	0.00068
PCB 77	0.0001	0.0040	0.0027	0.0057	0.0041
PCB 81	0.0003	<0.0015	<0.0014	<0.0014	<0.0015
PCB 126	0.1000	<0.41	<0.50	<0.71	<0.54
PCB 169	0.0300	<0.095	<0.14	<0.15	<0.13
PCB 105	0.00003	0.0059	0.0047	0.0074	0.0060
PCB 114	0.00003	<0.00032	<0.00035	0.00082	<0.00050
PCB 118	0.00003	0.019	0.014	0.022	0.018
PCB 123	0.00003	<0.00026	<0.00023	<0.00028	<0.00026
PCB 156/157	0.00003	<0.00051	0.00055	0.00080	<0.00062
PCB 167	0.00003	<0.000090	<0.00020	0.00034	<0.00021
PCB 189	0.00003	<0.000095	<0.000096	<0.000086	<0.000092
Total Dioxins & Furans Only		<11.1	<13.5	<8.86	<11.2

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 46
Clean Harbors Sarnia
Dioxin and Furan Toxicity Equivalent Wet Reference Concentrations

Specific Isomer	Toxicity Equivalency Factor	Wet Reference Concentration Test No. 1 pg TEQ/Rm³*	Test No. 2 pg TEQ/Rm³*	Test No. 3 pg TEQ/Rm³*	Average pg TEQ/Rm³*
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.45	<0.48	<0.48	<0.47
12378-pentachlorodibenzo-p-dioxin	1.000	2.04	<2.37	<0.72	<1.71
123478-hexachlorodibenzo-p-dioxin	0.100	<0.13	<0.13	<0.11	<0.13
123678-hexachlorodibenzo-p-dioxin	0.100	<0.41	<0.54	0.38	<0.44
123789-hexachlorodibenzo-p-dioxin	0.100	0.23	0.32	0.22	0.26
1234678-heptachlorodibenzo-p-dioxin	0.010	0.17	0.22	0.15	0.18
Octachlorodibenzo-p-dioxin	0.0003	0.0034	0.0038	0.0026	0.0033
2378-tetrachlorodibenzofuran	0.100	<0.14	<0.15	<0.18	<0.16
12378-pentachlorodibenzofuran	0.030	<0.066	0.13	<0.10	<0.099
23478-pentachlorodibenzofuran	0.300	1.77	2.34	1.84	1.98
123478-hexachlorodibenzofuran	0.100	0.21	0.29	0.24	0.25
123678-hexachlorodibenzofuran	0.100	<0.45	<0.56	<0.40	<0.47
234678-hexachlorodibenzofuran	0.100	0.64	0.84	0.66	0.71
123789-hexachlorodibenzofuran	0.100	0.16	0.18	0.15	0.16
1234678-heptachlorodibenzofuran	0.010	0.074	0.096	0.058	0.076
1234789-heptachlorodibenzofuran	0.010	<0.015	0.024	0.014	<0.018
Octachlorodibenzofuran	0.0003	0.00058	0.00041	<0.00031	0.00043
PCB 77	0.0001	0.0025	0.0018	0.0037	0.0026
PCB 81	0.0003	<0.00096	<0.00090	<0.00092	<0.00092
PCB 126	0.1000	<0.25	<0.32	<0.46	<0.34
PCB 169	0.0300	<0.059	<0.090	<0.095	<0.081
PCB 105	0.00003	0.0037	0.0030	0.0048	0.0038
PCB 114	0.00003	<0.00020	<0.00023	0.00053	<0.00032
PCB 118	0.00003	0.012	0.0090	0.014	0.012
PCB 123	0.00003	<0.00017	<0.00015	<0.00018	<0.00016
PCB 156/157	0.00003	<0.00032	0.00036	0.00052	<0.00040
PCB 167	0.00003	<0.000056	<0.00013	0.00022	<0.00014
PCB 189	0.00003	<0.000059	<0.000062	<0.000055	<0.000059
Total Dioxins & Furans Only		<6.96	<8.68	<5.72	<7.12

* At 25°C and 1 atmosphere

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 47
Clean Harbors Sarnia
Dioxin and Furan Toxicity Equivalent Emission Rates

Specific Isomer	Toxicity Equivalency Factor	Emission Rate Test No. 1 ng TEQ/s	Test No. 2 ng TEQ/s	Test No. 3 ng TEQ/s	Average ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	1.000	<0.015	<0.017	<0.017	<0.016
12378-pentachlorodibenzo-p-dioxin	1.000	0.069	<0.083	<0.026	<0.059
123478-hexachlorodibenzo-p-dioxin	0.100	<0.0045	<0.0047	<0.0040	<0.0044
123678-hexachlorodibenzo-p-dioxin	0.100	<0.014	<0.019	0.014	<0.015
123789-hexachlorodibenzo-p-dioxin	0.100	0.0077	0.011	0.0079	0.0089
1234678-heptachlorodibenzo-p-dioxin	0.010	0.0056	0.0077	0.0053	0.0062
Octachlorodibenzo-p-dioxin	0.0003	0.00011	0.00013	0.000091	0.00011
2378-tetrachlorodibenzofuran	0.100	<0.0048	<0.0054	<0.0066	<0.0056
12378-pentachlorodibenzofuran	0.030	<0.0022	0.0045	<0.0036	<0.0035
23478-pentachlorodibenzofuran	0.300	0.060	0.082	0.066	0.069
123478-hexachlorodibenzofuran	0.100	0.0072	0.010	0.0087	0.0087
123678-hexachlorodibenzofuran	0.100	<0.015	<0.020	<0.014	<0.016
234678-hexachlorodibenzofuran	0.100	0.022	0.029	0.024	0.025
123789-hexachlorodibenzofuran	0.100	0.0055	0.0064	0.0053	0.0057
1234678-heptachlorodibenzofuran	0.010	0.0025	0.0034	0.0021	0.0027
1234789-heptachlorodibenzofuran	0.010	<0.00052	0.00083	0.00051	<0.00062
Octachlorodibenzofuran	0.0003	0.000020	0.000014	<0.000011	0.000015
PCB 77	0.0001	0.000084	0.000061	0.00013	0.000092
PCB 81	0.0003	<0.000032	<0.000031	<0.000033	<0.000032
PCB 126	0.1000	<0.0086	<0.011	<0.016	<0.012
PCB 169	0.0300	<0.0020	<0.0031	<0.0034	<0.0029
PCB 105	0.00003	0.00012	0.00011	0.00017	0.00013
PCB 114	0.00003	<0.0000068	<0.0000079	0.000019	<0.000011
PCB 118	0.00003	0.00040	0.00032	0.00051	0.00041
PCB 123	0.00003	<0.0000056	<0.0000051	<0.0000064	<0.0000057
PCB 156/157	0.00003	<0.000011	0.000012	0.000018	<0.000014
PCB 167	0.00003	<0.0000019	<0.0000046	0.0000079	<0.0000048
PCB 189	0.00003	<0.0000020	<0.0000022	<0.0000020	<0.0000021
Total Dioxins & Furans Only		<0.24	<0.30	<0.20	<0.25

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 48
Clean Harbors Sarnia
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using the Full Detection Limit

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	<0.30	<0.91	<0.74	<0.47	<0.016
12378-pentachlorodibenzo-p-dioxin	<1.08	<3.31	<2.68	<1.71	<0.059
123478-hexachlorodibenzo-p-dioxin	<0.080	<0.24	<0.20	<0.13	<0.0044
123678-hexachlorodibenzo-p-dioxin	<0.28	<0.86	<0.69	<0.44	<0.015
123789-hexachlorodibenzo-p-dioxin	0.16	0.50	0.40	0.26	0.0089
1234678-heptachlorodibenzo-p-dioxin	0.11	0.35	0.28	0.18	0.0062
Octachlorodibenzo-p-dioxin	0.0021	0.0063	0.0051	0.0033	0.00011
2378-tetrachlorodibenzofuran	<0.10	<0.31	<0.25	<0.16	<0.0056
12378-pentachlorodibenzofuran	<0.062	<0.19	<0.15	<0.099	<0.0035
23478-pentachlorodibenzofuran	1.25	3.84	3.11	1.98	0.069
123478-hexachlorodibenzofuran	0.16	0.48	0.39	0.25	0.0087
123678-hexachlorodibenzofuran	<0.30	<0.91	<0.73	<0.47	<0.016
234678-hexachlorodibenzofuran	0.45	1.38	1.12	0.71	0.025
123789-hexachlorodibenzofuran	0.10	0.32	0.26	0.16	0.0057
1234678-heptachlorodibenzofuran	0.048	0.15	0.12	0.076	0.0027
1234789-heptachlorodibenzofuran	<0.011	<0.034	<0.028	<0.018	<0.00062
Octachlorodibenzofuran	0.00027	0.00084	0.00068	0.00043	0.000015
PCB 77	0.0017	0.0051	0.0041	0.0026	0.000092
PCB 81	<0.00058	<0.0018	<0.0015	<0.00092	<0.000032
PCB 126	<0.22	<0.67	<0.54	<0.34	<0.012
PCB 169	<0.051	<0.16	<0.13	<0.081	<0.0029
PCB 105	0.0024	0.0074	0.0060	0.0038	0.00013
PCB 114	<0.00020	<0.00061	<0.00050	<0.00032	<0.000011
PCB 118	0.0074	0.023	0.018	0.012	0.00041
PCB 123	<0.00010	<0.00031	<0.00026	<0.00016	<0.0000057
PCB 156/157	<0.00025	<0.00077	<0.00062	<0.00040	<0.000014
PCB 167	<0.000086	<0.00026	<0.00021	<0.00014	<0.0000048
PCB 189	<0.000037	<0.00011	<0.000092	<0.000059	<0.0000021
Total Dioxins & Furans Only	<4.49	<13.8	<11.2	<7.12	<0.25

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: Emission data calculated using the full detection limit for those isomers below the analytical detection limit.

TABLE 49
Clean Harbors Sarnia
Summary of Dioxin and Furan Toxicity Equivalent Emission Data
Calculated Using Half the Detection Limit

Specific Isomer	Actual Concentration pg TEQ/m³	Dry Reference Concentration pg TEQ/Rm³*	Dry Adjusted Concentration pg TEQ/Rm³**	Wet Reference Concentration pg TEQ/Rm³*	Emission Rate ng TEQ/s
2378-tetrachlorodibenzo-p-dioxin	0.15	0.46	0.37	0.24	0.0082
12378-pentachlorodibenzo-p-dioxin	0.75	2.31	1.88	1.19	0.041
123478-hexachlorodibenzo-p-dioxin	0.040	0.12	0.099	0.063	0.0022
123678-hexachlorodibenzo-p-dioxin	0.18	0.55	0.45	0.29	0.010
123789-hexachlorodibenzo-p-dioxin	0.16	0.50	0.40	0.26	0.0089
1234678-heptachlorodibenzo-p-dioxin	0.11	0.35	0.28	0.18	0.0062
Octachlorodibenzo-p-dioxin	0.0021	0.0063	0.0051	0.0033	0.00011
2378-tetrachlorodibenzofuran	0.051	0.16	0.13	0.080	0.0028
12378-pentachlorodibenzofuran	0.045	0.14	0.11	0.071	0.0025
23478-pentachlorodibenzofuran	1.25	3.84	3.11	1.98	0.069
123478-hexachlorodibenzofuran	0.16	0.48	0.39	0.25	0.0087
123678-hexachlorodibenzofuran	0.15	0.45	0.37	0.23	0.0082
234678-hexachlorodibenzofuran	0.45	1.38	1.12	0.71	0.025
123789-hexachlorodibenzofuran	0.10	0.32	0.26	0.16	0.0057
1234678-heptachlorodibenzofuran	0.048	0.15	0.12	0.076	0.0027
1234789-heptachlorodibenzofuran	0.0096	0.029	0.024	0.015	0.00053
Octachlorodibenzofuran	0.00024	0.00074	0.00060	0.00038	0.000013
PCB 77	0.0017	0.0051	0.0041	0.0026	0.000092
PCB 81	0.00029	0.00089	0.00073	0.00046	0.000016
PCB 126	0.11	0.33	0.27	0.17	0.0060
PCB 169	0.026	0.079	0.064	0.041	0.0014
PCB 105	0.0024	0.0074	0.0060	0.0038	0.00013
PCB 114	0.00016	0.00048	0.00038	0.00025	0.0000088
PCB 118	0.0074	0.023	0.018	0.012	0.00041
PCB 123	0.000051	0.00016	0.00013	0.000081	0.0000028
PCB 156/157	0.00022	0.00066	0.00053	0.00034	0.000012
PCB 167	0.000066	0.00020	0.00016	0.00010	0.0000037
PCB 189	0.000019	0.000057	0.000046	0.000029	0.0000010
Total Dioxins & Furans Only	3.66	11.2	9.10	5.80	0.20
Total Dioxins, Furans and PCBs	3.81	11.7	9.47	6.03	0.21

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: Emission data calculated using half the detection limit for those isomers below the analytical detection limit.

TABLE 50
Clean Harbors Sarnia
Polychlorinated Biphenyl Congener Group Emission Data
Test No. 1

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
Dichlorinated biphenyls	5590	0.39	1.19	0.99	0.62	0.021
Trichlorinated biphenyls	8700	0.60	1.85	1.53	0.96	0.032
Tetrachlorinated biphenyls	28700	1.98	6.10	5.06	3.16	0.11
Pentachlorinated biphenyls	38700	2.67	8.22	6.82	4.26	0.14
Hexachlorinated biphenyls	8150	0.56	1.73	1.44	0.90	0.030
Heptachlorinated biphenyls	1300	0.090	0.28	0.23	0.14	0.0048
Octachlorinated biphenyls	293	0.020	0.062	0.052	0.032	0.0011
Nonachlorinated biphenyls	<19	<0.0013	<0.0040	<0.0033	<0.0021	<0.000071
Decachlorinated biphenyl	<13	<0.00090	<0.0028	<0.0023	<0.0014	<0.000048
Total	<91465	<6.32	<19.4	<16.1	<10.1	<0.34

Dry Gas Volume Sampled (Rm^3*) :	4.706
Actual Flowrate (m^3/s) :	53.8
Dry Reference Flowrate (Rm^3/s*) :	17.S
Dry Adjusted Flowrate (Rm^3/s**) :	21.1
Wet Reference Flowrate (Rm^3/s*) :	33.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 51
Clean Harbors Sarnia
Polychlorinated Biphenyl Congener Group Emission Data
Test No. 2

Congener Group	Total Collected pg	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
Dichlorinated biphenyls	4300	0.28	0.86	0.69	0.44	0.016
Trichlorinated biphenyls	3210	0.21	0.64	0.51	0.33	0.012
Tetrachlorinated biphenyls	13900	0.90	2.79	2.22	1.43	0.050
Pentachlorinated biphenyls	24900	1.62	5.00	3.98	2.56	0.090
Hexachlorinated biphenyls	5820	0.38	1.17	0.93	0.60	0.021
Heptachlorinated biphenyls	617	0.040	0.12	0.099	0.064	0.0022
Octachlorinated biphenyls	80.0	0.0052	0.016	0.013	0.0082	0.00029
Nonachlorinated biphenyls	61.0	0.0040	0.012	0.0098	0.0063	0.00022
Decachlorinated biphenyl	<13	<0.00084	<0.0026	<0.0021	<0.0013	<0.000047
Total	<52901	<3.44	<10.6	<8.46	<5.45	<0.19

Dry Gas Volume Sampled (Rm^3*) :	4.981
Actual Flowrate (m^3/s) :	55.6
Dry Reference Flowrate (Rm^3/s*) :	18.0
Dry Adjusted Flowrate (Rm^3/s**) :	22.6
Wet Reference Flowrate (Rm^3/s*) :	35.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 52
Clean Harbors Sarnia
Polychlorinated Biphenyl Congener Group Emission Data
Test No. 3

Congener Group	Total Collected pg	Actual Concentration ng/m^3	Dry Reference Concentration ng/Rm^3*	Dry Adjusted Concentration ng/Rm^3**	Wet Reference Concentration ng/Rm^3*	Emission Rate µg/s
Dichlorinated biphenyls	6870	0.45	1.35	1.09	0.70	0.025
Trichlorinated biphenyls	4570	0.30	0.90	0.72	0.47	0.017
Tetrachlorinated biphenyls	28900	1.88	5.69	4.58	2.96	0.11
Pentachlorinated biphenyls	47100	3.06	9.27	7.47	4.82	0.17
Hexachlorinated biphenyls	10200	0.66	2.01	1.62	1.04	0.037
Heptachlorinated biphenyls	799	0.052	0.16	0.13	0.082	0.0029
Octachlorinated biphenyls	226	0.015	0.044	0.036	0.023	0.00083
Nonachlorinated biphenyls	<30	<0.0019	<0.0059	<0.0048	<0.0031	<0.00011
Decachlorinated biphenyl	20.0	0.0013	0.0039	0.0032	0.0020	0.000073
Total	<98715	<6.41	<19.4	<15.6	<10.1	<0.36

Dry Gas Volume Sampled (Rm^3*) :	5.079
Actual Flowrate (m^3/s) :	56.4
Dry Reference Flowrate (Rm^3/s*) :	18.6
Dry Adjusted Flowrate (Rm^3/s**) :	23.1
Wet Reference Flowrate (Rm^3/s*) :	35.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 53
Clean Harbors Sarnia
Polychlorinated Biphenyl Congener Group Actual Concentrations

Congener Group	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/m^3	ng/m^3	ng/m^3	ng/m^3	%
Dichlorinated biphenyls	0.39	0.28	0.45	0.37	22.8
Trichlorinated biphenyls	0.60	0.21	0.30	0.37	55.9
Tetrachlorinated biphenyls	1.98	0.90	1.88	1.59	37.5
Pentachlorinated biphenyls	2.67	1.62	3.06	2.45	30.4
Hexachlorinated biphenyls	0.56	0.38	0.66	0.53	27.0
Heptachlorinated biphenyls	0.090	0.040	0.052	0.061	42.9
Octachlorinated biphenyls	0.020	0.0052	0.015	0.013	56.9
Nonachlorinated biphenyls	<0.0013	0.0040	<0.0019	<0.0024	57.5
Decachlorinated biphenyl	<0.00090	<0.00084	0.0013	<0.0010	24.4
Total	<6.32	<3.44	<6.41	<5.39	31.4

TABLE 54
Clean Harbors Sarnia
Polychlorinated Biphenyl Congener Group Dry Reference Concentrations

Congener Group	Dry Reference Concentration				Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 3	Average	
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Dichlorinated biphenyls	1.19	0.86	1.35	1.13	21.9
Trichlorinated biphenyls	1.85	0.64	0.90	1.13	56.1
Tetrachlorinated biphenyls	6.10	2.79	5.69	4.86	37.1
Pentachlorinated biphenyls	8.22	5.00	9.27	7.50	29.7
Hexachlorinated biphenyls	1.73	1.17	2.01	1.64	26.2
Heptachlorinated biphenyls	0.28	0.12	0.16	0.19	43.1
Octachlorinated biphenyls	0.062	0.016	0.044	0.041	56.9
Nonachlorinated biphenyls	<0.0040	0.012	<0.0059	<0.0074	58.2
Decachlorinated biphenyl	<0.0028	<0.0026	0.0039	<0.0031	23.4
Total	<19.4	<10.6	<19.4	<16.5	30.9

* At 25°C and 1 atmosphere

TABLE 55
Clean Harbors Sarnia
Polychlorinated Biphenyl Congener Group Dry Adjusted Concentrations

Congener Group	Dry Adjusted Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Dichlorinated biphenyls	0.99	0.69	1.09	0.92	22.6
Trichlorinated biphenyls	1.53	0.51	0.72	0.92	58.3
Tetrachlorinated biphenyls	5.06	2.22	4.58	3.95	38.4
Pentachlorinated biphenyls	6.82	3.98	7.47	6.09	30.4
Hexachlorinated biphenyls	1.44	0.93	1.62	1.33	26.8
Heptachlorinated biphenyls	0.23	0.099	0.13	0.15	45.3
Octachlorinated biphenyls	0.052	0.013	0.036	0.033	58.5
Nonachlorinated biphenyls	<0.0033	0.0098	<0.0048	<0.0060	56.5
Decachlorinated biphenyl	<0.0023	<0.0021	0.0032	<0.0025	23.0
Total	<16.1	<8.46	<15.6	<13.4	32.0

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 56
Clean Harbors Sarnia
Polychlorinated Biphenyl Congener Group Wet Reference Concentrations

Congener Group	Wet Reference Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Dichlorinated biphenyls	0.62	0.44	0.70	0.59	22.5
Trichlorinated biphenyls	0.96	0.33	0.47	0.59	56.3
Tetrachlorinated biphenyls	3.16	1.43	2.96	2.51	37.5
Pentachlorinated biphenyls	4.26	2.56	4.82	3.88	30.3
Hexachlorinated biphenyls	0.90	0.60	1.04	0.85	26.7
Heptachlorinated biphenyls	0.14	0.064	0.082	0.096	43.3
Octachlorinated biphenyls	0.032	0.0082	0.023	0.021	57.2
Nonachlorinated biphenyls	<0.0021	0.0063	<0.0031	<0.0038	57.5
Decachlorinated biphenyl	<0.0014	<0.0013	0.0020	<0.0016	24.0
Total	<10.1	<5.45	<10.1	<8.54	31.3

* At 25°C and 1 atmosphere

TABLE 57
Clean Harbors Sarnia
Polychlorinated Biphenyl Emission Rates

Congener Group	Emission Rate Test No. 1 µg/s	Test No. 2 µg/s	Test No. 3 µg/s	Average µg/s	Coefficient of Variation %
Dichlorinated biphenyls	0.021	0.016	0.025	0.020	23.5
Trichlorinated biphenyls	0.032	0.012	0.017	0.020	53.4
Tetrachlorinated biphenyls	0.11	0.050	0.11	0.088	36.9
Pentachlorinated biphenyls	0.14	0.090	0.17	0.14	30.9
Hexachlorinated biphenyls	0.030	0.021	0.037	0.030	27.7
Heptachlorinated biphenyls	0.0048	0.0022	0.0029	0.0033	40.5
Octachlorinated biphenyls	0.0011	0.00029	0.00083	0.00074	55.5
Nonachlorinated biphenyls	<0.000071	0.00022	<0.00011	<0.00013	58.1
Decachlorinated biphenyl	<0.000048	<0.000047	0.000073	<0.000056	26.3
Total	<0.34	<0.19	<0.36	<0.30	31.2

TABLE 58
Clean Harbors Sarnia
Summary of Polychlorinated Biphenyl Emission Data

Congener Group	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
Dichlorinated biphenyls	0.37	1.13	0.92	0.59	0.020
Trichlorinated biphenyls	0.37	1.13	0.92	0.59	0.020
Tetrachlorinated biphenyls	1.59	4.86	3.95	2.51	0.088
Pentachlorinated biphenyls	2.45	7.50	6.09	3.88	0.14
Hexachlorinated biphenyls	0.53	1.64	1.33	0.85	0.030
Heptachlorinated biphenyls	0.061	0.19	0.15	0.096	0.0033
Octachlorinated biphenyls	0.013	0.041	0.033	0.021	0.00074
Nonachlorinated biphenyls	<0.0024	<0.0074	<0.0060	<0.0038	<0.00013
Decachlorinated biphenyl	<0.0010	<0.0031	<0.0025	<0.0016	<0.000056
Total	<5.39	<16.5	<13.4	<8.54	<0.30

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 59
Clean Harbors Sarnia
Blank Polychlorinated Biphenyl Analyses

Congener Group	Blank Train pg	Laboratory Blank pg
Dichlorinated biphenyls	<43	<78
Trichlorinated biphenyls	<17	59.0
Tetrachlorinated biphenyls	70.9	157
Pentachlorinated biphenyls	<16	<24
Hexachlorinated biphenyls	<5.8	<5.4
Heptachlorinated biphenyls	<5.0	<7.8
Octachlorinated biphenyls	<4.2	<6.3
Nonachlorinated biphenyls	<14	<28
Decachlorinated biphenyl	<6.6	<12
Total	<183	<378

"<" indicates that the amount detected is less than the analytical detection limit (<MDL). In these cases the value of the detection limit was used to calculate the total collected.

TABLE 60
Clean Harbors Sarnia
Emission Data for Chlorobenzenes
and Related Chlorinated Compounds
Test No. 1

Specific Isomer	Total Collected ng	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
1,3-Dichlorobenzene	4080	282	867	719	449	15.2
1,4-Dichlorobenzene	801	55.4	170	141	88.1	2.98
1,2-Dichlorobenzene	796	55.0	169	140	87.6	2.96
Total Dichlorobenzene	5677	392	1206	1001	625	21.1
1,3,5-trichlorobenzene	160	11.1	34.0	28.2	17.6	0.59
1,2,4-trichlorobenzene	397	27.4	84.4	70.0	43.7	1.48
1,2,3-trichlorobenzene	160	11.1	34.0	28.2	17.6	0.59
Total Trichlorobenzene	717	49.6	152	126	78.9	2.67
1,2,3,5- & 1,2,4,5-tetrachlorobenzenes	352	24.3	74.8	62.0	38.7	1.31
1,2,3,4-tetrachlorobenzene	83.0	5.74	17.6	14.6	9.13	0.31
Total Tetrachlorobenzene	435	30.1	92.4	76.7	47.9	1.62
Pentachlorobenzene	109	7.53	23.2	19.2	12.0	0.41
Hexachlorobenzene	47.8	3.30	10.2	8.42	5.26	0.18
Total Chlorobenzenes	6986	483	1484	1231	769	26.0
Hexachlorobutadiene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Hexachloroethane	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Octachlorostyrene	<10	<0.69	<2.12	<1.76	<1.10	<0.037

Dry Gas Volume Sampled (Rm³*) :	4.706
Actual Flowrate (m³/s) :	53.8
Dry Reference Flowrate (Rm³/s*) :	17.5
Dry Adjusted Flowrate (Rm³/s**) :	21.1
Wet Reference Flowrate (Rm³/s*) :	33.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 61
Clean Harbors Sarnia
Emission Data for Chlorobenzenes
and Related Chlorinated Compounds
Test No. 2

Specific Isomer	Total Collected ng	Actual Concentration ng/m^3	Dry Reference Concentration ng/Rm^3*	Dry Adjusted Concentration ng/Rm^3**	Wet Reference Concentration ng/Rm^3*	Emission Rate µg/s
1,3-Dichlorobenzene	2610	170	524	417	269	9.43
1,4-Dichlorobenzene	581	37.8	117	92.9	59.8	2.10
1,2-Dichlorobenzene	658	42.8	132	105	67.7	2.38
Total Dichlorobenzene	3849	250	773	615	396	13.9
1,3,5-trichlorobenzene	150	9.75	30.1	24.0	15.4	0.54
1,2,4-trichlorobenzene	397	25.8	79.7	63.5	40.9	1.43
1,2,3-trichlorobenzene	188	12.2	37.7	30.1	19.4	0.68
Total Trichlorobenzene	735	47.8	148	118	75.7	2.66
1,2,3,5- & 1,2,4,5-tetrachlorobenzenes	570	37.0	114	91.1	58.7	2.06
1,2,3,4-tetrachlorobenzene	126	8.19	25.3	20.1	13.0	0.46
Total Tetrachlorobenzene	696	45.2	140	111	71.7	2.52
Pentachlorobenzene	155	10.1	31.1	24.8	16.0	0.56
Hexachlorobenzene	70.2	4.56	14.1	11.2	7.23	0.25
Total Chlorobenzenes	5505	358	1105	880	567	19.9
Hexachlorobutadiene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Hexachloroethane	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Octachlorostyrene	<10	<0.65	<2.01	<1.60	<1.03	<0.036

Dry Gas Volume Sampled (Rm^3*) :	4.981
Actual Flowrate (m^3/s) :	55.6
Dry Reference Flowrate (Rm^3/s*) :	18.0
Dry Adjusted Flowrate (Rm^3/s**) :	22.6
Wet Reference Flowrate (Rm^3/s*) :	35.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 62
Clean Harbors Sarnia
Emission Data for Chlorobenzenes
Related Chlorinated Compounds
Test No. 3

Specific Isomer	Total Collected ng	Actual Concentration ng/m^3	Dry Reference Concentration ng/Rm^3*	Dry Adjusted Concentration ng/Rm^3**	Wet Reference Concentration ng/Rm^3*	Emission Rate µg/s
1,3-Dichlorobenzene	2670	173	526	423	273	9.78
1,4-Dichlorobenzene	572	37.1	113	90.7	58.5	2.09
1,2-Dichlorobenzene	565	36.7	111	89.6	57.8	2.07
Total Dichlorobenzene	3807	247	750	604	389	13.9
1,3,5-trichlorobenzene	122	7.92	24.0	19.3	12.5	0.45
1,2,4-trichlorobenzene	311	20.2	61.2	49.3	31.8	1.14
1,2,3-trichlorobenzene	140	9.09	27.6	22.2	14.3	0.51
Total Trichlorobenzene	573	37.2	113	90.8	58.6	2.10
1,2,3,5- & 1,2,4,5-tetrachlorobenzenes	365	23.7	71.9	57.9	37.3	1.34
1,2,3,4-tetrachlorobenzene	88.7	5.76	17.5	14.1	9.07	0.32
Total Tetrachlorobenzene	454	29.5	89.3	71.9	46.4	1.66
Pentachlorobenzene	106	6.88	20.9	16.8	10.8	0.39
Hexachlorobenzene	49.0	3.18	9.65	7.77	5.01	0.18
Total Chlorobenzenes	4989	324	982	791	510	18.3
Hexachlorobutadiene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Hexachloroethane	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Octachlorostyrene	<10	<0.65	<1.97	<1.59	<1.02	<0.037

Dry Gas Volume Sampled (Rm^3*) :	5.079
Actual Flowrate (m^3/s) :	56.4
Dry Reference Flowrate (Rm^3/s*) :	18.6
Dry Adjusted Flowrate (Rm^3/s**) :	23.1
Wet Reference Flowrate (Rm^3/s*) :	35.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 63
Clean Harbors Sarnia
Actual Concentrations for Chlorobenzenes and Related Chlorinated Compounds

Specific Isomer	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/m^3	ng/m^3	ng/m^3	ng/m^3	%
1,3-Dichlorobenzene	282	170	173	208	30.6
1,4-Dichlorobenzene	55.4	37.8	37.1	43.4	23.8
1,2-Dichlorobenzene	55.0	42.8	36.7	44.8	20.8
Total Dichlorobenzene	392	250	247	297	28.0
1,3,5-trichlorobenzene	11.1	9.75	7.92	9.58	16.5
1,2,4-trichlorobenzene	27.4	25.8	20.2	24.5	15.5
1,2,3-trichlorobenzene	11.1	12.2	9.09	10.8	14.7
Total Trichlorobenzene	49.6	47.8	37.2	44.8	14.9
1,2,3,5- & 1,2,4,5-tetrachlorobenzenes	24.3	37.0	23.7	28.4	26.6
1,2,3,4-tetrachlorobenzene	5.74	8.19	5.76	6.56	21.5
Total Tetrachlorobenzene	30.1	45.2	29.5	34.9	25.6
Pentachlorobenzene	7.53	10.1	6.88	8.16	20.7
Hexachlorobenzene	3.30	4.56	3.18	3.68	20.8
Total Chlorobenzenes	483	358	324	388	21.6
Hexachlorobutadiene	<0.69	<0.65	<0.65	<0.66	3.6
Hexachloroethane	<0.69	<0.65	<0.65	<0.66	3.6
Octachlorostyrene	<0.69	<0.65	<0.65	<0.66	3.6

TABLE 64
Clean Harbors Sarnia
Dry Reference Concentrations for Chlorobenzenes and Related Chlorinated Compounds

Specific Isomer	Dry Reference Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
1,3-Dichlorobenzene	867	524	526	639	30.9
1,4-Dichlorobenzene	170	117	113	133	24.1
1,2-Dichlorobenzene	169	132	111	137	21.3
Total Dichlorobenzene	1206	773	750	910	28.3
1,3,5-trichlorobenzene	34.0	30.1	24.0	29.4	17.1
1,2,4-trichlorobenzene	84.4	79.7	61.2	75.1	16.3
1,2,3-trichlorobenzene	34.0	37.7	27.6	33.1	15.6
Total Trichlorobenzene	152	148	113	138	15.7
1,2,3,5- & 1,2,4,5-tetrachlorobenzenes	74.8	114	71.9	87.0	27.3
1,2,3,4-tetrachlorobenzene	17.6	25.3	17.5	20.1	22.2
Total Tetrachlorobenzene	92.4	140	89.3	107	26.4
Pentachlorobenzene	23.2	31.1	20.9	25.1	21.5
Hexachlorobenzene	10.2	14.1	9.65	11.3	21.5
Total Chlorobenzenes	1484	1105	982	1191	22.0
Hexachlorobutadiene	<2.12	<2.01	<1.97	<2.03	4.0
Hexachloroethane	<2.12	<2.01	<1.97	<2.03	4.0
Octachlorostyrene	<2.12	<2.01	<1.97	<2.03	4.0

* At 25°C and 1 atmosphere

TABLE 65
Clean Harbors Sarnia
Dry Adjusted Concentrations for Chlorobenzenes and Related Chlorinated Compounds

Specific Isomer	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
1,3-Dichlorobenzene	719	417	423	520	33.2
1,4-Dichlorobenzene	141	92.9	90.7	108	26.4
1,2-Dichlorobenzene	140	105	89.6	112	23.3
Total Dichlorobenzene	1001	615	604	740	30.5
1,3,5-trichlorobenzene	28.2	24.0	19.3	23.8	18.6
1,2,4-trichlorobenzene	70.0	63.5	49.3	60.9	17.3
1,2,3-trichlorobenzene	28.2	30.1	22.2	26.8	15.3
Total Trichlorobenzene	126	118	90.8	112	16.6
1,2,3,5- & 1,2,4,5-tetrachlorobenzenes	62.0	91.1	57.9	70.3	25.8
1,2,3,4-tetrachlorobenzene	14.6	20.1	14.1	16.3	20.7
Total Tetrachlorobenzene	76.7	111	71.9	86.6	24.8
Pentachlorobenzene	19.2	24.8	16.8	20.3	20.2
Hexachlorobenzene	8.42	11.2	7.77	9.14	20.1
Total Chlorobenzenes	1231	880	791	967	24.1
Hexachlorobutadiene	<1.76	<1.60	<1.59	<1.65	6.0
Hexachloroethane	<1.76	<1.60	<1.59	<1.65	6.0
Octachlorostyrene	<1.76	<1.60	<1.59	<1.65	6.0

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 66
Clean Harbors Sarnia
Wet Reference Concentrations for Chlorobenzenes and Related Chlorinated Compounds

Specific Isomer	Wet Reference Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
1,3-Dichlorobenzene	449	269	273	330	31.1
1,4-Dichlorobenzene	88.1	59.8	58.5	68.8	24.3
1,2-Dichlorobenzene	87.6	67.7	57.8	71.0	21.3
Total Dichlorobenzene	625	396	389	470	28.5
1,3,5-trichlorobenzene	17.6	15.4	12.5	15.2	16.9
1,2,4-trichlorobenzene	43.7	40.9	31.8	38.8	16.0
1,2,3-trichlorobenzene	17.6	19.4	14.3	17.1	15.0
Total Trichlorobenzene	78.9	75.7	58.6	71.1	15.3
1,2,3,5- & 1,2,4,5-tetrachlorobenzenes	38.7	58.7	37.3	44.9	26.6
1,2,3,4-tetrachlorobenzene	9.13	13.0	9.07	10.4	21.5
Total Tetrachlorobenzene	47.9	71.7	46.4	55.3	25.6
Pentachlorobenzene	12.0	16.0	10.8	12.9	20.8
Hexachlorobenzene	5.26	7.23	5.01	5.83	20.8
Total Chlorobenzenes	769	567	510	615	22.1
Hexachlorobutadiene	<1.10	<1.03	<1.02	<1.05	4.1
Hexachloroethane	<1.10	<1.03	<1.02	<1.05	4.1
Octachlorostyrene	<1.10	<1.03	<1.02	<1.05	4.1

* At 25°C and 1 atmosphere

TABLE 67
Clean Harbors Sarnia
Emission Rates for Chlorobenzenes
and Related Chlorinated Compounds

Specific Isomer	Emission Rate Test No. 1 µg/s	Test No. 2 µg/s	Test No. 3 µg/s	Average µg/s	Coefficient of Variation %
1,3-Dichlorobenzene	15.2	9.43	9.78	11.5	28.1
1,4-Dichlorobenzene	2.98	2.10	2.09	2.39	21.3
1,2-Dichlorobenzene	2.96	2.38	2.07	2.47	18.3
Total Dichlorobenzene	21.1	13.9	13.9	16.3	25.4
1,3,5-trichlorobenzene	0.59	0.54	0.45	0.53	14.2
1,2,4-trichlorobenzene	1.48	1.43	1.14	1.35	13.6
1,2,3-trichlorobenzene	0.59	0.68	0.51	0.60	14.0
Total Trichlorobenzene	2.67	2.66	2.10	2.47	13.1
1,2,3,5- & 1,2,4,5-tetrachlorobenzenes	1.31	2.06	1.34	1.57	27.1
1,2,3,4-tetrachlorobenzene	0.31	0.46	0.32	0.36	22.2
Total Tetrachlorobenzene	1.62	2.52	1.66	1.93	26.2
Pentachlorobenzene	0.41	0.56	0.39	0.45	21.0
Hexachlorobenzene	0.18	0.25	0.18	0.20	21.3
Total Chlorobenzenes	26.0	19.9	18.3	21.4	19.0
Hexachlorobutadiene	<0.037	<0.036	<0.037	<0.037	1.4
Hexachloroethane	<0.037	<0.036	<0.037	<0.037	1.4
Octachlorostyrene	<0.037	<0.036	<0.037	<0.037	1.4

TABLE 68
Clean Harbors Sarnia
Summary of Emission Data for Chlorobenzenes and Related Chlorinated Compounds

Specific Isomer	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
1,3-Dichlorobenzene	208	639	520	330	11.5
1,4-Dichlorobenzene	43.4	133	108	68.8	2.39
1,2-Dichlorobenzene	44.8	137	112	71.0	2.47
Total Dichlorobenzene	297	910	740	470	16.3
1,3,5-trichlorobenzene	9.58	29.4	23.8	15.2	0.53
1,2,4-trichlorobenzene	24.5	75.1	60.9	38.8	1.35
1,2,3-trichlorobenzene	10.8	33.1	26.8	17.1	0.60
Total Trichlorobenzene	44.8	138	112	71.1	2.47
1,2,3,5- & 1,2,4,5-tetrachlorobenzenes	28.4	87.0	70.3	44.9	1.57
1,2,3,4-tetrachlorobenzene	6.56	20.1	16.3	10.4	0.36
Total Tetrachlorobenzene	34.9	107	86.6	55.3	1.93
Pentachlorobenzene	8.16	25.1	20.3	12.9	0.45
Hexachlorobenzene	3.68	11.3	9.14	5.83	0.20
Total Chlorobenzenes	388	1191	967	615	21.4
Hexachlorobutadiene	<0.66	<2.03	<1.65	<1.05	<0.037
Hexachloroethane	<0.66	<2.03	<1.65	<1.05	<0.037
Octachlorostyrene	<0.66	<2.03	<1.65	<1.05	<0.037

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 69
Clean Harbors Sarnia
Chlorobenzene and Other Related Chlorinated Compounds
Blank Analyses

Isomers and Congener Group Totals	Lab Blank Total ng	Blank Train Total ng
1,3-Dichlorobenzene	<10	<10
1,4-Dichlorobenzene	17.4	10.3
1,2-Dichlorobenzene	<10	<10
Total Dichlorobenzene	<37.4	<30.3
1,3,5-trichlorobenzene	<10	<10
1,2,4-trichlorobenzene	<10	<10
1,2,3-trichlorobenzene	<10	<10
Total Trichlorobenzene	<30.0	<30.0
1,2,3,5- & 1,2,4,5-tetrachlorobenzenes	<10	<10
1,2,3,4-tetrachlorobenzene	<10	<10
Total Tetrachlorobenzene	<20.0	<20.0
Pentachlorobenzene	<10	<10
Hexachlorobenzene	<10	<10
Total Chlorobenzenes	<107	<100
Hexachlorobutadiene	<10	<10
Hexachloroethane	<10	<10
Octachlorostyrene	<10	<10

"<" indicates that the amount detected is less than the analytical detection limit (<MDL).
In these cases the value of the detection limit was used to calculate the total collected.

TABLE 70
Clean Harbors Sarnia
Isomer and Congener Group Analysis and Emission Data
for Chlorophenols
Test No. 1

Specific Isomer	Total Collected ng	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
2,4/2,5-dichlorophenol	1100	76.0	234	194	121	4.09
2,3-dichlorophenol	<50	<3.46	<10.6	<8.81	<5.50	<0.19
2,6-dichlorophenol	<50	<3.46	<10.6	<8.81	<5.50	<0.19
Total Dichlorophenols	<1200	<82.9	<255	<211	<132	<4.46
2,4,6-trichlorophenol	3420	236	727	603	376	12.7
2,4,5-trichlorophenol	<50	<3.46	<10.6	<8.81	<5.50	<0.19
2,3,4-trichlorophenol	<50	<3.46	<10.6	<8.81	<5.50	<0.19
3,4,5-trichlorophenol	<50	<3.46	<10.6	<8.81	<5.50	<0.19
Total Trichlorophenols	<3570	<247	<759	<629	<393	<13.3
2,3,5,6-tetrachlorophenol	<50	<3.46	<10.6	<8.81	<5.50	<0.19
2,3,4,5/2,3,4,6-tetrachlorophenol	81.2	5.61	17.3	14.3	8.93	0.30
Total Tetrachlorophenols	<131	<9.07	<27.9	<23.1	<14.4	<0.49
Pentachlorophenol	<50	<3.46	<10.6	<8.81	<5.50	<0.19
Total Chlorophenols	<4951	<342	<1052	<873	<545	<18.4

Dry Gas Volume Sampled (Rm³*) :	4.706
Actual Flowrate (m³/s) :	53.8
Dry Reference Flowrate (Rm³/s*) :	17.5
Dry Adjusted Flowrate (Rm³/s**) :	21.1
Wet Reference Flowrate (Rm³/s*) :	33.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 71
Clean Harbors Sarnia
Isomer and Congener Group Analysis and Emission Data for Chlorophenols
Test No. 2

Specific Isomer	Total Collected ng	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
2,4/2,5-dichlorophenol	2110	137	424	337	217	7.62
2,3-dichlorophenol	<50	<3.25	<10.0	<7.99	<5.15	<0.18
2,6-dichlorophenol	<50	<3.25	<10.0	<7.99	<5.15	<0.18
Total Dichlorophenols	<2210	<144	<444	<353	<228	<7.99
2,4,6-trichlorophenol	4780	311	960	764	492	17.3
2,4,5-trichlorophenol	<50	<3.25	<10.0	<7.99	<5.15	<0.18
2,3,4-trichlorophenol	<50	<3.25	<10.0	<7.99	<5.15	<0.18
3,4,5-trichlorophenol	<50	<3.25	<10.0	<7.99	<5.15	<0.18
Total Trichlorophenols	<4930	<320	<990	<788	<508	<17.8
2,3,5,6-tetrachlorophenol	<50	<3.25	<10.0	<7.99	<5.15	<0.18
2,3,4,5/2,3,4,6-tetrachlorophenol	93.9	6.10	18.9	15.0	9.67	0.34
Total Tetrachlorophenols	<144	<9.35	<28.9	<23.0	<14.8	<0.52
Pentachlorophenol	<50	<3.25	<10.0	<7.99	<5.15	<0.18
Total Chlorophenols	<7334	<477	<1472	<1173	<755	<26.5

Dry Gas Volume Sampled (Rm^3*) :	4.981
Actual Flowrate (m^3/s) :	55.6
Dry Reference Flowrate (Rm^3/s*) :	18.0
Dry Adjusted Flowrate (Rm^3/s**) :	22.6
Wet Reference Flowrate (Rm^3/s*) :	35.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 72
Clean Harbors Sarnia
Isomer and Congener Group Analysis and Emission Data for Chlorophenols
Test No. 3

Specific Isomer	Total Collected ng	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
2,4/2,5-dichlorophenol	1210	78.6	238	192	124	4.43
2,3-dichlorophenol	<50	<3.25	<9.84	<7.93	<5.11	<0.18
2,6-dichlorophenol	<50	<3.25	<9.84	<7.93	<5.11	<0.18
Total Dichlorophenols	<1310	<85.1	<258	<208	<134	<4.80
2,4,6-trichlorophenol	3150	205	620	499	322	11.5
2,4,5-trichlorophenol	<50	<3.25	<9.84	<7.93	<5.11	<0.18
2,3,4-trichlorophenol	<50	<3.25	<9.84	<7.93	<5.11	<0.18
3,4,5-trichlorophenol	<50	<3.25	<9.84	<7.93	<5.11	<0.18
Total Trichlorophenols	<3300	<214	<650	<523	<338	<12.1
2,3,5,6-tetrachlorophenol	<50	<3.25	<9.84	<7.93	<5.11	<0.18
2,3,4,5/2,3,4,6-tetrachlorophenol	55.1	3.58	10.8	8.74	5.64	0.20
Total Tetrachlorophenols	<105	<6.82	<20.7	<16.7	<10.8	<0.38
Pentachlorophenol	<50	<3.25	<9.84	<7.93	<5.11	<0.18
Total Chlorophenols	<4765	<309	<938	<755	<487	<17.5

Dry Gas Volume Sampled (Rm³*) :	5.079
Actual Flowrate (m³/s) :	56.4
Dry Reference Flowrate (Rm³/s*) :	18.6
Dry Adjusted Flowrate (Rm³/s**) :	23.1
Wet Reference Flowrate (Rm³/s*) :	35.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected (was less than the analytical detection limit), and the value of the detection limit was used to calculate the emission data.

TABLE 73
Clean Harbors Sarnia
Chlorophenol Isomer and Congener Group
Actual Concentrations

Specific Isomer	Actual Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/m³	ng/m³	ng/m³	ng/m³	%
2,4/2,5-dichlorophenol	76.0	137	78.6	97.2	35.6
2,3-dichlorophenol	<3.46	<3.25	<3.25	<3.32	3.6
2,6-dichlorophenol	<3.46	<3.25	<3.25	<3.32	3.6
Total Dichlorophenols	<82.9	<144	<85.1	<104	33.2
2,4,6-trichlorophenol	236	311	205	251	21.7
2,4,5-trichlorophenol	<3.46	<3.25	<3.25	<3.32	3.6
2,3,4-trichlorophenol	<3.46	<3.25	<3.25	<3.32	3.6
3,4,5-trichlorophenol	<3.46	<3.25	<3.25	<3.32	3.6
Total Trichlorophenols	<247	<320	<214	<260	20.9
2,3,5,6-tetrachlorophenol	<3.46	<3.25	<3.25	<3.32	3.6
2,3,4,5/2,3,4,6-tetrachlorophenol	5.61	6.10	3.58	5.10	26.3
Total Tetrachlorophenols	<9.07	<9.35	<6.82	<8.42	16.5
Pentachlorophenol	<3.46	<3.25	<3.25	<3.32	3.6
Total Chlorophenols	<342	<477	<309	<376	23.6

TABLE 74
Clean Harbors Sarnia
Chlorophenol Isomer and Congener Group
Dry Reference Concentrations

Specific Isomer	Dry Reference Concentration				Coefficient
	Test No. 1	Test No. 2	Test No. 3	Average	of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
2,4/2,5-dichlorophenol	234	424	238	299	36.3
2,3-dichlorophenol	<10.6	<10.0	<9.84	<10.2	4.0
2,6-dichlorophenol	<10.6	<10.0	<9.84	<10.2	4.0
Total Dichlorophenols	<255	<444	<258	<319	33.9
2,4,6-trichlorophenol	727	960	620	769	22.6
2,4,5-trichlorophenol	<10.6	<10.0	<9.84	<10.2	4.0
2,3,4-trichlorophenol	<10.6	<10.0	<9.84	<10.2	4.0
3,4,5-trichlorophenol	<10.6	<10.0	<9.84	<10.2	4.0
Total Trichlorophenols	<759	<990	<650	<799	21.7
2,3,5,6-tetrachlorophenol	<10.6	<10.0	<9.84	<10.2	4.0
2,3,4,5/2,3,4,6-tetrachlorophenol	17.3	18.9	10.8	15.7	27.1
Total Tetrachlorophenols	<27.9	<28.9	<20.7	<25.8	17.3
Pentachlorophenol	<10.6	<10.0	<9.84	<10.2	4.0
Total Chlorophenols	<1052	<1472	<938	<1154	24.4

* At 25°C and 1 atmosphere

TABLE 75
Clean Harbors Sarnia
Chlorophenol Isomer and Congener Group
Dry Adjusted Concentrations

Specific Isomer	Dry Adjusted Concentration Test No. 1	Test No. 2	Test No. 3	Average	Coefficient of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
2,4/2,5-dichlorophenol	194	337	192	241	34.6
2,3-dichlorophenol	<8.81	<7.99	<7.93	<8.24	6.0
2,6-dichlorophenol	<8.81	<7.99	<7.93	<8.24	6.0
Total Dichlorophenols	<211	<353	<208	<258	32.2
2,4,6-trichlorophenol	603	764	499	622	21.5
2,4,5-trichlorophenol	<8.81	<7.99	<7.93	<8.24	6.0
2,3,4-trichlorophenol	<8.81	<7.99	<7.93	<8.24	6.0
3,4,5-trichlorophenol	<8.81	<7.99	<7.93	<8.24	6.0
Total Trichlorophenols	<629	<788	<523	<647	20.6
2,3,5,6-tetrachlorophenol	<8.81	<7.99	<7.93	<8.24	6.0
2,3,4,5/2,3,4,6-tetrachlorophenol	14.3	15.0	8.74	12.7	27.1
Total Tetrachlorophenols	<23.1	<23.0	<16.7	<20.9	17.7
Pentachlorophenol	<8.81	<7.99	<7.93	<8.24	6.0
Total Chlorophenols	<873	<1173	<755	<934	23.1

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 76
Clean Harbors Sarnia
Chlorophenol Isomer and Congener Group
Wet Reference Concentrations

Specific Isomer	Wet Reference Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
2,4/2,5-dichlorophenol	121	217	124	154	35.6
2,3-dichlorophenol	<5.50	<5.15	<5.11	<5.25	4.1
2,6-dichlorophenol	<5.50	<5.15	<5.11	<5.25	4.1
Total Dichlorophenols	<132	<228	<134	<165	33.2
2,4,6-trichlorophenol	376	492	322	397	21.9
2,4,5-trichlorophenol	<5.50	<5.15	<5.11	<5.25	4.1
2,3,4-trichlorophenol	<5.50	<5.15	<5.11	<5.25	4.1
3,4,5-trichlorophenol	<5.50	<5.15	<5.11	<5.25	4.1
Total Trichlorophenols	<393	<508	<338	<413	21.0
2,3,5,6-tetrachlorophenol	<5.50	<5.15	<5.11	<5.25	4.1
2,3,4,5/2,3,4,6-tetrachlorophenol	8.93	9.67	5.64	8.08	26.6
Total Tetrachlorophenols	<14.4	<14.8	<10.8	<13.3	16.8
Pentachlorophenol	<5.50	<5.15	<5.11	<5.25	4.1
Total Chlorophenols	<545	<755	<487	<596	23.7

* At 25°C and 1 atmosphere

TABLE 77
Clean Harbors Sarnia
Chlorophenol Isomer and Congener Group
Emission Rates

Specific Isomer	Emission Rate Test No. 1 µg/s	Test No. 2 µg/s	Test No. 3 µg/s	Average µg/s	Coefficient of Variation %
2,4/2,5-dichlorophenol	4.09	7.62	4.43	5.38	36.2
2,3-dichlorophenol	<0.19	<0.18	<0.18	<0.18	1.4
2,6-dichlorophenol	<0.19	<0.18	<0.18	<0.18	1.4
Total Dichlorophenols	<4.46	<7.99	<4.80	<5.75	33.8
2,4,6-trichlorophenol	12.7	17.3	11.5	13.8	21.9
2,4,5-trichlorophenol	<0.19	<0.18	<0.18	<0.18	1.4
2,3,4-trichlorophenol	<0.19	<0.18	<0.18	<0.18	1.4
3,4,5-trichlorophenol	<0.19	<0.18	<0.18	<0.18	1.4
Total Trichlorophenols	<13.3	<17.8	<12.1	<14.4	21.0
2,3,5,6-tetrachlorophenol	<0.19	<0.18	<0.18	<0.18	1.4
2,3,4,5/2,3,4,6-tetrachlorophenol	0.30	0.34	0.20	0.28	25.3
Total Tetrachlorophenols	<0.49	<0.52	<0.38	<0.46	15.2
Pentachlorophenol	<0.19	<0.18	<0.18	<0.18	1.4
Total Chlorophenols	<18.4	<26.5	<17.5	<20.8	23.9

TABLE 78
Clean Harbors Sarnia
Summary of Emission Data
for Chlorophenol Isomer and Congener Groups

Specific Isomer	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
2,4/2,5-dichlorophenol	97.2	299	241	154	5.38
2,3-dichlorophenol	<3.32	<10.2	<8.24	<5.25	<0.18
2,6-dichlorophenol	<3.32	<10.2	<8.24	<5.25	<0.18
Total Dichlorophenols	<104	<319	<258	<165	<5.75
2,4,6-trichlorophenol	251	769	622	397	13.8
2,4,5-trichlorophenol	<3.32	<10.2	<8.24	<5.25	<0.18
2,3,4-trichlorophenol	<3.32	<10.2	<8.24	<5.25	<0.18
3,4,5-trichlorophenol	<3.32	<10.2	<8.24	<5.25	<0.18
Total Trichlorophenols	<260	<799	<647	<413	<14.4
2,3,5,6-tetrachlorophenol	<3.32	<10.2	<8.24	<5.25	<0.18
2,3,4,5/2,3,4,6-tetrachlorophenol	5.10	15.65	12.7	8.08	0.28
Total Tetrachlorophenols	<8.42	<25.8	<20.9	<13.3	<0.46
Pentachlorophenol	<3.32	<10.2	<8.24	<5.25	<0.18
Total Chlorophenols	<376	<1154	<934	<596	<20.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 79
Clean Harbors Sarnia
Chlorophenol Isomer and Congener Group
Blank Analyses

Congener Group	Lab Blank ng	Blank Train ng
2,4/2,5-dichlorophenol	<50	<50
2,3-dichlorophenol	<50	<50
2,6-dichlorophenol	<50	<50
Total Dichlorophenols	<150	<150
2,4,6-trichlorophenol	<50	<50
2,4,5-trichlorophenol	<50	<50
2,3,4-trichlorophenol	<50	<50
3,4,5-trichlorophenol	<50	<50
Total Trichlorophenols	<200	<200
2,3,5,6-tetrachlorophenol	<50	<50
2,3,4,6-tetrachlorophenol	<50	<50
Total Tetrachlorophenols	<100	<100
Pentachlorophenol	<50	<50
Total Chlorophenols	<500	<500

"<" indicates that the amount detected is less than the analytical detection limit (<MDL). In these cases the value of the detection limit was used to calculate the total collected.

TABLE 80
Clean Harbors Sarnia
Polycyclic Aromatic Hydrocarbon Emission Data
Test No. 1

Compound	Total Collected ng	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
Acenaphthene	12.8	0.88	2.72	2.26	1.41	0.048
Acenaphthylene	152	10.5	32.3	26.8	16.7	0.57
Anthracene	15.9	1.10	3.38	2.80	1.75	0.059
Benzo(a)Anthracene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Benzo(b)Fluoranthene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Benzo(k)Fluoranthene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Benzo(a)fluorene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Benzo(b)fluorene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Benzo(g,h,i)Perylene	59.6	4.12	12.7	10.5	6.56	0.22
Benzo(a)Pyrene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Benzo(e)Pyrene	22.1	1.53	4.70	3.89	2.43	0.082
Biphenyl	1190	82.3	253	210	131	4.43
2-Chloronaphthalene	56.1	3.88	11.9	9.89	6.17	0.21
Chrysene/Triphenylene	11.3	0.78	2.40	1.99	1.24	0.042
Coronene	<50	<3.46	<10.6	<8.81	<5.50	<0.19
Dibenzo(a,c/a,h)Anthracene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Dibenzo(a,e)pyrene	<50	<3.46	<10.6	<8.81	<5.50	<0.19
9,10-dimethylanthracene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
7,12-Dimethylbenzo(a)anthracene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Fluoranthene	43.5	3.01	9.24	7.67	4.79	0.16
Fluorene	41.2	2.85	8.75	7.26	4.53	0.15
Indeno(1,2,3-cd)Pyrene	11.3	0.78	2.40	1.99	1.24	0.042
2-methylanthracene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
3-Methylcholanthrene	<50	<3.46	<10.6	<8.81	<5.50	<0.19
1-Methylnaphthalene	1060	73.3	225	187	117	3.94
2-Methylnaphthalene	1050	72.6	223	185	116	3.90
1-Methylphenanthrene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
9-Methylphenanthrene	22.4	1.55	4.76	3.95	2.46	0.083
Naphthalene	16100	1113	3421	2837	1771	59.9
Perylene	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Phenanthrene	248	17.1	52.7	43.7	27.3	0.92
Picene	<50	<3.46	<10.6	<8.81	<5.50	<0.19
Pyrene	49.0	3.39	10.4	8.6	5.39	0.18
Quinoline	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Tetralin	242	16.7	51.4	42.7	26.6	0.90
m-terphenyl	<10	<0.69	<2.12	<1.76	<1.10	<0.037
o-Terphenyl	<10	<0.69	<2.12	<1.76	<1.10	<0.037
p-terphenyl	<10	<0.69	<2.12	<1.76	<1.10	<0.037
Total	<20747	<1434	<4409	<3656	<2283	<77.2

Dry Gas Volume Sampled (Rm^3*) :	4.706
Actual Flowrate (m^3/s) :	53.8
Dry Reference Flowrate (Rm^3/s*) :	17.5
Dry Adjusted Flowrate (Rm^3/s**) :	21.1
Wet Reference Flowrate (Rm^3/s*) :	33.8

* At 25°C and 1 atmosphere
** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume
Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 81
Clean Harbors Sarnia
Polycyclic Aromatic Hydrocarbon Emission Data
Test No. 2

Compound	Total Collected ng	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
Acenaphthene	11.7	0.76	2.35	1.87	1.20	0.042
Acenaphthylene	329	21.4	66.1	52.6	33.9	1.19
Anthracene	23.8	1.55	4.78	3.81	2.45	0.086
Benzo(a)Anthracene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Benzo(b)Fluoranthene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Benzo(k)Fluoranthene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Benzo(a)fluorene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Benzo(b)fluorene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Benzo(g,h,i)Perylene	117	7.60	23.5	18.7	12.0	0.42
Benzo(a)Pyrene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Benzo(e)Pyrene	44.9	2.92	9.01	7.18	4.62	0.16
Biphenyl	2900	188	582	464	299	10.5
2-Chloronaphthalene	138	8.97	27.7	22.1	14.2	0.50
Chrysene/Triphenylene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Coronene	65.8	4.28	13.2	10.5	6.77	0.24
Dibenzo(a,c/a,h)Anthracene	14.4	0.94	2.89	2.30	1.48	0.052
Dibenzo(a,e)pyrene	<50	<3.25	<10.0	<7.99	<5.15	<0.18
9,10-dimethylanthracene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
7,12-Dimethylbenzo(a)anthracene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Fluoranthene	67.9	4.41	13.6	10.9	6.99	0.25
Fluorene	29.7	1.93	5.96	4.75	3.06	0.11
Indeno(1,2,3-cd)Pyrene	26.6	1.73	5.34	4.25	2.74	0.096
2-methylanthracene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
3-Methylcholanthrene	<50	<3.25	<10.0	<7.99	<5.15	<0.18
1-Methylnaphthalene	1870	122	375	299	193	6.76
2-Methylnaphthalene	1630	106	327	261	168	5.89
1-Methylphenanthrene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
9-Methylphenanthrene	16.1	1.05	3.23	2.57	1.66	0.058
Naphthalene	30300	1969	6083	4845	3120	109
Perylene	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Phenanthrene	264	17.2	53.0	42.2	27.2	0.95
Picene	<50	<3.25	<10.04	<7.99	<5.15	<0.18
Pyrene	91.5	5.95	18.4	14.6	9.42	0.33
Quinoline	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Tetralin	200	13.0	40.2	32.0	20.6	0.72
m-terphenyl	<10	<0.65	<2.01	<1.60	<1.03	<0.036
o-Terphenyl	<10	<0.65	<2.01	<1.60	<1.03	<0.036
p-terphenyl	<10	<0.65	<2.01	<1.60	<1.03	<0.036
Total	<38450	<2499	<7719	<6148	<3959	<139

Dry Gas Volume Sampled (Rm³*) :	4.981
Actual Flowrate (m³/s) :	55.6
Dry Reference Flowrate (Rm³/s*) :	18.0
Dry Adjusted Flowrate (Rm³/s**) :	22.6
Wet Reference Flowrate (Rm³/s*) :	35.1

* At 25°C and 1 atmosphere
** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume
Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 82
Clean Harbors Sarnia
Polycyclic Aromatic Hydrocarbon Emission Data
Test No. 3

Compound	Total Collected ng	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
Acenaphthene	11.7	0.76	2.30	1.85	1.20	0.043
Acenaphthylene	195	12.7	38.4	30.9	19.9	0.71
Anthracene	30.3	1.97	5.97	4.80	3.10	0.11
Benzo(a)Anthracene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Benzo(b)Fluoranthene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Benzo(k)Fluoranthene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Benzo(a)fluorene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Benzo(b)fluorene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Benzo(g,h,i)Perylene	66.2	4.30	13.0	10.5	6.77	0.24
Benzo(a)Pyrene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Benzo(e)Pyrene	26.4	1.71	5.20	4.19	2.70	0.097
Biphenyl	1200	77.9	236	190	123	4.39
2-Chloronaphthalene	77.3	5.02	15.2	12.3	7.91	0.28
Chrysene/Triphenylene	13.9	0.90	2.74	2.20	1.42	0.051
Coronene	61.8	4.01	12.2	9.80	6.32	0.23
Dibenzo(a,c/a,h)Anthracene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Dibenzo(a,e)pyrene	<50	<3.25	<9.84	<7.93	<5.11	<0.18
9,10-dimethylanthracene	42.7	2.77	8.41	6.77	4.37	0.16
7,12-Dimethylbenzo(a)anthracene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Fluoranthene	115	7.47	22.6	18.2	11.8	0.42
Fluorene	59.8	3.88	11.8	9.48	6.12	0.22
Indeno(1,2,3-cd)Pyrene	14.4	0.94	2.84	2.28	1.47	0.053
2-methylanthracene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
3-Methylcholanthrene	<50	<3.25	<9.84	<7.93	<5.11	<0.18
1-Methylnaphthalene	1000	64.9	197	159	102	3.66
2-Methylnaphthalene	929	60.3	183	147	95.0	3.40
1-Methylphenanthrene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
9-Methylphenanthrene	24.8	1.61	4.88	3.93	2.54	0.091
Naphthalene	16500	1071	3249	2616	1688	60.4
Perylene	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Phenanthrene	654	42.5	129	104	66.9	2.40
Picene	<50	<3.25	<9.84	<7.93	<5.11	<0.18
Pyrene	100	6.49	19.7	15.9	10.2	0.37
Quinoline	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Tetralin	153	9.93	30.1	24.3	15.7	0.56
m-terphenyl	<10	<0.65	<1.97	<1.59	<1.02	<0.037
o-Terphenyl	<10	<0.65	<1.97	<1.59	<1.02	<0.037
p-terphenyl	<10	<0.65	<1.97	<1.59	<1.02	<0.037
Total	<21575	<1401	<4248	<3420	<2207	<79.0

Dry Gas Volume Sampled (Rm³*) :	5.079
Actual Flowrate (m³/s) :	56.4
Dry Reference Flowrate (Rm³/s*) :	18.6
Dry Adjusted Flowrate (Rm³/s**) :	23.1
Wet Reference Flowrate (Rm³/s*) :	35.8

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected and the value of the detection limit was used to calculate the emission data.

TABLE 83
Clean Harbors Sarnia
Polycyclic Aromatic Hydrocarbon Actual Concentrations

Compound	Actual Concentration				Coefficient
	Test No. 1	Test No. 2	Test No. 3	Average	of Variation
	ng/m^3	ng/m^3	ng/m^3	ng/m^3	%
Acenaphthene	0.88	0.76	0.76	0.80	9.0
Acenaphthylene	10.5	21.4	12.7	14.9	38.8
Anthracene	1.10	1.55	1.97	1.54	28.2
Benzo(a)Anthracene	<0.69	<0.65	<0.65	<0.66	3.6
Benzo(b)Fluoranthene	<0.69	<0.65	<0.65	<0.66	3.6
Benzo(k)Fluoranthene	<0.69	<0.65	<0.65	<0.66	3.6
Benzo(a)fluorene	<0.69	<0.65	<0.65	<0.66	3.6
Benzo(b)fluorene	<0.69	<0.65	<0.65	<0.66	3.6
Benzo(g,h,i)Perylene	4.12	7.60	4.30	5.34	36.7
Benzo(a)Pyrene	<0.69	<0.65	<0.65	<0.66	3.6
Benzo(e)Pyrene	1.53	2.92	1.71	2.05	36.8
Biphenyl	82.3	188	77.9	116	53.9
2-Chloronaphthalene	3.88	8.97	5.02	5.96	44.9
Chrysene/Triphenylene	0.78	<0.65	0.90	<0.78	16.2
Coronene	<3.46	4.28	4.01	<3.92	10.7
Dibenzo(a,c/a,h)Anthracene	<0.69	0.94	<0.65	<0.76	20.4
Dibenzo(a,e)pyrene	<3.46	<3.25	<3.25	<3.32	3.6
9,10-dimethylanthracene	<0.69	<0.65	2.77	<1.37	88.5
7,12-Dimethylbenzo(a)anthracene	<0.69	<0.65	<0.65	<0.66	3.6
Fluoranthene	3.01	4.41	7.47	4.96	46.0
Fluorene	2.85	1.93	3.88	2.89	33.8
Indeno(1,2,3-cd)Pyrene	0.78	1.73	0.94	1.15	44.3
2-methylanthracene	<0.69	<0.65	<0.65	<0.66	3.6
3-Methylcholanthrene	<3.46	<3.25	<3.25	<3.32	3.6
1-Methylnaphthalene	73.3	122	64.9	86.6	35.3
2-Methylnaphthalene	72.6	106	60.3	79.6	29.7
1-Methylphenanthrene	<0.69	<0.65	<0.65	<0.66	3.6
9-Methylphenanthrene	1.55	1.05	1.61	1.40	22.1
Naphthalene	1113	1969	1071	1385	36.6
Perylene	<0.69	<0.65	<0.65	<0.66	3.6
Phenanthrene	17.1	17.2	42.5	25.6	57.1
Picene	<3.46	<3.25	<3.25	<3.32	3.6
Pyrene	3.39	5.95	6.49	5.28	31.4
Quinoline	<0.69	<0.65	<0.65	<0.66	3.6
Tetralin	16.7	13.0	9.93	13.2	25.7
m-terphenyl	<0.69	<0.65	<0.65	<0.66	3.6
o-Terphenyl	<0.69	<0.65	<0.65	<0.66	3.6
p-terphenyl	<0.69	<0.65	<0.65	<0.66	3.6
Total	<1434	<2499	<1401	<1778	35.1

TABLE 84
Clean Harbors Sarnia
Polycyclic Aromatic Hydrocarbon Dry Reference Concentrations

Compound	Dry Reference Concentration				Coefficient
	Test No. 1	Test No. 2	Test No. 3	Average	of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Acenaphthene	2.72	2.35	2.30	2.46	9.3
Acenaphthylene	32.3	66.1	38.4	45.6	39.5
Anthracene	3.38	4.78	5.97	4.71	27.5
Benzo(a)Anthracene	<2.12	<2.01	<1.97	<2.03	4.0
Benzo(b)Fluoranthene	<2.12	<2.01	<1.97	<2.03	4.0
Benzo(k)Fluoranthene	<2.12	<2.01	<1.97	<2.03	4.0
Benzo(a)fluorene	<2.12	<2.01	<1.97	<2.03	4.0
Benzo(b)fluorene	<2.12	<2.01	<1.97	<2.03	4.0
Benzo(g,h,i)Perylene	12.7	23.5	13.0	16.4	37.5
Benzo(a)Pyrene	<2.12	<2.01	<1.97	<2.03	4.0
Benzo(e)Pyrene	4.70	9.01	5.20	6.30	37.5
Biphenyl	253	582	236	357	54.6
2-Chloronaphthalene	11.9	27.7	15.2	18.3	45.5
Chrysene/Triphenylene	2.40	<2.01	2.74	<2.38	15.3
Coronene	<10.6	13.2	12.2	<12.0	10.8
Dibenzo(a,c/a,h)Anthracene	<2.12	2.89	<1.97	<2.33	21.2
Dibenzo(a,e)pyrene	<10.6	<10.0	<9.84	<10.2	4.0
9,10-dimethylanthracene	<2.12	<2.01	8.41	<4.18	87.6
7,12-Dimethylbenzo(a)anthracene	<2.12	<2.01	<1.97	<2.03	4.0
Fluoranthene	9.24	13.6	22.6	15.2	45.0
Fluorene	8.75	5.96	11.8	8.83	32.9
Indeno(1,2,3-cd)Pyrene	2.40	5.34	2.84	3.53	45.0
2-methylanthracene	<2.12	<2.01	<1.97	<2.03	4.0
3-Methylcholanthrene	<10.6	<10.0	<9.84	<10.2	4.0
1-Methylnaphthalene	225	375	197	266	36.1
2-Methylnaphthalene	223	327	183	244	30.5
1-Methylphenanthrene	<2.12	<2.01	<1.97	<2.03	4.0
9-Methylphenanthrene	4.76	3.23	4.88	4.29	21.4
Naphthalene	3421	6083	3249	4251	37.4
Perylene	<2.12	<2.01	<1.97	<2.03	4.0
Phenanthrene	52.7	53.0	129	78.2	56.1
Picene	<10.6	<10.04	<9.84	<10.2	4.0
Pyrene	10.4	18.4	19.7	16.2	31.1
Quinoline	<2.12	<2.01	<1.97	<2.03	4.0
Tetralin	51.4	40.2	30.1	40.6	26.3
m-terphenyl	<2.12	<2.01	<1.97	<2.03	4.0
o-Terphenyl	<2.12	<2.01	<1.97	<2.03	4.0
p-terphenyl	<2.12	<2.01	<1.97	<2.03	4.0
Total	<4409	<7719	<4248	<5459	35.9

* At 25°C and 1 atmosphere

TABLE 85
Clean Harbors Sarnia
Polycyclic Aromatic Hydrocarbon Dry Adjusted Concentrations

Compound	Dry Adjusted Concentration Test No. 1 ng/Rm³*	Test No. 2 ng/Rm³*	Test No. 3 ng/Rm³*	Average ng/Rm³*	Coefficient of Variation %
Acenaphthene	2.26	1.87	1.85	1.99	11.4
Acenaphthylene	26.8	52.6	30.9	36.8	37.7
Anthracene	2.80	3.81	4.80	3.80	26.3
Benzo(a)Anthracene	<1.76	<1.60	<1.59	<1.65	6.0
Benzo(b)Fluoranthene	<1.76	<1.60	<1.59	<1.65	6.0
Benzo(k)Fluoranthene	<1.76	<1.60	<1.59	<1.65	6.0
Benzo(a)fluorene	<1.76	<1.60	<1.59	<1.65	6.0
Benzo(b)fluorene	<1.76	<1.60	<1.59	<1.65	6.0
Benzo(g,h,i)Perylene	10.5	18.7	10.5	13.2	35.8
Benzo(a)Pyrene	<1.76	<1.60	<1.59	<1.65	6.0
Benzo(e)Pyrene	3.89	7.18	4.19	5.09	35.7
Biphenyl	210	464	190	288	53.0
2-Chloronaphthalene	9.89	22.1	12.3	14.7	43.8
Chrysene/Triphenylene	1.99	<1.60	2.20	<1.93	15.9
Coronene	<8.81	10.5	9.80	<9.71	8.8
Dibenzo(a,c/a,h)Anthracene	<1.76	2.30	<1.59	<1.88	19.8
Dibenzo(a,e)pyrene	<8.81	<7.99	<7.93	<8.24	6.0
9,10-dimethylanthracene	<1.76	<1.60	6.77	<3.38	87.0
7,12-Dimethylbenzo(a)anthracene	<1.76	<1.60	<1.59	<1.65	6.0
Fluoranthene	7.67	10.9	18.2	12.3	44.2
Fluorene	7.26	4.75	9.48	7.16	33.0
Indeno(1,2,3-cd)Pyrene	1.99	4.25	2.28	2.84	43.3
2-methylanthracene	<1.76	<1.60	<1.59	<1.65	6.0
3-Methylcholanthrene	<8.81	<7.99	<7.93	<8.24	6.0
1-Methylnaphthalene	187	299	159	215	34.6
2-Methylnaphthalene	185	261	147	198	29.2
1-Methylphenanthrene	<1.76	<1.60	<1.59	<1.65	6.0
9-Methylphenanthrene	3.95	2.57	3.93	3.48	22.6
Naphthalene	2837	4845	2616	3433	35.8
Perylene	<1.76	<1.60	<1.59	<1.65	6.0
Phenanthrene	43.7	42.2	104	63.2	55.5
Picene	<8.81	<7.99	<7.93	<8.24	6.0
Pyrene	8.64	14.6	15.9	13.0	29.6
Quinoline	<1.76	<1.60	<1.59	<1.65	6.0
Tetralin	42.7	32.0	24.3	33.0	28.0
m-terphenyl	<1.76	<1.60	<1.59	<1.65	6.0
o-Terphenyl	<1.76	<1.60	<1.59	<1.65	6.0
p-terphenyl	<1.76	<1.60	<1.59	<1.65	6.0
Total	<3656	<6148	<3420	<4408	34.3

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 86
Clean Harbors Sarnia
Polycyclic Aromatic Hydrocarbon Wet Reference Concentrations

Compound	Wet Reference Concentration				Coefficient
	Test No. 1	Test No. 2	Test No. 3	Average	of Variation
	ng/Rm³*	ng/Rm³*	ng/Rm³*	ng/Rm³*	%
Acenaphthene	1.41	1.20	1.20	1.27	9.4
Acenaphthylene	16.7	33.9	19.9	23.5	38.8
Anthracene	1.75	2.45	3.10	2.43	27.8
Benzo(a)Anthracene	<1.10	<1.03	<1.02	<1.05	4.1
Benzo(b)Fluoranthene	<1.10	<1.03	<1.02	<1.05	4.1
Benzo(k)Fluoranthene	<1.10	<1.03	<1.02	<1.05	4.1
Benzo(a)fluorene	<1.10	<1.03	<1.02	<1.05	4.1
Benzo(b)fluorene	<1.10	<1.03	<1.02	<1.05	4.1
Benzo(g,h,i)Perylene	6.56	12.0	6.77	8.46	36.8
Benzo(a)Pyrene	<1.10	<1.03	<1.02	<1.05	4.1
Benzo(e)Pyrene	2.43	4.62	2.70	3.25	36.8
Biphenyl	131	299	123	184	53.9
2-Chloronaphthalene	6.17	14.2	7.91	9.43	44.8
Chrysene/Triphenylene	1.24	<1.03	1.42	<1.23	15.9
Coronene	<5.50	6.77	6.32	<6.20	10.4
Dibenzo(a,c/a,h)Anthracene	<1.10	1.48	<1.02	<1.20	20.5
Dibenzo(a,e)pyrene	<5.50	<5.15	<5.11	<5.25	4.1
9,10-dimethylanthracene	<1.10	<1.03	4.37	<2.17	88.1
7,12-Dimethylbenzo(a)anthracene	<1.10	<1.03	<1.02	<1.05	4.1
Fluoranthene	4.79	6.99	11.8	7.85	45.5
Fluorene	4.53	3.06	6.12	4.57	33.5
Indeno(1,2,3-cd)Pyrene	1.24	2.74	1.47	1.82	44.3
2-methylanthracene	<1.10	<1.03	<1.02	<1.05	4.1
3-Methylcholanthrene	<5.50	<5.15	<5.11	<5.25	4.1
1-Methylnaphthalene	117	193	102	137	35.4
2-Methylnaphthalene	116	168	95.0	126	29.8
1-Methylphenanthrene	<1.10	<1.03	<1.02	<1.05	4.1
9-Methylphenanthrene	2.46	1.66	2.54	2.22	22.0
Naphthalene	1771	3120	1688	2193	36.6
Perylene	<1.10	<1.03	<1.02	<1.05	4.1
Phenanthrene	27.3	27.2	66.9	40.5	56.6
Picene	<5.50	<5.15	<5.11	<5.25	4.1
Pyrene	5.39	9.42	10.2	8.35	31.0
Quinoline	<1.10	<1.03	<1.02	<1.05	4.1
Tetralin	26.6	20.6	15.7	21.0	26.2
m-terphenyl	<1.10	<1.03	<1.02	<1.05	4.1
o-Terphenyl	<1.10	<1.03	<1.02	<1.05	4.1
p-terphenyl	<1.10	<1.03	<1.02	<1.05	4.1
Total	<2283	<3959	<2207	<2816	35.2

* At 25°C and 1 atmosphere

TABLE 87
Clean Harbors Sarnia
Polycyclic Aromatic Hydrocarbon Emission Rates

Compound	Emission Rate				Coefficient
	Test No. 1	Test No. 2	Test No. 3	Average	of Variation
	µg/s	µg/s	µg/s	µg/s	%
Acenaphthene	0.048	0.042	0.043	0.044	6.6
Acenaphthylene	0.57	1.19	0.71	0.82	39.6
Anthracene	0.059	0.086	0.11	0.085	30.4
Benzo(a)Anthracene	<0.037	<0.036	<0.037	<0.037	1.4
Benzo(b)Fluoranthene	<0.037	<0.036	<0.037	<0.037	1.4
Benzo(k)Fluoranthene	<0.037	<0.036	<0.037	<0.037	1.4
Benzo(a)fluorene	<0.037	<0.036	<0.037	<0.037	1.4
Benzo(b)fluorene	<0.037	<0.036	<0.037	<0.037	1.4
Benzo(g,h,i)Perylene	0.22	0.42	0.24	0.30	37.4
Benzo(a)Pyrene	<0.037	<0.036	<0.037	<0.037	1.4
Benzo(e)Pyrene	0.082	0.16	0.097	0.11	37.5
Biphenyl	4.43	10.5	4.39	6.43	54.5
2-Chloronaphthalene	0.21	0.50	0.28	0.33	45.6
Chrysene/Triphenylene	0.042	<0.036	0.051	<0.043	17.3
Coronene	<0.19	0.24	0.23	<0.22	12.6
Dibenzo(a,c/a,h)Anthracene	<0.037	0.052	<0.037	<0.042	20.8
Dibenzo(a,e)pyrene	<0.19	<0.18	<0.18	<0.18	1.4
9,10-dimethylanthracene	<0.037	<0.036	0.16	<0.077	90.3
7,12-Dimethylbenzo(a)anthracene	<0.037	<0.036	<0.037	<0.037	1.4
Fluoranthene	0.16	0.25	0.42	0.28	48.0
Fluorene	0.15	0.11	0.22	0.16	35.1
Indeno(1,2,3-cd)Pyrene	0.042	0.096	0.053	0.064	45.0
2-methylanthracene	<0.037	<0.036	<0.037	<0.037	1.4
3-Methylcholanthrene	<0.19	<0.18	<0.18	<0.18	1.4
1-Methylnaphthalene	3.94	6.76	3.66	4.79	35.8
2-Methylnaphthalene	3.90	5.89	3.40	4.40	29.9
1-Methylphenanthrene	<0.037	<0.036	<0.037	<0.037	1.4
9-Methylphenanthrene	0.083	0.058	0.091	0.077	22.1
Naphthalene	59.9	109	60.4	76.6	37.2
Perylene	<0.037	<0.036	<0.037	<0.037	1.4
Phenanthrene	0.92	0.95	2.40	1.42	59.1
Picene	<0.19	<0.18	<0.18	<0.18	1.4
Pyrene	0.18	0.33	0.37	0.29	33.3
Quinoline	<0.037	<0.036	<0.037	<0.037	1.4
Tetralin	0.90	0.72	0.56	0.73	23.3
m-terphenyl	<0.037	<0.036	<0.037	<0.037	1.4
o-Terphenyl	<0.037	<0.036	<0.037	<0.037	1.4
p-terphenyl	<0.037	<0.036	<0.037	<0.037	1.4
Total	<77.2	<139	<79.0	<98.4	35.7

TABLE 88
Clean Harbors Sarnia
Summary of Polycyclic Aromatic Hydrocarbon Emission Data

Compound	Actual Concentration ng/m³	Dry Reference Concentration ng/Rm³*	Dry Adjusted Concentration ng/Rm³**	Wet Reference Concentration ng/Rm³*	Emission Rate µg/s
Acenaphthene	0.80	2.46	1.99	1.27	0.044
Acenaphthylene	14.9	45.6	36.8	23.5	0.82
Anthracene	1.54	4.71	3.80	2.43	0.085
Benzo(a)Anthracene	<0.66	<2.03	<1.65	<1.05	<0.037
Benzo(b)Fluoranthene	<0.66	<2.03	<1.65	<1.05	<0.037
Benzo(k)Fluoranthene	<0.66	<2.03	<1.65	<1.05	<0.037
Benzo(a)fluorene	<0.66	<2.03	<1.65	<1.05	<0.037
Benzo(b)fluorene	<0.66	<2.03	<1.65	<1.05	<0.037
Benzo(g,h,i)Perylene	5.34	16.4	13.2	8.46	0.30
Benzo(a)Pyrene	<0.66	<2.03	<1.65	<1.05	<0.037
Benzo(e)Pyrene	2.05	6.30	5.09	3.25	0.11
Biphenyl	116	357	288	184	6.43
2-Chloronaphthalene	5.96	18.3	14.7	9.43	0.33
Chrysene/Triphenylene	<0.78	<2.38	<1.93	<1.23	<0.043
Coronene	<3.92	<12.0	<9.71	<6.20	<0.22
Dibenzo(a,c/a,h)Anthracene	<0.76	<2.33	<1.88	<1.20	<0.042
Dibenzo(a,e)pyrene	<3.32	<10.2	<8.24	<5.25	<0.18
9,10-dimethylanthracene	<1.37	<4.18	<3.38	<2.17	<0.077
7,12-Dimethylbenzo(a)anthracene	<0.66	<2.03	<1.65	<1.05	<0.037
Fluoranthene	4.96	15.2	12.3	7.85	0.28
Fluorene	2.89	8.83	7.16	4.57	0.16
Indeno(1,2,3-cd)Pyrene	1.15	3.53	2.84	1.82	0.064
2-methylanthracene	<0.66	<2.03	<1.65	<1.05	<0.037
3-Methylcholanthrene	<3.32	<10.2	<8.24	<5.25	<0.18
1-Methylnaphthalene	86.6	266	215	137	4.79
2-Methylnaphthalene	79.6	244	198	126	4.40
1-Methylphenanthrene	<0.66	<2.03	<1.65	<1.05	<0.037
9-Methylphenanthrene	1.40	4.29	3.48	2.22	0.077
Naphthalene	1385	4251	3433	2193	76.6
Perylene	<0.66	<2.03	<1.65	<1.05	<0.037
Phenanthrene	25.6	78.2	63.2	40.5	1.42
Picene	<3.32	<10.2	<8.24	<5.25	<0.18
Pyrene	5.28	16.2	13.0	8.35	0.29
Quinoline	<0.66	<2.03	<1.65	<1.05	<0.037
Tetralin	13.2	40.6	33.0	21.0	0.73
m-terphenyl	<0.66	<2.03	<1.65	<1.05	<0.037
o-Terphenyl	<0.66	<2.03	<1.65	<1.05	<0.037
p-terphenyl	<0.66	<2.03	<1.65	<1.05	<0.037
Total	<1778	<5459	<4408	<2816	<98.4

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 89
Clean Harbors Sarnia
Blank Polycyclic Aromatic Hydrocarbon Analyses

Compound	Blank Train ng	Media Blank ng
Acenaphthene	<10	<10
Acenaphthylene	<10	<10
Anthracene	<10	<10
Benzo(a)Anthracene	<10	<10
Benzo(b)Fluoranthene	<10	<10
Benzo(k)Fluoranthene	<10	<10
Benzo(a)fluorene	<10	<10
Benzo(b)fluorene	<10	<10
Benzo(g,h,i)Perylene	<10	<10
Benzo(a)Pyrene	<10	<10
Benzo(e)Pyrene	<10	<10
Biphenyl	<10	<10
2-Chloronaphthalene	<10	<10
Chrysene/Triphenylene	<10	<10
Coronene	<50	<50
Dibenzo(a,c/a,h)Anthracene	<10	<10
Dibenzo(a,e)pyrene	<50	<50
9,10-dimethylanthracene	<10	<10
7,12-Dimethylbenzo(a)anthracene	<10	<10
Fluoranthene	<10	<10
Fluorene	<10	<10
Indeno(1,2,3-cd)Pyrene	<10	<10
2-methylanthracene	<10	<10
3-Methylcholanthrene	<50	<50
1-Methylnaphthalene	<10	<10
2-Methylnaphthalene	<10	<10
1-Methylphenanthrene	<10	<10
9-Methylphenanthrene	<10	<10
Naphthalene	63.0	34.2
Perylene	<10	<10
Phenanthrene	<10	<10
Picene	<50	<50
Pyrene	<10	<10
Quinoline	<10	<10
Tetralin	27.0	10.7
m-terphenyl	<10	<10
o-Terphenyl	<10	<10
p-terphenyl	<10	<10
Total	<610	<565

"<" indicates that the amount detected is less than the detection limit. In these cases the value of the detection limit was used to calculate the total collected.

TABLE 90
Clean Harbors Sarnia
Volatile Organic Emission Data
Test No. 1

Compound	Total Collected µg	Actual Concentration µg/m³	Dry Reference Concentration µg/Rm³*	Dry Adjusted Concentration µg/Rm³**	Wet Reference Concentration µg/Rm³*	Emission Rate mg/s
Acetone	1.75	29.8	92.2	76.5	47.3	1.61
Benzene	4.29	73.0	226	188	116	3.96
Bromodichloromethane	0.086	1.46	4.53	3.76	2.33	0.079
Bromoform	0.20	3.45	10.7	8.87	5.49	0.19
Bromomethane	1.29	22.0	68.0	56.4	34.9	1.19
2-Butanone	1.03	17.5	54.3	45.0	27.9	0.95
Carbon Tetrachloride	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Chloroform	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Cumene (Isopropylbenzene)	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Dibromochloromethane	0.19	3.20	9.91	8.22	5.08	0.17
Dichlorodifluoromethane	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
1,2-Dichloroethane	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
trans,1,2-Dichloroethene	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
1,1-Dichloroethene	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
1,2-Dichloropropane	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Ethylbenzene	0.092	1.57	4.85	4.02	2.49	0.085
Ethylene Dibromide	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Mesitylene (1,3,5-Trimethylbenzene)	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Methylene Chloride	0.065	1.11	3.43	2.84	1.76	0.060
Styrene	0.38	6.38	19.8	16.4	10.1	0.35
Tetrachloroethene	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Toluene	2.15	36.6	113	94.0	58.2	1.98
1,1,1-Trichloroethane	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Trichloroethene/1,1,2-Trichloroethene	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Trichlorotrifluoroethane	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Trichlorofluoromethane	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
M&P-Xylene	0.14	2.38	7.38	6.12	3.79	0.13
O-Xylene	0.057	0.97	3.00	2.49	1.54	0.053
Vinyl Chloride	<0.050	<0.85	<2.64	<2.19	<1.35	<0.046
Total	<12.5	<213	<660	<547	<339	<11.5

Dry Gas Volume Sampled (Rm³*) :	0.0190
Actual Flowrate (m³/s) :	54.2
Dry Reference Flowrate (Rm³/s*) :	17.5
Dry Adjusted Flowrate (Rm³/s**) :	21.1
Wet Reference Flowrate (Rm³/s*) :	34.1

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected. Any analyte that was not detected was assigned a value equal to the detection limit for calculation purposes.

TABLE 91
Clean Harbors Sarnia
Volatile Organic Emission Data
Test No. 2

Compound	Total Collected µg	Actual Concentration µg/m^3	Dry Reference Concentration µg/Rm^3*	Dry Adjusted Concentration µg/Rm^3**	Wet Reference Concentration µg/Rm^3*	Emission Rate mg/s
Acetone	3.00	50.8	158	126	80.6	2.77
Benzene	4.39	74.3	232	184	118	4.06
Bromodichloromethane	0.081	1.37	4.28	3.40	2.18	0.075
Bromoform	0.25	4.23	13.2	10.5	6.71	0.23
Bromomethane	1.58	26.7	83.4	66.3	42.4	1.46
2-Butanone	1.65	27.9	87.1	69.3	44.3	1.52
Carbon Tetrachloride	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Chloroform	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Cumene (Isopropylbenzene)	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Dibromochloromethane	0.21	3.47	10.8	8.61	5.50	0.19
Dichlorodifluoromethane	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
1,2-Dichloroethane	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
trans,1,2-Dichloroethene	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
1,1-Dichloroethene	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
1,2-Dichloropropane	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Ethylbenzene	0.10	1.69	5.28	4.20	2.69	0.092
Ethylene Dibromide	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Mesitylene (1,3,5-Trimethylbenzene)	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Methylene Chloride	0.061	1.03	3.22	2.56	1.64	0.056
Styrene	0.47	7.93	24.8	19.7	12.6	0.43
Tetrachloroethene	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Toluene	2.63	44.5	139	110	70.6	2.43
1,1,1-Trichloroethane	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Trichloroethene/1,1,2-Trichloroethene	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Trichlorotrifluoroethane	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Trichlorofluoromethane	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
M&P-Xylene	0.14	2.37	7.39	5.88	3.76	0.13
O-Xylene	0.055	0.93	2.90	2.31	1.48	0.051
Vinyl Chloride	<0.050	<0.85	<2.64	<2.10	<1.34	<0.046
Total	<15.4	<261	<813	<647	<414	<14.2

Dry Gas Volume Sampled (Rm^3*) :	0.0189
Actual Flowrate (m^3/s) :	54.6
Dry Reference Flowrate (Rm^3/s*) :	17.5
Dry Adjusted Flowrate (Rm^3/s**) :	22.0
Wet Reference Flowrate (Rm^3/s*) :	34.4

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected. Any analyte that was not detected was assigned a value equal to the detection limit for calculation purposes.

TABLE 92
Clean Harbors Sarnia
Volatile Organic Emission Data
Test No. 4

Compound	Total Collected µg	Actual Concentration µg/m³	Dry Reference Concentration µg/Rm³*	Dry Adjusted Concentration µg/Rm³**	Wet Reference Concentration µg/Rm³*	Emission Rate mg/s
Acetone	3.02	48.9	150	121	77.2	2.72
Benzene	4.25	68.8	211	170	109	3.82
Bromodichloromethane	0.08	1.36	4.17	3.36	2.15	0.076
Bromoform	0.25	4.00	12.3	9.88	6.31	0.22
Bromomethane	1.18	19.1	58.6	47.2	30.2	1.06
2-Butanone	1.40	22.7	69.6	56.0	35.8	1.26
Carbon Tetrachloride	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Chloroform	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Cumene (Isopropylbenzene)	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Dibromochloromethane	0.21	3.45	10.6	8.52	5.44	0.19
Dichlorodifluoromethane	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
1,2-Dichloroethane	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
trans,1,2-Dichloroethene	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
1,1-Dichloroethene	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
1,2-Dichloropropane	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Ethylbenzene	0.08	1.28	3.93	3.16	2.02	0.071
Ethylene Dibromide	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Mesitylene (1,3,5-Trimethylbenzene)	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Methylene Chloride	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Styrene	0.39	6.26	19.2	15.5	9.89	0.35
Tetrachloroethene	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Toluene	2.36	38.2	117	94.4	60.3	2.12
1,1,1-Trichloroethane	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Trichloroethene/1,1,2-Trichloroethene	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Trichlorotrifluoroethane	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Trichlorofluoromethane	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
M&P-Xylene	0.12	1.94	5.96	4.80	3.07	0.11
O-Xylene	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Vinyl Chloride	<0.050	<0.81	<2.49	<2.00	<1.28	<0.045
Total	<14.2	<230	<708	<569	<364	<12.8

Dry Gas Volume Sampled (Rm³*) :	0.0201
Actual Flowrate (m³/s) :	55.6
Dry Reference Flowrate (Rm³/s*) :	18.1
Dry Adjusted Flowrate (Rm³/s**) :	22.5
Wet Reference Flowrate (Rm³/s*) :	35.2

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

Note: "<" indicates that the analyte was not detected. Any analyte that was not detected was assigned a value equal to the detection limit for calculation purposes.

TABLE 93
Clean Harbors Sarnia
Volatile Organic Actual Concentrations

Compound	Actual Concentration				Coefficient
	Test No. 1	Test No. 2	Test No. 4	Average	of Variation
	µg/m^3	µg/m^3	µg/m^3	µg/m^3	%
Acetone	29.8	50.8	48.9	43.1	26.9
Benzene	73.0	74.3	68.8	72.0	4.0
Bromodichloromethane	1.46	1.37	1.36	1.40	4.1
Bromoform	3.45	4.23	4.00	3.89	10.2
Bromomethane	22.0	26.7	19.1	22.6	17.1
2-Butanone	17.5	27.9	22.7	22.7	22.9
Carbon Tetrachloride	<0.85	<0.85	<0.81	<0.84	2.7
Chloroform	<0.85	<0.85	<0.81	<0.84	2.7
Cumene (Isopropylbenzene)	<0.85	<0.85	<0.81	<0.84	2.7
Dibromochloromethane	3.20	3.47	3.45	3.37	4.4
Dichlorodifluoromethane	<0.85	<0.85	<0.81	<0.84	2.7
1,2-Dichloroethane	<0.85	<0.85	<0.81	<0.84	2.7
trans,1,2-Dichloroethene	<0.85	<0.85	<0.81	<0.84	2.7
1,1-Dichloroethene	<0.85	<0.85	<0.81	<0.84	2.7
1,2-Dichloropropane	<0.85	<0.85	<0.81	<0.84	2.7
Ethylbenzene	1.57	1.69	1.28	1.51	14.0
Ethylene Dibromide	<0.85	<0.85	<0.81	<0.84	2.7
Mesitylene (1,3,5-Trimethylbenzene)	<0.85	<0.85	<0.81	<0.84	2.7
Methylene Chloride	1.11	1.03	<0.81	<0.98	15.7
Styrene	6.38	7.93	6.26	6.86	13.6
Tetrachloroethene	<0.85	<0.85	<0.81	<0.84	2.7
Toluene	36.6	44.5	38.2	39.8	10.5
1,1,1-Trichloroethane	<0.85	<0.85	<0.81	<0.84	2.7
Trichloroethene/1,1,2-Trichloroethene	<0.85	<0.85	<0.81	<0.84	2.7
Trichlorotrifluoroethane	<0.85	<0.85	<0.81	<0.84	2.7
Trichlorofluoromethane	<0.85	<0.85	<0.81	<0.84	2.7
M&P-Xylene	2.38	2.37	1.94	2.23	11.2
O-Xylene	0.97	0.93	<0.81	<0.90	9.3
Vinyl Chloride	<0.85	<0.85	<0.81	<0.84	2.7
Total	<213	<261	<230	<235	10.3

TABLE 94
Clean Harbors Sarnia
Volatile Organic Dry Reference Concentrations

Compound	Dry Reference Concentration Test No. 1 µg/Rm³*	Test No. 2 µg/Rm³*	Test No. 4 µg/Rm³*	Average µg/Rm³*	Coefficient of Variation %
Acetone	92.2	158	150	134	27.0
Benzene	226	232	211	223	4.7
Bromodichloromethane	4.53	4.28	4.17	4.33	4.3
Bromoform	10.7	13.2	12.3	12.1	10.5
Bromomethane	68.0	83.4	58.6	70.0	17.9
2-Butanone	54.3	87.1	69.6	70.3	23.3
Carbon Tetrachloride	<2.64	<2.64	<2.49	<2.59	3.4
Chloroform	<2.64	<2.64	<2.49	<2.59	3.4
Cumene (Isopropylbenzene)	<2.64	<2.64	<2.49	<2.59	3.4
Dibromochloromethane	9.91	10.8	10.6	10.4	4.5
Dichlorodifluoromethane	<2.64	<2.64	<2.49	<2.59	3.4
1,2-Dichloroethane	<2.64	<2.64	<2.49	<2.59	3.4
trans,1,2-Dichloroethene	<2.64	<2.64	<2.49	<2.59	3.4
1,1-Dichloroethene	<2.64	<2.64	<2.49	<2.59	3.4
1,2-Dichloropropane	<2.64	<2.64	<2.49	<2.59	3.4
Ethylbenzene	4.85	5.28	3.93	4.68	14.7
Ethylene Dibromide	<2.64	<2.64	<2.49	<2.59	3.4
Mesitylene (1,3,5-Trimethylbenzene)	<2.64	<2.64	<2.49	<2.59	3.4
Methylene Chloride	3.43	3.22	<2.49	<3.04	16.2
Styrene	19.8	24.8	19.2	21.3	14.3
Tetrachloroethene	<2.64	<2.64	<2.49	<2.59	3.4
Toluene	113	139	117	123	11.1
1,1,1-Trichloroethane	<2.64	<2.64	<2.49	<2.59	3.4
Trichloroethene/1,1,2-Trichloroethene	<2.64	<2.64	<2.49	<2.59	3.4
Trichlorotrifluoroethane	<2.64	<2.64	<2.49	<2.59	3.4
Trichlorofluoromethane	<2.64	<2.64	<2.49	<2.59	3.4
M&P-Xylene	7.38	7.39	5.96	6.91	11.9
O-Xylene	3.00	2.90	<2.49	<2.80	9.8
Vinyl Chloride	<2.64	<2.64	<2.49	<2.59	3.4
Total	<660	<813	<708	<727	10.8

* At 25°C and 1 atmosphere

TABLE 95
Clean Harbors Sarnia
Volatile Organic Dry Adjusted Concentrations

Compound	Dry Adjusted Concentration				Coefficient
	Test No. 1	Test No. 2	Test No. 4	Average	of Variation
	µg/Rm³*	µg/Rm³*	µg/Rm³*	µg/Rm³*	%
Acetone	76.5	126	121	108	25.2
Benzene	188	184	170	181	5.2
Bromodichloromethane	3.76	3.40	3.36	3.51	6.3
Bromoform	8.87	10.5	9.88	9.75	8.4
Bromomethane	56.4	66.3	47.2	56.6	16.9
2-Butanone	45.0	69.3	56.0	56.8	21.4
Carbon Tetrachloride	<2.19	<2.10	<2.00	<2.09	4.5
Chloroform	<2.19	<2.10	<2.00	<2.09	4.5
Cumene (Isopropylbenzene)	<2.19	<2.10	<2.00	<2.09	4.5
Dibromochloromethane	8.22	8.61	8.52	8.45	2.4
Dichlorodifluoromethane	<2.19	<2.10	<2.00	<2.09	4.5
1,2-Dichloroethane	<2.19	<2.10	<2.00	<2.09	4.5
trans,1,2-Dichloroethene	<2.19	<2.10	<2.00	<2.09	4.5
1,1-Dichloroethene	<2.19	<2.10	<2.00	<2.09	4.5
1,2-Dichloropropane	<2.19	<2.10	<2.00	<2.09	4.5
Ethylbenzene	4.02	4.20	3.16	3.79	14.7
Ethylene Dibromide	<2.19	<2.10	<2.00	<2.09	4.5
Mesitylene (1,3,5-Trimethylbenzene)	<2.19	<2.10	<2.00	<2.09	4.5
Methylene Chloride	2.84	2.56	<2.00	<2.47	17.4
Styrene	16.4	19.7	15.5	17.2	12.9
Tetrachloroethene	<2.19	<2.10	<2.00	<2.09	4.5
Toluene	94.0	110	94.4	99.6	9.4
1,1,1-Trichloroethane	<2.19	<2.10	<2.00	<2.09	4.5
Trichloroethene/1,1,2-Trichloroethene	<2.19	<2.10	<2.00	<2.09	4.5
Trichlorotrifluoroethane	<2.19	<2.10	<2.00	<2.09	4.5
Trichlorofluoromethane	<2.19	<2.10	<2.00	<2.09	4.5
M&P-Xylene	6.12	5.88	4.80	5.60	12.6
O-Xylene	2.49	2.31	<2.00	<2.27	11.0
Vinyl Chloride	<2.19	<2.10	<2.00	<2.09	4.5
Total	<547	<647	<569	<588	8.9

* At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 96
Clean Harbors Sarnia
Volatile Organic Wet Reference Concentrations

Compound	Wet Reference Concentration				Coefficient of Variation
	Test No. 1	Test No. 2	Test No. 4	Average	
	µg/Rm³*	µg/Rm³*	µg/Rm³*	µg/Rm³*	%
Acetone	47.3	80.6	77.2	68.4	26.8
Benzene	116	118	109	114	4.3
Bromodichloromethane	2.33	2.18	2.15	2.22	4.4
Bromoform	5.49	6.71	6.31	6.17	10.1
Bromomethane	34.9	42.4	30.2	35.8	17.3
2-Butanone	27.9	44.3	35.8	36.0	22.9
Carbon Tetrachloride	<1.35	<1.34	<1.28	<1.32	3.1
Chloroform	<1.35	<1.34	<1.28	<1.32	3.1
Cumene (Isopropylbenzene)	<1.35	<1.34	<1.28	<1.32	3.1
Dibromochloromethane	5.08	5.50	5.44	5.34	4.2
Dichlorodifluoromethane	<1.35	<1.34	<1.28	<1.32	3.1
1,2-Dichloroethane	<1.35	<1.34	<1.28	<1.32	3.1
trans,1,2-Dichloroethene	<1.35	<1.34	<1.28	<1.32	3.1
1,1-Dichloroethene	<1.35	<1.34	<1.28	<1.32	3.1
1,2-Dichloropropane	<1.35	<1.34	<1.28	<1.32	3.1
Ethylbenzene	2.49	2.69	2.02	2.40	14.3
Ethylene Dibromide	<1.35	<1.34	<1.28	<1.32	3.1
Mesitylene (1,3,5-Trimethylbenzene)	<1.35	<1.34	<1.28	<1.32	3.1
Methylene Chloride	1.76	1.64	<1.28	<1.56	16.0
Styrene	10.1	12.6	9.89	10.9	13.7
Tetrachloroethene	<1.35	<1.34	<1.28	<1.32	3.1
Toluene	58.2	70.6	60.3	63.0	10.6
1,1,1-Trichloroethane	<1.35	<1.34	<1.28	<1.32	3.1
Trichloroethene/1,1,2-Trichloroethene	<1.35	<1.34	<1.28	<1.32	3.1
Trichlorotrifluoroethane	<1.35	<1.34	<1.28	<1.32	3.1
Trichlorofluoromethane	<1.35	<1.34	<1.28	<1.32	3.1
M&P-Xylene	3.79	3.76	3.07	3.54	11.5
O-Xylene	1.54	1.48	<1.28	<1.43	9.6
Vinyl Chloride	<1.35	<1.34	<1.28	<1.32	3.1
Total	<339	<414	<364	<372	10.3

* At 25°C and 1 atmosphere

TABLE 97
Clean Harbors Sarnia
Volatile Organic Emission Rates

Compound	Emission Rate				Coefficient
	Test No. 1	Test No. 2	Test No. 4	Average	of Variation
	mg/s	mg/s	mg/s	mg/s	%
Acetone	1.61	2.77	2.72	2.37	27.6
Benzene	3.96	4.06	3.82	3.95	3.0
Bromodichloromethane	0.079	0.075	0.076	0.077	3.1
Bromoform	0.19	0.23	0.22	0.21	10.8
Bromomethane	1.19	1.46	1.06	1.24	16.4
2-Butanone	0.95	1.52	1.26	1.24	23.1
Carbon Tetrachloride	<0.046	<0.046	<0.045	<0.046	1.5
Chloroform	<0.046	<0.046	<0.045	<0.046	1.5
Cumene (Isopropylbenzene)	<0.046	<0.046	<0.045	<0.046	1.5
Dibromochloromethane	0.17	0.19	0.19	0.18	5.4
Dichlorodifluoromethane	<0.046	<0.046	<0.045	<0.046	1.5
1,2-Dichloroethane	<0.046	<0.046	<0.045	<0.046	1.5
trans,1,2-Dichloroethene	<0.046	<0.046	<0.045	<0.046	1.5
1,1-Dichloroethene	<0.046	<0.046	<0.045	<0.046	1.5
1,2-Dichloropropane	<0.046	<0.046	<0.045	<0.046	1.5
Ethylbenzene	0.085	0.092	0.071	0.083	13.1
Ethylene Dibromide	<0.046	<0.046	<0.045	<0.046	1.5
Mesitylene (1,3,5-Trimethylbenzene)	<0.046	<0.046	<0.045	<0.046	1.5
Methylene Chloride	0.060	0.056	<0.045	<0.054	14.5
Styrene	0.35	0.43	0.35	0.38	13.3
Tetrachloroethene	<0.046	<0.046	<0.045	<0.046	1.5
Toluene	1.98	2.43	2.12	2.18	10.5
1,1,1-Trichloroethane	<0.046	<0.046	<0.045	<0.046	1.5
Trichloroethene/1,1,2-Trichloroethene	<0.046	<0.046	<0.045	<0.046	1.5
Trichlorotrifluoroethane	<0.046	<0.046	<0.045	<0.046	1.5
Trichlorofluoromethane	<0.046	<0.046	<0.045	<0.046	1.5
M&P-Xylene	0.13	0.13	0.11	0.12	10.1
O-Xylene	0.053	0.051	<0.045	<0.049	8.0
Vinyl Chloride	<0.046	<0.046	<0.045	<0.046	1.5
Total	<11.5	<14.2	<12.8	<12.9	10.5

TABLE 98
Clean Harbors Sarnia
Summary of Volatile Organic Emission Data

Compound	Actual Concentration µg/m³	Dry Reference Concentration µg/Rm³*	Dry Adjusted Concentration µg/Rm³*	Wet Reference Concentration µg/Rm³*	Emission Rate mg/s
Acetone	43.1	134	108	68.4	2.37
Benzene	72.0	223	181	114	3.95
Bromodichloromethane	1.40	4.33	3.51	2.22	0.077
Bromoform	3.89	12.1	9.75	6.17	0.21
Bromomethane	22.6	70.0	56.6	35.8	1.24
2-Butanone	22.7	70.3	56.8	36.0	1.24
Carbon Tetrachloride	<0.84	<2.59	<2.09	<1.32	<0.046
Chloroform	<0.84	<2.59	<2.09	<1.32	<0.046
Cumene (Isopropylbenzene)	<0.84	<2.59	<2.09	<1.32	<0.046
Dibromochloromethane	3.37	10.4	8.45	5.34	0.18
Dichlorodifluoromethane	<0.84	<2.59	<2.09	<1.32	<0.046
1,2-Dichloroethane	<0.84	<2.59	<2.09	<1.32	<0.046
trans,1,2-Dichloroethene	<0.84	<2.59	<2.09	<1.32	<0.046
1,1-Dichloroethene	<0.84	<2.59	<2.09	<1.32	<0.046
1,2-Dichloropropane	<0.84	<2.59	<2.09	<1.32	<0.046
Ethylbenzene	1.51	4.68	3.79	2.40	0.083
Ethylene Dibromide	<0.84	<2.59	<2.09	<1.32	<0.046
Mesitylene (1,3,5-Trimethylbenzene)	<0.84	<2.59	<2.09	<1.32	<0.046
Methylene Chloride	<0.98	<3.04	<2.47	<1.56	<0.054
Styrene	6.86	21.3	17.2	10.9	0.38
Tetrachloroethene	<0.84	<2.59	<2.09	<1.32	<0.046
Toluene	39.8	123	99.6	63.0	2.18
1,1,1-Trichloroethane	<0.84	<2.59	<2.09	<1.32	<0.046
Trichloroethene/1,1,2-Trichloroethene	<0.84	<2.59	<2.09	<1.32	<0.046
Trichlorotrifluoroethane	<0.84	<2.59	<2.09	<1.32	<0.046
Trichlorofluoromethane	<0.84	<2.59	<2.09	<1.32	<0.046
M&P-Xylene	2.23	6.91	5.60	3.54	0.12
O-Xylene	<0.90	<2.80	<2.27	<1.43	<0.049
Vinyl Chloride	<0.84	<2.59	<2.09	<1.32	<0.046
Total	<235	<727	<588	<372	<12.9

* At 25°C and 1 atmosphere

** At 25°C and 1 atmosphere, adjusted to 11% oxygen by volume

TABLE 99
Clean Harbors Sarnia
Blank Volatile Organic Analyses

Compound	Field Blank Tube 6A/6B µg	Trip Blank Tube 3A/3B µg	Method Blank µg
Acetone	<0.050	<0.050	<0.050
Benzene	<0.050	<0.050	<0.050
Bromodichloromethane	<0.050	<0.050	<0.050
Bromoform	<0.050	<0.050	<0.050
Bromomethane	<0.050	<0.050	<0.050
2-Butanone	<0.050	<0.050	<0.050
Carbon Tetrachloride	<0.050	<0.050	<0.050
Chloroform	<0.050	<0.050	<0.050
Cumene (Isopropylbenzene)	<0.050	<0.050	<0.050
Dibromochloromethane	<0.050	<0.050	<0.050
Dichlorodifluoromethane	<0.050	<0.050	<0.050
1,2-Dichloroethane	<0.050	<0.050	<0.050
trans,1,2-Dichloroethene	<0.050	<0.050	<0.050
1,1-Dichloroethene	<0.050	<0.050	<0.050
1,2-Dichloropropane	<0.050	<0.050	<0.050
Ethylbenzene	<0.050	<0.050	<0.050
Ethylene Dibromide	<0.050	<0.050	<0.050
Mesitylene (1,3,5-Trimethylbenzene)	<0.050	<0.050	<0.050
Methylene Chloride	<0.050	<0.050	<0.050
Styrene	<0.050	<0.050	<0.050
Tetrachloroethene	<0.050	<0.050	<0.050
Toluene	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	<0.050	<0.050	<0.050
Trichloroethene/1,1,2-Trichloroethene	<0.050	<0.050	<0.050
Trichlorotrifluoroethane	<0.050	<0.050	<0.050
Trichlorofluoromethane	<0.050	<0.050	<0.050
M&P-Xylene	<0.10	<0.10	<0.10
O-Xylene	<0.050	<0.050	<0.050
Vinyl Chloride	<0.050	<0.050	<0.050
Total	<1.50	<1.50	<1.50

Note: "<" indicates that the analyte was not detected. Any analyte that was not detected was assigned a value equal to the detection limit for calculation purposes.

APPENDIX 2

Amended ECA No. 8295-CGGLZ3
(28 pages)

Ontario

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 8295-CGGLZ3
Issue Date: September 1, 2023

Clean Harbors Canada, Inc.
4090 Telfer Rd
Corunna, Ontario
N0N 1G0

Site Location: Clean Harbors Canada Inc.
4090 Telfer Rd Corunna
St. Clair Township, County of Lambton
N0N 1G0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act*, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

- A thermal treatment system to be used for the thermal treatment of hauled industrial liquid waste venting into the atmosphere via an exhaust stack, having an exit diameter of 1.22 metres, extending 68.5 metres above grade. The Facility's maximum thermal treatment rate is 140,000 tonnes per year of Waste.

  The system consists of the following major processes and support units:

  - a refractory-lined, fixed chamber incinerator
  - a three-stage gas conditioning and cleaning system, consisting of:
    - an alkaline spray dryer
    - a powdered activated carbon injection system
    - a four compartment baghouse with an air to cloth ration of 4.1 to 1 and a total filtering area of 2790 square meters
  - incineration pre-treatment tank storage system categorized as:

        - Category 1: organic waste storage and feed tanks, equipped with nitrogen blankets for emission control and vented to the incinerator;
        - Category 2: alkaline system tanks containing process water and vented to atmosphere;
        - Category 3: acid-alkali treatment tanks, vented to a sodium hydroxide scrubber for emission control; and
        - Category 4: leachate tank, vented to the incinerator.
    - two natural gas fired package boilers
- Leachate Pretreatment System used to treat leachate from the landfill prior to it being used as quench in the incinerator

all in accordance with the Application for Approval (Air) submitted by Clean Harbors Canada, Inc., dated February 16, 2022 and signed by Michael Parker, Vice President, Canadian Environmental Compliance; and the supporting information, including the Emission Summary and Dispersion Modelling Report, submitted by GHD, dated January 28, 2022 and signed by Gordon Reusing and includes any changes to the report made up to the date of issuance of this Approval.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Acoustic Assessment Report" means the report, prepared in accordance with Publication NPC-233 submitted in support of the application, that documents all sources of noise emissions and Noise Control Measures present at the Facility. "Acoustic Assessment Report" also means the Acoustic Assessment Report prepared by GHD Limited, dated March 9, 2022 and signed by Michael Masschaele;

2. "Acoustic Audit" means an investigative procedure consisting of measurements and/or acoustic modelling of all sources of noise emissions due to the operation of the Facility, assessed to determine compliance with the Performance Limits for the Facility regarding noise emissions, completed in accordance with the procedures set in Publication NPC-103 and reported in accordance with Publication NPC-233;

3. "Acoustic Audit Report" means a report presenting the results of an Acoustic Audit, prepared in accordance with Publication NPC-233;

4. "Acoustical Consultant" means a person currently active in the field of environmental acoustics and noise/vibration control, who is familiar with Ministry noise guidelines and procedures and has a combination of formal university education, training and experience necessary to assess noise emissions from a Facility;

5. "Adverse Effect" means Adverse Effect as defined in subsection 1 (1) of the EPA;

6. "Approval" means this Environmental Compliance Approval, including the application and supporting documentation listed above;

7. "Automatic Waste Feed shut-Off (AWFSO)" is the stepwise removal of waste feed streams while maintaining flame in the primary zone using a normal amount of natural gas;

8. "Best Management Practices Plan" means a document or a set of documents which describe measures to minimize dust emissions from the Facility and/or Equipment, as updated in accordance with Condition 1 of this Approval;

9. "Company" means Clean Harbors Canada, Inc. that is responsible for the construction or operation of the Facility and includes any successors and assigns in accordance with section 19 of the EPA;

10. "Continuous Monitoring Plan" means a plan to continuously monitor and record the parameters as required by Condition 11.1;

11. "Continuous Monitoring System" means the continuous emission monitoring system described in the Continuous Monitoring Plan, consisting of continuous monitors and recording devices;

12. "Date of Commissioning" means the first day on which the Leachate Pretreatment System is used to treat leachate;

13. "Director" means a person appointed for the purpose of section 20.3 of the EPA by the Minister pursuant to section 5 of the EPA;

14. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;

15. "Quench Verification Plan" means a comprehensive verification program, which the Company shall implement to ensure that the materials used as quench do not result in an Adverse Effect, and to ensure that the Equipment is operated in accordance with the requirements in this Approval;

16. "EPA" means the *Environmental Protection Act,* R.S.O. 1990, c.E.19;

17. "Equipment" means the equipment described in the Company's application, this Approval and in the supporting documentation submitted with the application, to the extent approved by this Approval;

18. "ESDM Report" means the most current Emission Summary and Dispersion Modelling Report that describes the Facility. The ESDM Report is based on the Original ESDM Report and is updated after the issuance of this Approval in accordance with section 26 of O. Reg. 419/05 and the Procedure Document;

19. "Facility" means the entire operation located on the property where the Equipment is located;

20. "Incinerator" means the refractory-lined, fixed chamber incinerator that is part of the thermal treatment system;

21. "Independent Acoustical Consultant" means an Acoustical Consultant who is not representing the Company and was not involved in preparing the Acoustic Assessment Report or the design/implementation of Noise Control Measures for the Facility and/or Equipment. The Independent Acoustical Consultant shall not be retained by the Acoustical Consultant involved in the noise impact assessment or the design/implementation of Noise Control Measures for the Facility and/or Equipment;

22. "Leachate Pretreatment System" means the Dissolved Air Flotation system used to treat leachate from the landfill prior to it being used as quench in the incinerator;

23. "Main Stack" means the exhaust stack that discharges emissions generated during combustion of waste in the incinerator after those emissions have been treated by the gas conditioning and cleaning system;

24. "Manager" means the Manager, Technology Standards Section, Technical Assessment and Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Technology Standards Section, Technical Assessment and Standards Development Branch, as those duties relate to the conditions of this Approval;

25. "Manual" means a document or a set of documents that provide written instructions to staff of the Company;

26. "Ministry" means the ministry of the government of Ontario responsible for the EPA and includes all officials, employees or other persons acting on its behalf;

27. "Monitoring Contaminants" means the contaminants listed in Schedule E;

28. "Noise Control Measures" means measures to reduce the noise emission from the Facility and/or Equipment including, but not limited to silencers, acoustic louvres, enclosures, absorptive treatment, plenums and barriers. It also means the noise control measures outlined in section 6 of the Acoustic Assessment Report;

29. "Noise Guidelines for Landfill Sites" means Ministry draft publication Noise Guidelines for Landfill Sites, October 1998, as amended;

30. "O. Reg. 347' means Ontario Regulation 347, R.R.O. 1990, as amended;

31. "Pre-Test Plan" means a plan for the Source Testing including the information required in Section 5 of the Source Testing Code;

32. "Procedure Document" means Ministry guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated February 2017, as amended;

33. "Publication NPC-103" means the Ministry Publication NPC-103 of the Model Municipal Noise Control By-Law, Final Report, August 1978, published by the Ministry as amended;

34. "Publication NPC-233" means the Ministry Publication NPC-233, Information To Be Submitted For Approval of Stationary Sources Of Sound, October, 1995, as amended;

35. "Publication NPC-300" means the Ministry Publication NPC-300, " Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300", August, 2013, as amended;

36. "Schedules" means the following schedules attached to this Approval and forming part of this Approval namely:

- Schedule A - Targeted Sources for Source Testing
- Schedule B - Test Contaminants for Source Testing
- Schedule C - Source Testing Procedures
- Schedule D - Dioxins, Furans and Dioxin-like PCBs (Polychlorinated Biphenyls)
- Schedule E - Air Quality Monitoring Program Contaminants and Sampling Frequency

37. "Source Testing" means site-specific sampling and testing to measure emissions resulting from operating the Targeted Sources under operating conditions that will derive an emission rate that, for the relevant averaging period of the contaminant, is at least as high as the maximum emission rate that the source of contaminant is reasonably capable of, or a rate approved by the Manager, within the approved operating range of the Targeted Sources which satisfies paragraph 1 of subsection 11(1) of O. Reg. 419/05;

38. "Source Testing Code" means the Ontario Source Testing Code, dated June 2010, prepared by the Ministry, as amended;

39. "Targeted Sources" means the sources listed in Schedule A;

40. "Test Contaminants" means the contaminants listed in Schedule B;

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. **OPERATION AND MAINTENANCE**

1. The Company shall ensure that the Equipment is properly operated and maintained at all times. The Company shall:

   a. prepare, before commencement of operation of the Equipment, and update, as necessary, a Manual outlining the operating procedures and a maintenance program for the Equipment, including:

      i. routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;

      ii. emergency procedures, including spill clean-up procedures;

      iii. procedures for any record keeping activities relating to operation and maintenance of the Equipment;

      iv. all appropriate measures to minimize noise and odorous emissions from all potential sources.

   b. implement the recommendations of the Manual.

2. The Company shall implement and maintain Best Management Practices Plans for the control of fugitive dust, noise and odour emissions resulting from the operation of the Facility. The Company shall update the Best Management Practices Plan as necessary or at the direction of the District Manager.

3. The organic waste storage and feed tanks shall be equipped with nitrogen blankets for emission control and vented to the incinerator. Supplementary carbon bed scrubbers shall be used during periods when the incinerator is off-line.

4. The leachate storage tank shall be vented to the incinerator. Supplementary carbon bed scrubbers shall be used during periods when the incinerator is off-line.

5. The acid-alkali treatment tanks shall be vented to a sodium hydroxide scrubber at all times when the tanks are in use. The Company shall ensure that the sodium hydroxide scrubber is operated in a manner such that the control efficiency is at least 99 percent for all contaminants emitted during the operation of the tanks.

2. RECORD RETENTION

1. The Company shall retain, for a minimum of two (2) years from the date of their creation, all records and information related to or resulting from the recording activities required by this Approval, and make these records available for review by staff of the Ministry upon request. The Company shall retain:

a. all records on the maintenance, repair and inspection of the Equipment; and

b. all records of any environmental complaints, including:

i. a description, time and date of each incident to which the complaint relates;

ii. wind direction at the time of the incident to which the complaint relates; and

iii. a description of the measures taken to address the cause of the incident to which the complaint relates and to prevent a similar occurrence in the future.

3. NOTIFICATION OF COMPLAINTS

1. The Company shall notify the Ministry's Spills Action Centre of each environmental complaint within two (2) business days of the complaint. The notification shall include:

a. a description of the nature of the complaint; and

b. the time and date of the incident to which the complaint relates.

4. OPERATIONAL LIMITS

1. The Company shall optimize the operation of the thermal treatment system by establishing appropriate waste feed mix scenarios to accommodate the variability of heating values encountered with the types of wastes that may be incinerated.

2. The Company shall establish, in consultation with the District Manager and acceptable to the Director, an Operational Window for operation of the thermal treatment system to ensure compliance with Condition 4 and 5 of this Approval, and the requirements of O.Reg. 419/05.

3. The Company shall, at all times, operate the thermal treatment system within the Operational Window.

4. The Company shall ensure that the combined feed of all waste streams does not exceed 245 litres per minute.

5. Combined wastes fed into the incinerator shall not contain more than 2 percent of organic chlorine by weight.

6. The Company shall ensure that the temperature of the gas in the primary combustion zone is not less than 1300 degrees Celsius during waste feed;

7. The Company shall ensure that the temperature of the gas at the exit of the incinerator is not less than 800 degrees Celsius during waste feed;

8. The Company shall ensure that the temperature of the gas at the spray dryer outlet does not exceed 220 degrees Celsius during waste feed;

9. The Company shall ensure that the pressure, as measured near the exit of the incinerator does not exceed 25 millimetres of water column for more than 5 seconds during waste feed.

10. The Company shall ensure that the fifteen (15) minute rolling average powdered activated carbon feed into the incinerator is not less than 9 kilograms per hour during waste feed.

5. PERFORMANCE LIMITS

1. The Company shall, at all times, operate the thermal treatment system in such a manner as to ensure that the following:

    a. The concentration of organic matter having a carbon content, expressed as equivalent methane, in the Main Stack expressed as a ten minute block average, shall be not more than 100 parts per million by volume on dry basis normalized to 11 percent oxygen at a reference temperature of 25 degrees Celsius and a reference pressure of 101.3 kilopascals.

    b. The one hour block average concentration of carbon monoxide in the Main Stack shall be not more than 100 parts per million by volume on dry basis normalized to 11 percent oxygen at a reference temperature of 25 degrees Celsius and a reference pressure of 101.3 kilopascals, or 110 milligrams per dry cubic meters normalized to 11 percent oxygen at a reference temperature of 25 degrees Celsius and a reference pressure of 101.3 kilopascals.

    c. The residual oxygen concentration in the stack, expressed as a 10-minute rolling average, shall be not less than 7 percent by volume on dry basis.

    d. The opacity at the exit of the Main Stack shall be not more than:

        i. 5 percent, calculated on a 2 hour rolling average; and

        ii. 20 percent, calculated on a 6 minute rolling average.

    e. The concentration of suspended particulate matter in the Main Stack shall be not more than 20 milligrams per dry cubic meters normalized to 11 percent oxygen at a reference temperature of 25 degrees Celsius and a reference pressure of 101.3 kilopascals.

    f. The toxicity equivalent concentration of dioxins and furans in the gases of the Main Stack shall be not more than 80 picograms per dry cubic meter normalized to 11 percent oxygen at a reference temperature of 25 degrees Celsius and a reference pressure of 101.3 kilopascals.

        i. The toxicity equivalent concentration of dioxins and furans shall be calculated in accordance with the International Scheme set out in Schedule D of the Approval.

g. The concentration of mercury in the gases of the Main Stack shall not be more than 50 micrograms per dry cubic meters normalized to 11 percent oxygen at a reference temperature of 25 degrees Celsius and a reference pressure of 101.3 kilopascals.

h. Concentration limits for Conditions 5.1.e, f and g are to be confirmed through Source Testing

6. QUENCH

1. The following liquids may be used as quench to cool the on-site incinerator:

    a. potable water from the municipal water system;

    b. stormwater generated on the Site;

    c. process water generated at the Site;

    d. effluent from the Leachate Pretreatment System; and

    e. non-hazardous industrial water received from off-site generators.

2. The maximum amount of effluent from the Leachate Pretreatment System that may be used as quench is 100 litres per minute.

3. Non-hazardous industrial water received from off-site generators. must:

    a. be liquid industrial waste which are not hazardous or odourous;

    b. have a pH between 5.5 to 10.5;

    c. have total suspended solids (TSS) less than 350 milligrams per litre;

    d. have total organic carbon (TOC) 500 milligrams per litre;

    e. have phenols less than 1.0 milligrams per litre;

    f. have metals less than O. Reg. 347, Schedule 4; and

    g. solvent extractable (oil and grease) less than 200 milligrams per litre.

4. The use of non-hazardous industrial water received from an off-site generator shall not be used unless the volume of on-site process water is less than 1 million litres.

5. Prior to being used as quench, effluent from the Leachate Pretreatment System and the non-hazardous industrial water must meet the requirements of the Quench Verification Plan.

6. Commencing the Date of Commissioning, the Company shall prepare and retain on site, and make available for review by staff of the Ministry upon request, a monthly report providing a summary of the operation of the Leachate Pretreatment System, which includes, as a minimum, the following:

    a. daily amounts of leachate treated and used as quench;

    b. the results of analytical testing for incoming leachate and treated effluent; and

    c. a list of times when the pretreatment system was not operational and the reason.

7. LEACHATE PRETREATMENT SYSTEM

1. Commissioning Period

a. Company shall develop a Commissioning Plan in consultation with and acceptable to the District Manager and the Director.

b. During the commissioning of the leachate treatment system the company shall analyze the influent and effluent for total suspended solids, volatile suspended solids, total organic carbon, oil and grease, phenols, volatile organic compounds, semi-volatile organic compounds, and metals.

c. The Company shall not use the effluent for quench unless Condition 7.1.b has been completed, and it can be demonstrated that the use of the effluent should not cause an Adverse Effect.

d. The Company shall complete Source Testing on the target source at the completion of the commission period or within six months of the date of the approval (which ever comes sooner).

e. Source testing for Condition 7.1.d shall be completed while treated effluent is used as quench at the maximum rate that the unit is capable of or a rate approved by the Manager.

f. The Company shall provide the Ministry a Report on the results of the commissioning period. The report shall include, but not be limited to:

    i. Summary of the findings during the commissioning of the treatment system;

    ii. Final proposed design of the treatment system;

    iii. Monitoring data from the Continuous Monitoring System and trend analysis for the periods when treated effluent was used as quench;

iv. Results of the Compliance Source testing including an updated ESDM Report;

v. The proposed Quench Verification Plan.

2. Quench Verification Plan

a. The Company shall develop, in consultation with and acceptable to the District Manager, a Quench Verification Plan for the operation of the Leachate Pretreatment System and for the use of non-hazardous industrial water as quench.

b. The Quench Verification Plan shall be developed during the commissioning of the Leachate Pretreatment System.

c. The Quench Verification Plan shall, at a minimum, require the Company to:

i. record the date, time, quantity, and amounts of the following:

A. leachate treated;

B. treated effluent used as quench; and

C. non-hazardous industrial water used as quench

ii. identify the criteria and maximum allowable composition for the quench liquid prior to being used as quench;

iii. identify the analytical methodology and sampling frequency for the parameters identified by Condition 7.2.c.ii;

iv. ensure that the quench meets the parameters identified by Condition 7.2.c.ii prior to being used as quench;

v. Keep records of all laboratory analysis for the leachate, treated effluent and non-hazardous industrial water. These results shall, at minimum, include:

A. a list of the individual contaminants and criteria tested and their measured concentrations;

d. The Company shall submit the Quench Verification Plan to the Director and the District Manager not later than ninety (90) days after the Date of Commissioning.

e. If the Quench Verification Plan is not accepted by the Director, the Company shall submit a Quench Verification Plan acceptable to the Director not later than three (3) months after the date of this Approval;

f. Upon acceptance of the Quench Verification Plan by the Director, the Company shall immediately implement the Quench Verification Plan.

g. The Company shall not make changes to the Quench Verification Plan, unless changes are requested in writing by the District Manager or proposed changes are accepted in writing by the District Manager. The Company shall submit the Quench Verification Plan, incorporating the changes, to the Director and the District Manager, not later than thirty (30) days from the date of the District Manager's request to make changes, or from the date of the District Manager's acceptance of the proposed changes, to the Quench Verification Plan.

3. Three (3) years from the date of this Approval the Company shall submit an application for review of the Approval.

8. AUTOMATIC WASTE SHUT-OFF

1. Automatic Waste Feed Shut-Off shall be employed if any of the following conditions occur during waste feeds:

   a. primary combustion zone temperature is below 1300 degrees Celsius over a ten minute rolling average;

   b. temperature of the gas at the exit of the incinerator is below 800 degrees Celsius over a ten minute rolling average;

   c. spray dryer temperature exceeds 220 degrees Celsius over a 10 minute rolling average;

   d. total waste feed exceeds 245 litres per minute;

   e. the concentration of organic matter having a carbon content, expressed as equivalent methane, exceeds 100 parts per million over a ten minute block average;

   f. the concentration of carbon monoxide in the Main Stack over a one hour block average exceeds 100 parts per million by volume on dry basis normalized to 11 percent oxygen at a reference temperature of 25 degrees Celsius and a reference pressure of 101.3 kilopascals, or 110 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25 degrees Celsius and a reference pressure of 101.3 kilopascals;

   g. the residual oxygen concentration in the stack is less than 7 percent by volume on dry basis over a ten minute block average;

   h. the powdered activated carbon feed into the incinerator is less than 9 kilograms per hour over a fifteen minute rolling average;

i. pressure measured near the exit of the incinerator exceeds 25 millimetres of water column for more than 5 seconds;

j. The opacity at the exit of the Main Stack exceeds:

   i. 5 percent, calculated on a 2 hour rolling average; and

   ii. 20 percent, calculated on a 6 minute rolling average.

k. alkaline / lime slurry feed to the spray dryer is lost.

9. SOURCE TESTING

1. The Company shall perform Source Testing in accordance with the procedures in Schedule C to determine the rates of emissions of the Test Contaminants from the Targeted Sources listed in Schedule A, within six (6) months from the date of this Approval. Source testing shall be repeated as listed in Schedule A.

10. AIR QUALITY MONITORING PROGRAM

1. The Company shall implement and maintain an ambient air quality monitoring program for the non-continuous ambient air quality monitoring of the Monitoring Contaminants. Monitoring frequency shall be in accordance with the minimum frequency as listed in Schedule E.

2. The Company shall ensure that the ambient air quality monitoring program meets the requirements set out in the Operations Manual for Air Quality Monitoring in Ontario, dated January 2018, as amended.

3. The ambient air quality monitoring program shall include a minimum of two (2) monitoring locations that meet the siting criteria as specified in the Operations Manual for Air Quality Monitoring in Ontario, dated January 2018, as amended.

4. The Company shall submit an ambient air quality monitoring plan to the District Manager not later than ninety (90) days after the date of this Approval.

5. If the District Manager does not accept the ambient air quality monitoring plan, the District Manager may require the Company to revise and re-submit the ambient air quality monitoring program.

6. The Company shall implement the ambient air quality monitoring program as approved by the District Manager immediately.

7. All aspects of the ambient air quality program are subject to audit at any time by Ministry designated personnel.

8. No later than April 1 in each year, the Company shall submit to the District Manager a written report summarizing the results of the air quality monitoring program in accordance with the Operations Manual for Air Quality Monitoring in Ontario, as amended, prepared by a Professional Engineer.

11. CONTINUOUS MONITORING

1. The Company shall, prior to the commencement of operation of the Equipment, install and subsequently conduct and maintain a Continuous Monitoring System to continuously monitor:

   a. Opacity;

   b. Concentrations of: sulphur dioxide, hydrogen chloride, total hydrocarbons (THC), carbon monoxide and oxygen, emitted from the Main Stack;

   c. Feed rates to the incinerator, temperatures in the incinerator primary zone, temperatures in the secondary zone, temperatures in the quench zone, incinerator exit temperature, incinerator exit pressure, exit spray dryer temperature, stack gas temperature and stack gas flow;

2. Continuous emission monitoring equipment and process monitoring equipment for parameters listed in Condition 11.1 shall be equipped with continuous recording devices and with the appropriate alarms for indication of exceedances of set points where applicable;

3. Audible and/or visible alarms, as monitored in the control room, indicating exceedances of set points will be activated at the values specified in listed in Conditions 4 and 5 of this Approval;

4. The Company shall develop, not later than six (6) months from the date of this Approval, a Continuous Monitoring Plan, complete with specifications for the Continuous Monitoring System and continuous recording devices.

5. The Continuous Monitoring Plan shall include a description of, but not be limited to:

   a. source and air pollutants / parameters requiring continuous monitoring and associated targets / in-stack limits,

   b. sample probe and gas calibration port location(s) and associated flue gas conditions,

   c. sample extraction, transport and conditioning system,

   d. analyzer performance specifications,

   e. calibration strategies,

   f. relative accuracy and reference method for test audit,

g. performance indicators and monitoring frequency,

h. communication protocol(s) and corrective action(s) regarding malfunctions,

i. preventative maintenance and spare parts,

j. service contractor and staff responsibilities including training,

k. other operating and maintenance procedures as applicable,

l. data acquisition system, and

m. data verification procedures.

6. The Continuous Monitoring System shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time for each calendar quarter during the first full year of operation, and 95 percent, thereafter, when waste is being treated.

12. ANNUAL INSPECTION

1. The Company shall conduct, at least once every calendar year, an inspection of the thermal treatment system. The inspection shall include a physical inspection of the following:

   1. incinerator, including all associated:

      a. burners;

      b. nozzles;

      c. fans;

      d. pumps;

      e. waste feed systems

      f. combustion air supply systems.

   2. three stage gas conditioning and cleaning system

   3. incineration pre-treatment tank storage system and associated controls

   4. continuous monitoring system and data acquisition systems

2. The inspection shall be completed in accordance with good engineering practices and as recommended by the equipment manufacturer, by a person who has received training for the purposes of conducting such inspections.

3. The Company shall ensure that the following records are created and retained at the facility for a period of five (5) years from the date of its creation:

    a. a record of each inspection, including the date of the inspection, results of the inspection and any maintenance activities or modifications performed as a result of the inspection.

13. NOISE

1. The Company shall:

    a. implement by not later than thirty six (36) months from the date of this Approval, the Noise Control Measures outlined in section 6 of the Acoustic Assessment Report;

    b. ensure, subsequent to the implementation of the Noise Control Measures that the noise emissions from the Facility comply with the limits set in Ministry Publication NPC-300; and

    c. ensure that the Noise Control Measures are properly maintained and continue to provide the acoustical performance outlined in the Acoustic Assessment Report.

2. The Company shall ensure that the noise emissions from the landfill site operations at the Facility comply with the limits set in Noise Guidelines for Landfill Sites.

14. ACOUSTIC AUDIT

1. The Company shall carry out Acoustic Audit measurements on the actual noise emissions due to the operation of the Facility. The Company:

    a. shall carry out Acoustic Audit measurements in accordance with the procedures in Publication NPC-103;

    b. shall submit an Acoustic Audit Report on the results of the Acoustic Audit, prepared by an Independent Acoustical Consultant, in accordance with the requirements of Publication NPC-233, to the District Manager and the Director, not later than twelve (12) months after the full implementation of the Noise Control Measures.

2. The Director:

    a. may not accept the results of the Acoustic Audit if the requirements of Publication NPC-233 were not followed.

b. may require the Company to repeat the Acoustic Audit if the results of the Acoustic Audit are found unacceptable to the Director.

SCHEDULE A

Targeted Sources for Source Testing:

Targeted Source	Test Contaminants	Retesting schedule
Thermal treatment system	Schedule B	Annually
Thermal treatment system	Mercury	Once every four months

SCHEDULE B

Test Contaminants for Source Testing:

Hydrogen chloride

Hydrogen fluoride

Oxygen

Carbon monoxide

Carbon dioxide

Oxides of nitrogen

Total suspended particulate matter

<u>Metals</u>

Metals		
Aluminum	Iron	Silicon
Antimony	Lead	Silver
Arsenic	Lithium	Sodium
Barium	Magnesium	Strontium
Beryllium	Manganese	Sulfur
Boron	Mercury	Tin
Cadmium	Molybdenum	Titanium
Calcium	Nickel	Vanadium
Chromium	Phosphorous	Zinc
Cobalt	Potassium	
Copper	Selenium	

POLYCYCLIC ORGANIC MATTER

POLYCYCLIC ORGANIC MATTER		
Acenaphthylene	Coronene	9-methylphenanthrene
Acenaphthene	Dibenzo(a,c)anthracene	napthalene
Anthracene	Dibenzo(a,h)anthracene	Perylene
Benzo(a)anthracene	9,10-dimehtylanthracene	Phenanthrene
Benzo(b)fluoranthene	7,12-dimethylbenzo(a)anthracene	Picene
Benzo(k)fluoranthene	Fluoranthrene	Pyrene
Benzo(a)fluorene	Fluorene	Tetralin
Benzo(b)fluorene	Indeno(1,2,3-cd)pyrene	Dibenzo(a,e)pyrene
Benzo(g,h,i)perylene	2-methylanthracene	Quinoline
Benzo(a)pyrene	3-methylcholanthrene	Biphenyl
Benzo(e)pyrene	1-methylnapthalene	o-terphenyl
2-chloronaphthalene	2-methylnaphthalene	m-terphenyl
Chrysene + triphenylene	1-methylphenanthrene	p-terphenyl

VOLATILE ORGANIC MATTER

VOLATILE ORGANIC MATTER		
Acetone	Dichlorodifluoromethane	Tetrachloroethene
Benzene	Dichloroethane, 1,2-	Toluene
Bromodichloromethane	Dichloroethene, trans- 1,2-	Trichloroethane, 1,1,1-
Bromoform	Dichloroethene, 1,1-	Trichloroethene
Bromomethane	Dichloropropane, 1,2-	Trichlorofluoromethane
Butanone, 2-	Ethylbenzene	Trichlorotrifluoroethane
Carbon tetrachloride	Ethylene dibromide	Vinyl chloride
Chloroform	1,3,5 trimethyl benzene (mesitylene)	Xylenes, m-, p- and o-
Cumene (isopropyl benzene)	Methylene chloride	
Dibromochloromethane	Styrene	

CHLORINATED ORGANICS

Total dichlorobenzenes

Total trichlorobenzenes (1,3,5-; 1,2,3-; 1,2,4-)

Total tetrachlorobenzenes (1,2,4,5-; 1,2,3,5-)

Pentachlorobenzene

Hexachlorobenzene

Total dichlorophenols (2,3-; 2,4-; and 2,6-)

Total trichlorophenols (2,3,4-; 2,4,5-; 2,4,6-; 3,4,5-)

Total tetrachlorophenols (2,3,4,6-; 2,3,5,6-)

Total pentachlorophenols

Total polychlorinated biphenyls c/w congeners (di, tri, tetra, penta, hexa, hepta, octa, nona and deca-chlorobiphenyls)

Polychlorinated dibenzo-p-dioxins, and polychlorinated dibenzofurans as listed in Schedule D.

Octachlorostyrene

Hexachlorobutadiene

Hexachloroethane

SCHEDULE C

Source Testing Procedures

1. The Company shall submit, not later than three (3) months prior to the Source Testing, to the Manager a Pre-Test Plan for the Source Testing required under this Approval. The Company shall finalize the Pre-Test Plan in consultation with the Manager.

2. The Company shall not commence the Source Testing required under this Approval until the Manager has approved the Pre-Test Plan.

3. The Company shall notify the Manager, the District Manager and the Director in writing of the location, date and time of any impending Source Testing required by this Approval, at least fifteen (15) days prior to the Source Testing.

4. The Company shall submit a report (electronic format) on the Source Testing to the Manager, the District Manager and the Director not later than three (3) months after completing the Source Testing. The report shall be in the format described in the Source Testing Code, and shall also include, but not be limited to:
   1. an executive summary;
   2. an identification of the applicable North American Industry Classification System code (NAICS) for the Facility;
   3. records of operating conditions at the time of Source Testing, including but not limited to the following:
      a. production data and equipment operating rate as a percentage of maximum capacity;
      b. Facility/process information related to the operation of the Targeted Sources;
      c. records of all operating conditions, including waste feed rates and types, as well as all operational problems that may have been encountered during the Source Testing;
      d. the quantity of leachate processed in the Leachate Pretreatment System, and amount of effluent used as quench during the testing;
      e. all analytical data for the leachate and treated effluent collected during the Source Testing;
   4. results of Source Testing, including the emission rate, emission concentration, and relevant emission factor of the Test Contaminants from the Targeted Sources;
   5. a tabular comparison of calculated emission rates and emission factors based on Source Testing results for the Test Contaminants to relevant estimates described in the ESDM Report, and,

5. The Director may not accept the results of the Source Testing if:

1. the Source Testing Code or the requirement of the Manager were not followed;
2. the Company did not notify the Manager, the District Manager and Director of the Source Testing; or
3. the Company failed to provide a complete report on the Source Testing.

6. If the Director does not accept the result of the Source Testing, the Director may require re-testing. If re-testing is required, the Pre-Test Plan strategies need to be revised and submitted to the Manager for approval. The actions taken to minimize the possibility of the Source Testing results not being accepted by the Director must be noted in the revision.

7. The Company shall update their ESDM Report in accordance with Section 26 of O. Reg. 419/05 and the Procedure Document with the results from the Source Testing, if any of the calculated emission factors or calculated emission rates are higher than the predicted rates in the ESDM report, not later than three (3) months after the submission of the Source Testing report and make these records available for review by staff of the Ministry upon request.

SCHEDULE D

Dioxins, Furans and Dioxin-like PCBs (Polychlorinated Biphenyls)

Toxicity equivalency factors (TEFs) are applied to 29 isomers of dioxins, furans and dioxin-like PCBs to convert them into 2,3,7,8-CDD (tetrachlorodibenzo-p-dioxin) toxicity equivalents. The conversion involves multiplying the concentration of each isomer by the appropriate TEF to yield the TEQ for this isomer. Summing the individual TEQ values for each of the isomers provides the total toxicity equivalent level for the sample mixture.

A table listing the 29 isomers and their TEFs can be found in the MECP publication titled: Summary of Standards and Guidelines to Support Ontario Regulation 416-05 – Air Pollution - Local Air Quality, PIBS 6569e01 dated April 2012 noted below.

No.	Dioxins, Furans, and Dioxin-like PCBs	CASRN	WHO_{2005} Toxic Equivalency Factors [TEFs]
1	2,3,7,8-Tetrachlorodibenzo-p-dioxin [2,3,7,8-TCDD]	1746-01-6	1
2	1,2,3,7,8-Pentachlorodibenzo-p-dioxin [1,2,3,7,8-PeCDD]	40321-76-4	1
3	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,4,7,8-HxCDD]	39227-28-6	0.1
4	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,6,7,8-HxCDD]	57653-85-7	0.1
5	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin [1,2,3,7,8,9-HxCDD]	19408-74-3	0.1
6	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin [1,2,3,4,6,7,8-HpCDD]	35822-46-9	0.01
7	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin [1,2,3,4,6,7,8,9-OCDD]	3268-87-9	0.0003
8	2,3,7,8-Tetrachlorodibenzofuran [2,3,7,8-TCDF]	51207-31-9	0.1
9	1,2,3,7,8-Pentachlorodibenzofuran [1,2,3,7,8-PeCDF]	57117-41-6	0.03
10	2,3,4,7,8-Pentachlorodibenzofuran [2,3,4,7,8-PeCDF]	57117-31-4	0.3
11	1,2,3,4,7,8-Hexachlorodibenzofuran [1,2,3,4,7,8-HxCDF]	70648-26-9	0.1
12	1,2,3,6,7,8-Hexachlorodibenzofuran [1,2,3,6,7,8-HxCDF]	57117-44-9	0.1
13	1,2,3,7,8,9-Hexachlorodibenzofuran [1,2,3,7,8,9-HxCDF]	72918-21-9	0.1

No.	Dioxins, Furans, and Dioxin-like PCBs	CASRN	WHO_{2005} Toxic Equivalency Factors [TEFs]
14	2,3,4,6,7,8-Hexachlorodibenzofuran [2,3,4,6,7,8-HxCDF]	60851-34-5	0.1
15	1,2,3,4,6,7,8-Heptachlorodibenzofuran [1,2,3,4,6,7,8-HpCDF]	67562-39-4	0.01
16	1,2,3,4,7,8,9-Heptachlorodibenzofuran [1,2,3,4,7,8,9-HpCDF]	55673-89-7	0.01
17	1,2,3,4,6,7,8,9-Octachlorodibenzofuran [1,2,3,4,6,7,8,9-OCDF]	39001-02-0	0.0003
18	3,3',4,4'-Tetrachlorobiphenyl [3,3',4,4'-tetraCB (PCB 77)]	32598-13-3	0.0001
19	3,4,4',5- Tetrachlorobiphenyl [3,4,4',5-tetraCB (PCB 81)]	70362-50-4	0.0003
20	3,3',4,4',5- Pentachlorobiphenyl (PCB 126) [3,3',4,4',5-pentaCB (PCB 126)]	57465-28-8	0.1
21	3,3',4,4',5,5'- Hexachlorobiphenyl [3,3',4,4',5,5'-hexaCB (PCB 169)]	32774-16-6	0.03
22	2,3,3',4,4'- Pentachlorobiphenyl [2,3,3',4,4'-pentaCB (PCB 105)]	32598-14-4	0.00003
23	2,3,4,4',5- Pentachlorobiphenyl [2,3,4,4',5-pentaCB (PCB 114)]	74472-37-0	0.00003
24	2,3',4,4',5- Pentachlorobiphenyl [2,3',4,4',5-pentaCB (PCB 118)]	31508-00-6	0.00003
25	2',3,4,4',5- Pentachlorobiphenyl [2',3,4,4',5-pentaCB (PCB 123)]	65510-44-3	0.00003
26	2,3,3',4,4',5- Hexachlorobiphenyl [2,3,3',4,4',5-hexaCB (PCB 156)]	38380-08-4	0.00003
25	2,3,3',4,4',5'- Hexachlorobiphenyl [2,3,3',4,4',5'-hexaCB (PCB 157)]	69782-90-7	0.00003
28	2,3',4,4',5,5'- Hexachlorobiphenyl [2,3',4,4',5,5'-hexaCB (PCB 167)]	52663-72-6	0.00003
29	2,3,3',4,4',5,5'- Heptachlorobiphenyl [2,3,3',4,4',5,5'-heptaCB (PCB 189)]	39635-31-9	0.00003

NOTE:

- Sum of toxicity equivalents of individual isomers

The TEF scheme is intended to be used with isomer specific analytical results. In cases where results are reported by congener group only, staff at *Ministry* 's Standards Development Branch shall be contacted for appropriate procedures to convert non-isomer specific data to TEQs.

SCHEDULE E

AIR QUALITY MONITORING PROGRAM CONTAMINANTS:

Total suspended particulate matter

Mercury (particulate and vapour)

VOLATILE ORGANIC MATTER

Parameter	Cas No.	Parameter	Cas No.	Parameter	Cas No.
Carbon Tetrachloride	56-23-5	1,1-Dichloroethane	75-34-3	MEK	78-93-3
Ethyl Benzene	100-41-4	m/p-Xylene	108-38-3/106-42-3	Tetrachloroethene	127-18-4
Isopropyl Alcohol	67-63-0	1,1-Dichloroethene	75-35-4	Trichloroethene	79-01-6
Styrene	100-42-5	1,3,5-Trimethylbenzene	108-67-8	Ethyl Acetate	141-78-6
Acetone	67-64-1	Chlorodifluoromethane	75-45-6	Naphthalene	91-20-3
1,4-Dichlorobenzene	106-46-7	Toluene	108-88-3	Heptane	142-82-5
Chloroform	67-66-3	Trichlorofluoromethane	75-69-4	o-Xylene	95-47-6
1,2-Dibromoethane	106-93-4	Chlorobenzene	108-90-7	1,2-Dichloroethene (Cis)	156-59-2
Benzene	71-43-2	Dichlorodifluoromethane	75-71-8	1,2-Dichlorobenzene	95-50-1
1,2-Dichloroethane	107-06-2	Hexane	110-54-3	1,2-Dichloroethene (Trans)	156-60-5
1,1,1-Trichloroethane	71-55-6	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1,2,4-Trimethylbenzene	95-63-6
2-Propenenitrile	107-13-1	Cyclohexane	110-82-7	1,2,3-Trimethylbenzene	526-73-8
Vinyl Chloride	75-01-4	2-Methyl Butane	78-78-4	3-Methyl Pentane	96-14-0
2-Methyl Pentane	107-83-5	Nonane	111-84-2	3-Methyl Hexane	589-34-4
Dichloromethane	75-09-2	1,2-Dichloropropane	78-87-5	p-Cymene	99-87-6
MIBK	108-10-1	1,2,4-Trichlorobenzene	120-82-1	o-Ethyl Toluene	611-14-3

METALS

Parameter	**Cas No.**
Antimony	7440-36-0
Arsenic	7440-38-2
Barium	7440-39-3
Beryllium	7440-41-4
Cadmium	7440-43-9
Chromium	7440-47-3
Cobalt	7440-48-4
Copper	7440-50-8
Iron	15438-31-0
Lead	7439-92-1
Manganese	7439-96-5
Nickel	7440-02-0
Selenium	7782-49-2
Thallium	7440-28-0
Tin	7440-31-5
Vanadium	7440-62-2
Zinc	7440-66-6

CARBONYLS

Parameter	CAS No.
Formaldehyde	50-00-0
Acetone	67-64-1
Acetaldehyde	75-07-0
Benzaldehyde	100-52-7
Acrolein	107-02-08
Glutaraldehyde	111-30-8
Propionaldehyde (Propanal)	123-38-6
n-Butyraldehyde (n-Butanal)	123-72-3

AIR QUALITY MONITORING PROGRAM SAMPLING FREQUENCY:

Test Contaminants	Minimum Sampling Frequency
Volatile Organic Matter	Once every 12 days between January 1 and December 31
Total suspended particulate matter and Metals	Once every 12 days between January 1 and December 31
Carbonyls and Mercury	One sample day per month for May, June, July, August and September taken on a day when VOCs/TSP/Metal samples are collected

The reasons for the imposition of these terms and conditions are as follows:

1. Conditions No. 1 and 12 are included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the EPA, the regulations and this Approval.

2. Condition No. 2 is included to require the Company to keep records and to provide information to staff of the Ministry so that compliance with the EPA, the regulations and this Approval can be verified.

3. Condition No. 3 is included to require the Company to notify staff of the Ministry so as to assist the Ministry with the review of the site's compliance.

4. Conditions No. 4 thru 8 are included to provide the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Facility.

5. Conditions No. 9, 10, and 11 are included to require the Company to gather accurate information so that the environmental impact and subsequent compliance with the EPA, the regulations and this Approval

6. Conditions No. 13 is included to provide the minimum performance requirement considered necessary to prevent an adverse effect resulting from the operation of the Facility; and

7. Condition No. 14 is included to require the Company to gather accurate information and submit an Acoustic Audit Report in accordance with procedures set in the Ministry's noise guidelines, so that the environmental impact and subsequent compliance with this Approval can be verified.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 6547-5G5MSP, 8-1030-94-006 issued on March 20, 2003, April 19, 1994

In accordance with Section 139 of the *Environmental Protection Act,* you may by written notice served upon me, the Ontario Land Tribunal and in accordance with Section 47 of the *Environmental Bill of Rights,* 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act,* a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar*
Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5
OLT.Registrar@ontario.ca

and

The Minister of the Environment,
Conservation and Parks
777 Bay Street, 5th Floor
Toronto, Ontario
M7A 2J3

and

The Director appointed for the purposes of
Part II.1 of the *Environmental Protection Act*
Ministry of the Environment,
Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**

This instrument is subject to Section 38 of the *Environmental Bill of Rights,* 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at https://ero.ontario.ca/, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act.*

DATED AT TORONTO this 1st day of September, 2023

Nancy Orpana

Nancy E Orpana, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

SM/
c: District Manager, MECP Sarnia
Gordon Reusing, GHD

APPENDIX 3

Particulate and Metals Field Data Sheets
(15 pages)

ORTECH Consulting Inc.

Plant	Clean Harbors
Plant Location	Corunna, Ontario
Test No.:	1 M29
Test Date	MARCH 5, 2024
Test Location	Incinerator Exhaust Stack
Operator	DM

Project No.:	22326	
Page	1 of 5	
Probe No.:	6	
Meter Box No.:	TEAM 4	
Impinger Box No.:		

Pitot Factor	0.844	
DGMCF	1.035	
Barometric Pressure	29.29	"Hg
Static Pressure	.66	"H2O
Nozzle Size	.2488	inches
Stack Diameter	4.833	
Length	0	feet
Width	0	feet
Port length:	12	inches

Reading Interval	3
Number of Ports	2
Number of Points/Port	10

Particulate Gain

Filter	2.7	mg
Probe	3.5	mg

Moisture Gain

CWTR	3268.5	g
WCBDA	43.3	g

Combustion Gas Concentration

Oxygen	8.96	%
Carbon Dioxide	9.05	%
Carbon Monoxide	67.9	ppm

Measuring Device	MII Numbers
Probe / Pitot	15E
Trendicator	COE 20090
Control Box	COE 20090
Incline Manometer	COE 20090
Comb.Gas.Analyzer	MSHL
Micromanometer	
Barometer	Env.Can
Calipers	B03922

Nozzle Measurements		
1	~~.2485~~	~~0.2650~~
2	~~.2495~~	~~0.2630~~
3	~~.2500~~	~~0.2640~~
4	~~.2470~~	~~0.2640~~
Average:	~~.2488~~	~~0.2640~~

.2485
.2495
.2500
.2470

Probe Liner Glass / Metal /Teflon / Other__________

Nozzle Glass / Metal / Other__________

Union None /Metal / Teflon / Other__________

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: MAR 5/24	Plant: Clean Harbors	Test No.: 1 M29	Page 2 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	* Clock Time	* Dry Gas Meter ft^3	* Pitot ΔP "H_2O	Desired cfm	* Stack Temp °F	Probe Temp °F	Oven Temp °F	* Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	* Meter Temp Outlet °F	* Meter Temp Inlet °F	* Meter Pressure ΔH "H_2O	* Pump Vacuum "Hg Gauge
1	0	16.10	1.4	.58	372	249	247	60	68	63	64	1.3	5
	3	17.84	1.4	.58	374	250	250	50		64	62	1.3	5
	6	19.61	1.35	.57	374	251	250	49		64	62	1.3	5
	9	21.35	1.4	.58	374	260	252	48		64	62	1.3	5
2	12	23.09	1.4	.59	373	260	253	48		64	62	1.3	5
	15	24.81	1.45	.59	373	260	252	49		64	62	1.3	5
	18	26.52	1.4	.58	375	260	252	51		65	63	1.3	5
	21	28.22	1.4	.58	380	260	250	52		65	63	1.3	5
3	24	29.95	1.55	.61	374	260	253	53		65	63	1.4	5
	27	31.82	1.5	.60	376	260	250	55		65	64	1.4	5
	30	33.65	1.5	.60	374	260	252	53		65	64	1.4	5
	33	35.46	1.45	.59	376	265	255	56		65	64	1.4	5
4	36	37.27	1.85	.67	372	265	255	52		65	64	1.6	6
	39	39.22	1.7	.64	375	265	255	52		65	64	1.6	6
	42	41.17	1.8	.66	375	264	255	51		66	64	1.6	6
	45	43.16	1.75	.65	373	264	255	51		66	64	1.6	6
5	48	45.13	1.8	.65	375	260	255	51		66	64	1.6	6
	51	47.10	2.0	.69	371	260	255	50		66	64	1.6	6
	54	49.06	2.05	.70	373	263	261	54		66	64	1.6	6
	57	51.02	2.15	.72	370	263	261	50		66	64	1.8	6
6	60	53.12	2.15	.72	373	263	261	50		66	64	1.9	6

FW

Traverse: 1			
Start Time: 936	Initial Leak Check: .004	cfm@ 16	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator : DM

Field Data Sheet

Date: MAR 5/24	Plant: Clean Harbors	Test No.: 1 M29	
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	* Clock Time	* Dry Gas Meter ft³	* Pitot ΔP "H_2O	Desired cfm	* Stack Temp °F	Probe Temp °F	Oven Temp °F	* Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	* Meter Temp Outlet °F	* Meter Temp Inlet °F	* Meter Pressure ΔH "H_2O	* Pump Vacuum "Hg Gauge
	63	55.20	2.2	.73	374	260	252	52		66	64	1.8	6
	66	57.30	2.2	.73	377	260	251	56		66	64	1.9	6
3:49	69	~~61.49~~ 59.30	2.1	.71	377	260	251	56		66	64	1.8	6
7	72	~~63.5~~ 61.46	2.0	.69	373	260	251	56		66	64	1.9	6
	75	~~65.6~~ 63.54	2.1	.71	374	260	251	53		67	63	1.8	6
	78	~~67.75~~ 65.60	2.1	.71	374	260	251	53		67	63	1.8	6
	81	~~69.89~~ 67.75	2.1	.71	375	260	251	53		67	63	1.9	6
8	84	69.86	2.1	.71	374	260	251	53		67	63	1.9	6
	87	72.00	1.9	.68	372	260	255	53		67	63	1.9	6
	90	74.11	1.8	.66	373	259	245	61		66	62	1.8	6
	93	76.23	1.9	.68	377	259	259	64		66	62	1.8	6
9	96	78.26	1.9	.68	372	258	258	~~66~~ 67		66	62	1.8	6
	99	80.46	2.1	.71	372	258	259	68		66	62	1.9	6
*	102	82.58	2.0	.69	359	248	249	47		67	67	1.8	6
	105	84.77	2.0	.69	359	248	249	47		67	63	1.8	6
10	108	86.96	1.4	.59	360	250	245	59		67	62	1.3	6
	111	88.89	1.3	.56	360	250	250	57		67	61	1.3	6
	114	90.71	1.3	.56	360	250	250	57		67	61	1.3	6
	117	92.46	1.35	.57	360	251	252	58		67	61	1.3	6
	120	94.23											

Traverse:		
Start Time:	Initial Leak Check: cfm@	"Hg
Finish Time: 12 14	Final Leak Check: .003 cfm@ 10	"Hg

Traverse:		
Start Time:	Initial Leak Check: cfm @	"Hg
Finish Time:	Final Leak Check: cfm @	"Hg

OFF 11:18 DUE TO LIGHTNING AND WARM TEMPS ON @ 1196

Project No.: 22326

Operator : [signature]

Field Data Sheet

Date: MAR 5/24	Plant: Clean Harbors	Test No.: 1 - M29	Page 4 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	* Clock Time	* Dry Gas Meter ft^3	* Pitot ΔP "H_2O	Desired cfm	* Stack Temp °F	Probe Temp °F	Oven Temp °F	* Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	* Meter Temp Outlet °F	* Meter Temp Inlet °F	* Meter Pressure ΔH "H_2O	* Pump Vacuum "Hg Gauge
1	0	94.75	2.2	.73	379	257	253	54		71	70	1.9	7
	3	96.90	2.1	.72	378	255	241	54		71	67	1.9	7
	6	99.07	2.1	.72	378	255	256	51		71	68	1.9	7
	9	101.10	2.15	.73	376	263	247	51		71	66	1.9	7
2	12	103.35	2.1	.72	375	260	255	51		71	66	1.9	7
	15	105.50	2.2	.73	375	260	255	5		71	66	1.9	7
	18	107.68	2.1	.72	377	263	256	56		72	67	1.9	7
	21	109.77	2.1	.72	379	262	260	56		72	67	1.9	7
3	24	111.91	2.15	.72	378	265	255	63		73	68	1.9	7
	27	114.01	2.25	.74	382	267	246	60		73	68	2.0	7
	30	116.22	2.1	.72	381	267	249	57		73	67	2.0	7
	33	118.47	2.1	.72	382	266	250	54		72	67	2.0	7
4	36	120.71	2.15	.72	383	265	250	54		72	66	2.0	7
	39	122.95	2.15	.72	383	265	245	53		71	66	2.0	7
	42	125.17	2.1	.71	383	265	250	51		71	66	2.0	7
	45	127.40	2.2	.73	383	260	244	49		71	66	2.0	7
5	48	129.64	2.3	.75	385	261	252	49		71	66	2.0	7
	51	131.86	2.2	.73	386	260	253	52		71	66	2.0	7
	54	134.08	2.15	.72	387	260	253	55		71	66	2.0	7
	57	136.30	2.2	.73	386	260	253	57		71	66	2.0	7
6	60	138.52	2.1	.71	386	260	253	58		71	66	2.0	7

Traverse: 7		
Start Time: 1245	Initial Leak Check: cfm@	"Hg
Finish Time:	Final Leak Check: cfm@	"Hg

Traverse:		
Start Time:	Initial Leak Check: cfm @	"Hg
Finish Time:	Final Leak Check: cfm @	"Hg

Project No.: 22326

Operator : RM

Field Data Sheet

Date: MAR 5/24	Plant: Clean Harbors	Test No.: 1-M29	Page 5 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft³ *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
	63	140.73	2.0	.69	389	269	254	55		71	66	2	7
	66	142.95	2.0	.69	396	269	254	55		71	66	2	7
	69	145.16	2.0	.69	386	266	252	53		71	66	2	7
7	72	147.37	1.75	.65	385	266	252	53		71	66	2 1.6	7
	75	149.42	1.70	.64	385	266	252	55		71	66	1.6	7
	78	151.36	1.85	.67	385	266	252	55		71	66	1.6	7
	81	153.32	1.70	.64	384	266	253	61		71	66	1.6	7
8	84	155.27	1.6	.62	384	266	250	60		71	66	1.6	7
	87	157.22	1.6	.62	383	266	250	59		71	67	1.6	7
	90	159.16	1.6	.62	383	266	250	58		71	67	1.6	7
	93	161.12	1.6	.62	383	267	251	57		71	67	1.6	7
9	96	163.07	1.6	.62	383	267	251	57		71	67	1.6	7
	99	165.01	1.2	.54	383	267	251	57		71	67	1.1	6
	102	166.70	1.2	.54	383	266	250	57		71	67	1.1	6
	105	168.31	1.2	.54	383	266	250	57		71	67	1.1	6
10	108	169.92	1.2	.54	383	266	250	57		71	67	1.1	6
	111	171.51	1.2	.54	383	266	250	56		71	67	1.1	6
	114	173.15	1.2	.54	383	265	255	56		71	67	1.1	6
	117	174.76	1.2	.54	383	265	255	56		71	67	1.1	6
	120	176.37											

Traverse:			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 1445	Final Leak Check: .003	cfm@ 10	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator : Dan

ORTECH Consulting Inc.

Plant	Clean Harbors
Plant Location	Corunna, Ontario
Test No.:	2 M29
Test Date	MARCH 6, 2024
Test Location	Incinerator Exhaust Stack
Operator	RW

Project No.:	22326	
Page	1 of 5	
Probe No.:	6	
Meter Box No.:	T4	
Impinger Box No.:	5	

Pitot Factor	~~.846~~ 0.844	
DGMCF	1.035	
Barometric Pressure	29.42	"Hg
Static Pressure	.66	"H2O
Nozzle Size	~~0.244~~ 0.2488	inches
Stack Diameter	4.833	
Length	0	feet
Width	0	feet
Port length:	12	inches

Reading Interval	3
Number of Ports	2
Number of Points/Port	10

Particulate Gain

Filter	2.4	mg
Probe	2.2	mg

Moisture Gain

CWTR	3275.1	g
WCBDA	37.5	g

Combustion Gas Concentration

Oxygen	8.48	%
Carbon Dioxide	9.64	%
Carbon Monoxide	42.8	ppm

Measuring Device	MII Numbers
Probe / Pitot	SEE
Trendicator	
Control Box	TEST
Incline Manometer	
Comb.Gas.Analyzer	(
Micromanometer	
Barometer	Env.Can
Calipers	

Nozzle Measurements

1 ________

2 ________

3 ________

4 ________

Average:

Probe Liner Glass / Metal /Teflon / Other________

Nozzle Glass / Metal / Other________

Union None /Metal / Teflon / Other________

Pitot Leak Checked? Yes No

Site Diagram

Notes:

Field Data Sheet

Date: MAR 6/24	Plant: Clean Harbors	Test No.: 2 M29	Page 2 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft³ *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
1	0	77.02	2.15	.71	381	253	254	44		65	63	1.8	5
	3	79.09	2.1	.70	384	258	257	47		67	64	1.8	5
	6	81.17	2.1	.70	383	263	252	48		67	62	1.8	5
	9	83.28	2.1	.70	382	268	258	49		68	62	1.8	5
2	12	85.40	2.1	.70	382	260	255	50		68	62	1.8	5
	15	87.49	2.05	.70	383	260	255	50		68	62	1.8	5
	18	89.58	2.05	.69	381	268	251	51		69	63	1.8	5
	21	91.67	2.1	.70	382	265	255	51		69	63	1.8	5
3	24	93.77	2.05	.70	381	265	253	53		70	65	1.8	5
	27	95.86	2.0	.69	381	268	258	54		71	65	1.8	5
	30	97.92	2.05	.70	381	268	258	54		71	65	1.8	5
	33	99.98	2.1	.71	382	267	254	54		71	66	1.9	6
4	36	102.10	2.1	.71	382	269	256	53		72	67	1.9	6
	39	104.25	2.15	.72	380	268	254	53		72	67	1.9	6
	42	106.37	2.3	.74	381	268	254	53		72	67	1.9	6
	45	108.55	2.15	.72	382	267	256	53		73	68	1.9	6
5	48	110.73	2.1	.71	382	267	256	53		73	68	1.9	6
	51	112.91	2.2	.73	382	267	256	53		73	68	1.9	6
	54	114.98	2.15	.72	382	267	256	53		73	68	1.9	6
	57	117.26	2.15	.72	384	267	255	51		74	68	1.9	6
6	60	119.42	2.15		382	269	256	52		74	68	1.9	6

fw

Traverse:			
Start Time: 855	Initial Leak Check: .005	cfm@ 13	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator : Du

Field Data Sheet

Date: MAR 6 24	Plant: Clean Harbors	Test No.: 2 - M29	Page 3 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	* Clock Time	* Dry Gas Meter ft³	* Pitot Δ P "H_2O	Desired cfm	* Stack Temp °F	Probe Temp °F	Oven Temp °F	* Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	* Meter Temp Outlet °F	* Meter Temp Inlet °F	* Meter Pressure Δ H "H_2O	* Pump Vacuum "Hg Gauge
	63	121.57	2.15	.72	382	262	253	52		74	69	1.9	6
	66	123.72	1.9	.68	382	265	259	52		75	69	1.9	6
	69	125.88	1.9	.68	382	265	259	52		75	69	1.9	6
7	72	128.03	1.8	.66	382	267	256	53		75	69	1.7	6
	75	130.08	1.7	.64	383	266	254	53		75	69	1.6	5.5
	78	132.00	1.8	.66	384	265	256	53		75	67	1.6	5.5
	81	133.98	1.8	.66	382	261	260	55		75	70	1.6	5.5
8	84	135.96	1.9	.68	383	261	254	56		76	70	1.6	5.5
	87	137.94	1.7	.64	384	264	255	59		76	70	1.6	5.5
	90	139.92	1.6	.62	383	264	255	59		76	70	1.6	5.5
	93	141.89	1.7	.64	383	264	255	63		76	70	1.6	5.5
9	96	143.87	1.1	.52	382	264	256	63		76	70	1.2	5
	99	145.63	1.1	.52	382	264	259	59		77	70	1.2	5
	102	147.36	1.1	.52	380	261	251	56		77	71	1.2	5
	105	149.06	1.2	.54	380	261	251	56		277	71	1.1	5
10	108	150.72	1.1	.52	380	260	260	52		77	71	1.1	5
	111	152.37	1.1	.52	380	260	261	52		77	71	1.0	5
	114	154.00	1.2	.54	380	261	250	50		77	71	1.0	5
	117	155.61	1.1	.52	380	261	250	51		77	71	1.0	5
	120	157.24											

Traverse:			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 1055	Final Leak Check: .005	cfm@ 16	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator : RM

Field Data Sheet

Date: MAR 6/24	Plant: Clean Harbors	Test No.: 2 - M29	Page 5 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft³ *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
	63	198.90	2.2	.73	385	265	254	53		77	71	1.9	6
	66	201.07	2.15	.72	386	265	255	53		77	71	1.9	6
	69	203.27	2.2	.73	386	266	266	58		77	71	1.9	6
7	72	205.47	2.2	.73	387	266	265	60		77	71	1.9	6
	75	207.65	2.15	.72	387	266	259	60		77	71	1.9	6
	78	209.83	2.1	.71	386	266	257	56		77	71	1.9	6
	81	212.02	2.0	.70	386	261	257	55		77	71	1.9	6
8	84	214.20	1.85	.67	386	261	257	55		77	71	1.7	6
	87	216.27	1.9	.69	386	263	257	53		77	71	1.7	6
	90	218.30	1.8	.66	387	260	256	51		77	71	1.7	6
	93	220.34	1.8	.66	386	260	256	51		77	71	1.7	6
9	96	222.38	1.2	.54	380	260	253	50		77	72	1.1	5
	99	224.09	1.1	.52	380	261	254	50		77	72	1.1	5
	102	225.75	1.05	.51	380	261	254	50		77	72	1.1	5
	105	227.40	1.2	.54	380	261	254	52		77	72	1.1	5
10	108	229.06	1.1	.53	380	261	254	53		77	72	1.1	5
	111	230.72	1.0	.49	379	261	255	54		77	72	0.9	5
	114	232.27	1.1	.52	379	260	254	56		77	72	1.0	5
	117	233.69	1.2	.54	379	260	254	58		77	72	1.1	5
	120	235.56											

Traverse:				
Start Time:	Initial Leak Check:	cfm@		"Hg
Finish Time: 1331	Final Leak Check: .005	cfm@	16	"Hg

Traverse:				
Start Time:	Initial Leak Check:	cfm @		"Hg
Finish Time:	Final Leak Check:	cfm @		"Hg

Project No.: 22326

Operator : [illegible]

ORTECH Consulting Inc.

Plant	Clean Harbors
Plant Location	Corunna, Ontario
Test No.:	3 M29
Test Date	MARCH 7, 2024
Test Location	Incinerator Exhaust Stack
Operator	DW

Project No.:	22326
Page	1 of 5
Probe No.:	6
Meter Box No.:	T4
Impinger Box No.:	5

Pitot Factor	~~.846~~ 0.844	
DGMCF	1.035	
Barometric Pressure	29.52	"Hg
Static Pressure	.66	"H2O
Nozzle Size	.2488	inches
Stack Diameter	4.833	
Length	0	feet
Width	0	feet
Port length:	12	inches

Reading Interval	3
Number of Ports	2
Number of Points/Port	10

Probe Liner Glass / Metal /Teflon / Other__________

Nozzle Glass / Metal / Other__________

Union None /Metal / Teflon / Other__________

Pitot Leak Checked? Yes No

Particulate Gain

Filter	1.9	mg
Probe	1.2	mg

Moisture Gain

CWTR	3340.5	g
WCBDA	32.4	g

Combustion Gas Concentration

Oxygen	8.59	%
Carbon Dioxide	9.04	%
Carbon Monoxide	68.4	ppm

Site Diagram

Measuring Device	MII Numbers
Probe / Pitot	SEE
Trendicator	TEST
Control Box	
Incline Manometer	1
Comb.Gas.Analyzer	
Micromanometer	
Barometer	Env.Can
Calipers	

Nozzle Measurements

1 __________

2 __________

3 __________

4 __________

Average:

Notes:

Field Data Sheet

Date: MAR 7/24	Plant: Clean Harbors	Test No.: 3 M29	
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	* Clock Time	* Dry Gas Meter ft^3	* Pitot ΔP "H_2O	Desired cfm	* Stack Temp °F	Probe Temp °F	Oven Temp °F	* Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	* Meter Temp Outlet °F	* Meter Temp Inlet °F	* Meter Pressure ΔH "H_2O	* Pump Vacuum "Hg Gauge
1	0	36.60	1.7	.62	388	250	250	44		55	54	1.4	4
	3	38.41	1.7	.62	387	255	250	44		58	58	1.4	4
	6	40.20	1.6	.60	386	261	247	44		59	57	1.4	4.5
	9	42.05	1.7	.62	385	263	253	43		59	57	1.4	5
2	12	43.95	1.7	.62	386	259	251	42		60	58	1.5	5
	15	45.81	1.6	.61	386	259	251	42		61	59	1.5	5
	18	47.68	1.6	.61	384	262	256	43		61	59	1.5	5
	21	49.53	1.7	.63	384	264	251	43		62	60	1.5	5
3	24	51.39	1.6	.61	383	266	254	43		63	61	1.5	5
	27	53.22	1.6	.61	383	265	252	43		63	62	1.5	5
	30	55.04	1.7	.63	383	264	250	42		64	62	1.5	5
	33	56.87	1.8	.65	383	265	249	42		65	63	1.6	5
4	36	58.79	1.8	.65	387	265	250	43		65	63	1.6	5
	39	60.78	1.8	.65	383	266	245	41		66	64	1.6	5
	42	62.75	1.9	.67	383	261	255	41		66	64	1.6	5
	45	64.74	1.8	.65	383	265	253	43		67	64	1.6	5
5	48	66.71	1.95	.68	383	266	251	43		67	64	1.7	5
	51	68.74	2.0	.69	383	262	251	44		68	65	1.8	5.5
	54	70.84	1.95	.68	383	265	255	46		68	65	1.8	5.5
	57	72.96	1.95	.68	383	263	252	48		69	65	1.8	5.5
6	60	75.06	2.15	.71	380	261	258	48		69	66	1.9	5.5

Traverse:					
Start Time: 836	Initial Leak Check:	.005	cfm@	15	"Hg
Finish Time:	Final Leak Check:		cfm@		"Hg

Traverse:					
Start Time:	Initial Leak Check:		cfm @		"Hg
Finish Time:	Final Leak Check:		cfm @		"Hg

Project No.: 22326

Operator : [signature]

Field Data Sheet

Date: MAR 7/24	Plant: Clean Harbors	Test No.: 3 - M29	Page 3 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft³ *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
	63	77.21	2.25	.73	382	266	265	49		69	66	2.0	5.5
	66	79.45	2.15	.71	382	266	260	52		69	66	2.0	5.5
	69	81.70	2.15	.71	381	265	246	51		70	66	2.0	5.5
7	72	83.93	2.15	.72	381	265	257	50		70	67	2.0	5.5
	75	86.15	2.1	.71	380	264	252	49		71	67	2.0	5.5
	78	88.37	2.1	.71	380	258	256	49		71	67	2.0	5.5
	81	90.58	2.1	.71	377	260	252	48		71	68	2.0	5.5
8	84	92.81	2.1	.71	377	257	246	50		71	68	2.0	5.5
	87	94.95.03	1.8	.66	377	257	246	50		71	68	1.7	5
	90	97.12	1.85	.67	378	257	253	48		72	69	1.7	5
	93	99.17	1.9	.68	378	260	251	47		73	69	1.7	5
9	96	101.23	1.3	.56	370	260	251	47		73	70	1.2	5
	99	103.00	1.2	.54	370	260	251	47		73	70	1.2	5
	102	104.70	1.25	.55	371	260	252	45		73	70	1.2	5
	105	106.41	1.3	.56	371	261	251	47		73	70	1.2	5
10	108	108.11	1.25	.55	371	261	252	45		73	70	1.2	5
	111	109.83	1.25	.55	370	260	251	43		73	70	1.2	5
	114	111.53	1.25	.55	370	260	251	43		73	70	1.2	5
	117	113.23	1.25	.55	370	261	251	43		73	70	1.2	5
	120	114.89											

Traverse:			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 1036	Final Leak Check: .002	cfm@ 10	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator : [illegible]

Field Data Sheet

Date: MAR 7/24	Plant: Clean Harbors	Test No.: 3 M29	Page 4 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	* Clock Time	* Dry Gas Meter ft^3	* Pitot ΔP "H_2O	Desired cfm	* Stack Temp °F	Probe Temp °F	Oven Temp °F	* Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	* Meter Temp Outlet °F	* Meter Temp Inlet °F	* Meter Pressure ΔH "H_2O	* Pump Vacuum "Hg Gauge
1	0	115.49	2.1	.72	373	256	249	50		74	74	1.8	5.5
	3	117.60	2.15	.73	373	256	254	42		75	74	1.8	5.5
	6	119.69	2.15	.73	373	263	252	41		74	73	1.8	5.5
	9	121.79	2.15	.73	373	264	248	41		74	74	1.8	5.5
2	12	123.88	2.1	.72	374	264	249	41		74	74	1.9	5.5
	15	126.03	2.15	.73	376	264	252	41		74	74	1.9	5.5
	18	128.18	2.3	.75	378	265	249	48		74	74	1.9	5.5
	21	130.33	2.15	.73	378	262	254	51		74	74	1.9	5.5
3	24	132.45	2.15	.73	378	262	254	50		74	74	1.9	5.5
	27	134.72	2.15	.73	383	262	255	49		74	74	1.9	5.5
	30	136.92	2.15	.72	379	265	252	52		73	74	1.9	5.5
	33	139.11	2.15	.72	379	264	252	52		74	74	1.9	5.5
4	36	141.30	2.2	.73	376	264	252	52		74	75	1.9	5.5
	39	143.48	2.3	.75	377	265	254	52		74	73	2.0	6
	42	145.72	2.2	.73	377	265	254	53		74	74	2.0	6
	45	147.96	2.15	.73	376	260	254	55		74	74	2.0	6
5	48	150.22	2.15	.73	376	260	254	55		74	74	2.0	6
	51	152.43	2.15	.73	376	260	254	55		73	72	2.0	6
	54	154.67	2.15	.72	376	266	253	55		74	73	2.0	6
	57	156.89	2.15	.73	376	266	253	55		73	73	2.0	6
6	60	159.11	2.2	.74	376	266	253	55		73	73	2.0	6

FW

Traverse:			
Start Time: 1148	Initial Leak Check:	cfm@	"Hg
Finish Time:	Final Leak Check:	cfm@	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator : [signature]

Field Data Sheet

Date: MAR 7/24	Plant: Clean Harbors	Test No.: 3 M29	Page 5 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft³ *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
	63	161.33	1.8	.66	377	260	257	49		73	73	1.7	5.5
	66	163.42	1.8	.66	377	264	249	48		73	72	1.7	5.5
	69	165.48	1.9	.68	377	262	254	47		73	73	1.7	5.5
7	72	167.55	1.8	.66	377	262	251	46		73	71	1.7	5.5
	75	169.61	1.7	.64	378	265	256	45		73	71	1.7	5.5
	78	171.67	1.7	.64	376	265	249	44		73	71	1.7	5.5
	81	173.73	1.7	.64	378	260	252	44		73	71	1.7	5.5
8	84	175.78	1.6	.62	376	266	252	44		73	70	1.5	5.0
	87	177.72	1.6	.62	376	263	253	47		72	70	1.5	5
	90	179.65	1.55	.61	376	261	253	50		72	70	1.5	5
	93	181.57	1.65	.63	378	261	253	51		72	70	1.5	5
9	96	183.49	1.55	.61	378	259	250	51		72	70	1.5	5.5
	99	185.43	1.55	.61	377	263	253	50		72	70	1.4	5.5
	102	187.30	1.65	.72	379	264	255	52		72	70	1.5	5
	105	189.21	1.55	.61	376	264	255	52		72	70	1.5	5
10	108	191.12	1.5	.60	375	263	255	56		72	70	1.5	5
	111	193.02	1.5	.60	375	263	255	55		72	70	1.5	5
	114	194.91	1.5	.60	375	262	255	53		72	70	1.5	5
	117	196.83	1.5	.60	375	261	256	53		72	70	1.5	5
	120	198.76											

Traverse:			
Start Time:	Initial Leak Check:	cfm@	"Hg
Finish Time: 1348	Final Leak Check: .003	cfm@ 16	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator : RM

ORTECH
AN ALLIANCE TECHNICAL GROUP COMPANY

APPENDIX 4

Semi-Volatile Organic Compound Field Data Sheets
(15 pages)

ORTECH Consulting Inc.

Plant	Clean Harbors
Plant Location	Corunna, Ontario
Test No.:	1 - SVOC.
Test Date	MARCH , 2024.
Test Location	Incinerator Exhaust Stack
Operator	JG

Project No.:	22326	
Page	1 of 5	
Probe No.:		
Meter Box No.:	TEAM #3	
Impinger Box No.:		

Pitot Factor	0.843	
DGMCF	0.992	
Barometric Pressure	29.29	"Hg
Static Pressure	0.66	"H2O
Nozzle Size	0.2530	inches
Stack Diameter	4.833	
Length	0	feet
Width	0	feet
Port length:	12	inches

Reading Interval	3
Number of Ports	2
Number of Points/Port	10

Probe Liner Glass / Metal /Teflon / Other__________

Nozzle Glass / Metal / Other__________

Union None /Metal / Teflon / Other__________

Pitot Leak Checked? Yes No

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	3221.1	g
WCBDA	13.1	g

Combustion Gas Concentration

Oxygen	8.96	%
Carbon Dioxide	9.05	%
Carbon Monoxide	67.9	ppm

Measuring Device	MII Numbers
Probe / Pitot 15D	B03778
Trendicator TEAM 3	COE20093
Control Box TEAM 3	COE20093
Incline Manometer	COE 20093
Comb.Gas.Analyzer	MSML
Micromanometer	
Barometer	Env.Can
Calipers	B03922

Nozzle Measurements	
1	0.2520
2	0.2555
3	0.2520
4	0.2525
Average:	0.2530.

Site Diagram

Notes:

Field Data Sheet

Date: MARCH 5 2024	Plant: Clean Harbors	Test No.: 1 – SVOC	Page 2 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft³ *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
1	0	63.34	1.5	.064	375	250	260	62	43	66	67	1.5	3.0
	3	65.17	1.5	0.64	376	259	262	52	42	66	67	1.5	3.0
	6	67.64	1.5	0.64	377	261	263	50	44	66	66	1.5	4.0
	9	68.94	1.5	0.64	377	259	260	49	45	66	67	1.5	4.5
2	12	70.87	1.5	0.64	376	261	259	47	44	66	67	1.5	4.5
	15	72.81	1.5	0.64	377	267	258	46	43	66	67	1.5	4.5
	18	74.75	1.5	0.64	380	255	264	50	49	66	67	1.5	4.5
	21	76.69	1.5	0.64	380	254	264	50	47	66	67	1.5	4.5
3	24	78.62	1.7	0.68	379	253	264	49	47	66	67	1.7	5.0
	27	80.68	1.7	0.68	378	254	266	48	48	66	67	1.7	5.0
	30	82.73	1.7	0.68	378	252	262	49	50	66	67	1.7	5.0
	33	84.80	1.7	0.68	378	254	262	49	52	67	68	1.7	5.0
4	36	86.85	1.7	0.68	377	249	262	49	52	67	68	1.7	5.0
	39	88.90	1.7	0.68	376	246	266	48	52	67	67	1.7	5.0
	42	90.98	1.7	0.68	378	245	267	50	52	67	69	1.7	5.0
	45	93.03	1.7	0.68	375	250	265	47	51	67	69	1.7	5.0
5	48	95.05	1.9	0.72	375	250	265	47	51	67	69	2.0	5.5
	51	97.20	1.9	0.72	378	260	260	47	56	68	70	2.0	5.5
	54	99.40	1.9	0.72	374	260	259	46	52	68	70	2.0	5.5
	57	101.61	1.9	0.72	379	247	266	51	52	68	70	2.0	5.5
6	60	103.82	2.0	0.74	376	246	265	50	54	68	70	2.0	5.5

Traverse: 2 – i			
Start Time: 0936	Initial Leak Check: .008	cfm@ 14	"Hg
Finish Time: —	Final Leak Check: —	cfm@ —	"Hg

Traverse: —			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: —	Final Leak Check: —	cfm@ —	"Hg

Project No.: 22326

Operator : [signature]

Field Data Sheet

Date: March 5, 2024	Plant:	Clean Harbors	Test No.:	1-SVOC	Page 3 of 5
	Plant Location:	Corunna, Ontario	Test Location:	Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot ΔP "H_2O * 2.0	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
	63	106.03	~~.74~~	.74	375.	263	243	46	56	68	70	2.05	6.0
	66	108.25	2.0	.74	377	260	246	47	61	68	70.	2.05	6.0
	69	110.50	2.0	.74	378	249	250	49	60	68	70	2.05	6.0
7	72	112.68	2.0	.74	381	255	260	49	59	69	70.	2.05	6.0
	75	114.98.	2.0	.74	377	259	261	44	51	69	70	2.05	6.0
	78	117.22	2.0	.74	377	253	254	43	48	69	70.	2.05	6.0
	81	119.45	2.0	.74	375	254	259	43	48	69	70	2.05	6.0
8	84	121.73	2.0	.74	375	250	255	43	48	69	70	2.05	6.0.
	87	123.98	2.0	.74	375	251	248	42	49	69	70	2.05	6.0.
	90	126.18	2.2	.78	375	253	252	42	48	69	70.	2.2	6.0.
	93	128.53	2.2	.78	372	252	249	42	48	69	70	2.2	6.0.
9	96	130.90	2.2	.78	374	253	248	43	48	69	70.	2.2	6.0
	99	133.27	2.2	.78	375	253	259	43	49	69.	70	2.2	6.0.
	102	135.64	2.2	.78	358	247	260	44	45	70	70.	2.2	6.0
	105	138.12	1.8	.71.	368	250	260	45	44	70	70	1.9	6.0
10	108	140.31	1.8	.71	360	258.	260	42	46	70	70	1.9	6.0
	111	142.54	1.8	.71	360	258	259	42	45	70	70	1.9	6.0
	114	144.70	1.8	.71	366	258	257	42	49	70	69	1.9	6.0
	117	146.97	1.8	.71	367	250	257	42	49	70	69	1.9	6.0
	120	149.80.											

Traverse: 2		
Start Time: —	Initial Leak Check: — cfm@ — "Hg	
Finish Time: 1214	Final Leak Check: .005 cfm@ 14 "Hg	

Traverse:	
Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 22326

Operator :

OFF @ ~~12~~ 1118 DUE TO RAIN AND LIGHTNING.

ON @ 1156.

Field Data Sheet

Date: March 5, 2024	Plant: Clean Harbors	Test No.: 1 - SVOC	Page 4 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	Clock Time	Dry Gas Meter ft^3	Pitot ΔP "H_2O	Desired cfm	Stack Temp °F	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F	Meter Temp Inlet °F	Meter Pressure ΔH "H_2O	Pump Vacuum "Hg Gauge
	*	*	*		*			*		*	*	*	*
1	0	149.98	1.7	.68	376	250	250	49	49	70	71	1.8	5.0
	3	152.13	1.7	.68	380	260	253	43	47	70	71	1.8	5.0
	6	154.15	1.7	.68	380	260	253	41	46	70	71	1.8	5.0
	9	156.25	1.7	.68	380	260	253	41	45	70	71	1.8	6.0
* 2	12	158.25	1.8	.70	379	260	255	42	45	71	71	1.8	5.0
**	15	159.72	1.8	.70	384	260	260	42	45	71	71	1.8	5.0
	18	161.80	1.8	.70	385	259	250	42	42	71	71	1.8	5.0
	21	163.90	1.8	.70	385	257	253	41	44	71	70	1.8	5.0
3	24	166.0	1.8	.70	387	257	250	41	45	70	70	1.8	5.0
	27	168.1	1.8	.70	387	257	250	41	42	70	70	1.8	5.0
	30	170.21	1.8	.70	387	260	250	41	45	70	70	1.8	5.0
	33	172.33	1.8	.70	386	261	255	41	49	70	70	1.8	5.0
4	36	174.42	2.0	.74	388	262	254	43	50	70	71	2.0	6.0
	39	176.62	2.0	.74	387	263	253	44	51	70	71	2.0	6.0
	42	178.85	2.0	.74	387	263	265	42	51	70	71	2.0	6.0
	45	181.00	2.0	.74	388	264	258	42	52	70	71	2.0	6.0
5	48	183.39	2.0	.74	388	264	248	43	54	70	71	2.0	6.0
	51	185.60	2.0	.74	386	260	252	42	54	70	71	2.0	6.0
	54	187.80	2.0	.74	387	261	266	45	55	71	71	2.0	6.0
	57	190.04	2.0	.74	385	261	265	43	52	71	72	2.0	6.0
6	60	192.27	2.0	.74	386	262	260	44	51	71	72	2.0	6.0

Traverse: 1						Traverse:				
Start Time: 1245	Initial Leak Check: .005	cfm@	14	"Hg		Start Time:	Initial Leak Check:	cfm @		"Hg
Finish Time: –	Final Leak Check: –	cfm@	–	"Hg		Finish Time:	Final Leak Check:	cfm @		"Hg

Project No.: 22326

Operator :

* OFF @ 15 min mark
LOST POWER BAD RELAY

** BAD ISO DUE TO LOSS OF POWER.

Field Data Sheet

Date: March 5, 2024	Plant:	Clean Harbors	Test No.: 1 - Svoc	Page 5 of 5
	Plant Location:	Corunna, Ontario	Test Location:	Incinerator Exhaust Stack

Point	Clock Time *	Dry Gas Meter ft³ *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
	63	194.5	1.8	0.70	385	266	264	46	53.	71	72	1.8	6
	66	196.67	1.8	0.70	385	260	264	48	45	71.	72	1.8	6.
	69	198.78	1.8	0.70	385	262	255	45	48.	71	72	1.8	6.
7	72	200.91	1.5	0.64	387	260	250	44	45	71	72	1.6	6.
	75	202.91	1.5	0.64	388	262	266	50	55	71	72	1.5	6
	78	204.85	1.5	0.64	386	262	256	48	52	71	72	1.5	6.
	81	206.80	1.5	0.64	388	265	258	51	58	71	72	1.5	6.
8	84	208.75	1.5	0.64	385	262	265	48	51	71	72	1.5	6
	87	210.67.	1.5	0.64	382	260	247	47	53	71	72	1.6	6
	90	212.66.	1.6	0.64	383	260	248	48	52	71	72	1.5	6
	93	214.61	1.4	0.62	382	265	252	48	50	71	72	1.4	5
9	96	216.50	1.4.	0.62	384	265	248	48	52.	71	72	1.4	5.
	99	218.40	1.4	0.62	380	265	260	50	53	71	72	1.4	5.
	102	220.21	1.4	0.62	381	264	258	48	52	71	72	1.4	5.
	105	222.08	1.4	0.62	380	256	252	47	51	71	73	1.4	5.
10	108	223.95	1.4	0.62	381	254	262	48	52	71	73	1.4	5
	111	225.83	1.4	0.62	380	254	260	50	45	71	73	1.4	5.
	114	227.70	1.4	0.62	381	251	250	49	49.	71	72	1.4	5.
	117	229.60	1.4	0.62	379	250	250	46	50	71.	73	1.4	5.
	120	231.46											

Traverse:	1				
Start Time:	—	Initial Leak Check:	— cfm@	—	"Hg
Finish Time:	1512	Final Leak Check:	.005 cfm@	14.	"Hg

Traverse:				
Start Time:		Initial Leak Check:	cfm @	"Hg
Finish Time:		Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator :

ORTECH Consulting Inc.

Plant	Clean Harbors
Plant Location	Corunna, Ontario
Test No.:	2 - SVOC
Test Date	MARCH 2024
Test Location	Incinerator Exhaust Stack
Operator	JG -

Project No.:	22326	
Page	1 of 5	
Probe No.:	7	
Meter Box No.:	TEAM #1	
Impinger Box No.:		

Pitot Factor	0.847	
DGMCF	0.963	
Barometric Pressure	29.42	"Hg
Static Pressure	0.66	"H2O
Nozzle Size	~~0.2530~~ .2521	inches
Stack Diameter	4.833	
Length	0	feet
Width	0	feet
Port length:	12	inches

Reading Interval	3
Number of Ports	2
Number of Points/Port	10

Probe Liner Glass / Metal /Teflon / Other__________

Nozzle Glass / Metal / Other__________

Union None /Metal / Teflon / Other__________

Pitot Leak Checked? Yes No

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	3467.4	g
WCBDA	129	g

Combustion Gas Concentration

Oxygen	8.48	%
Carbon Dioxide	9.64	%
Carbon Monoxide	42.8	ppm

Site Diagram

Measuring Device	MII Numbers
Probe / Pitot SP2	B04009
Trendicator TEAM #1	C08 20094
Control Box TEAM #1	C08 20094
Incline Manometer	C08 20094
Comb.Gas.Analyzer	MSML.
Micromanometer	
Barometer	Env.Can
Calipers	

Nozzle Measurements	
1	.2520
2	.2520
3	.2525
4	.2520
Average:	.2521

Notes:

Field Data Sheet

Date: March 6 2024	Plant: Clean Harbors	Test No.: 2-SVOC	
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft^3 *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
1	0	3232	1.7	.71	352	240	240	18	17	28	27	1.6	3
	3	34.43	1.7	.68	354	250	265	23	18	38	36	1.7	4
	6	36.64	1.7	.68	355	252	254	21	22	38	35	1.8	4
	9	38.63	1.7	.69	362	258	260	25	34	47	44	1.6	4
2	12	40.72	1.9	.73	364	262	265	29	37.	49	46	1.8	5.5
	15	43.0	1.9	.73	364	262	265	29	37	49	46	1.8	5.5
	18	45.27.	1.9	.73	372	260	263	37	46	58	55	1.8	5.5
	21	47.55	1.9	.73	375	257	262	38	51	61	58	1.8	5.5
3	24	49.8	1.9	.74	375	257	262	38	51	61	58	1.8	5.5
	27	52.05	1.9	.75	377	259	264	40	55	66	61	1.8	5.5
	30	54.35	1.9	.75	376	261	260	40	44	66	62	1.8	5.5
	33	56.77	1.9	.75	376	261	260	40	44	66	62	1.8	5.5
4	36	58.93	1.9	.75	378.	250	252.	40	44	66	63	1.8	5.5.
	39	61.23.	1.9	.75	377	250	249	40	44	68	64	1.8	5.5
	42	63.44	~~1.9~~ 2.0	.77	377	250	249	40	44	68	64	1.9	5.5
	45	65.76	2.0	.77	377.	251	249	40	46	70	66	1.9	5.5
5	48	68.05	2.0	.77	378	250	250	40	48	70	67.	1.9	5.5
	51	70.35	2.0	.77	379	251	250	41	49	71	67	2.0	5.5
	54	72.70.	2.0	.78	378	251	252	41	52	71	70	2.0	5.5
	57	75.05	2.0	.78	380.	251	250	41	49	72	70	2.0	5.5
6	60	77.36	2.2	.81	380	250	252	41	48	72	70	2.1	6.0

Traverse: 2			
Start Time: 0855	Initial Leak Check: .005	cfm@ 21	"Hg
Finish Time: —	Final Leak Check: ~~.005~~ —	cfm@ —	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator : Jay [signature]

Field Data Sheet

Date: March 6, 2024	Plant: Clean Harbors	Test No.: 2 - SVOC	Page 3 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	* Clock Time	* Dry Gas Meter ft³	* Pitot ΔP "H_2O	Desired cfm	* Stack Temp °F	Probe Temp °F	Oven Temp °F	* Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	* Meter Temp Outlet °F	* Meter Temp Inlet °F	* Meter Pressure ΔH "H_2O	* Pump Vacuum "Hg Gauge
	63	79.80	2.2	.81	379	251	251	41	49	73	69	2.1	6
	66	82.25	2.2	.81	379	252	247	41	49	73	69	2.1	6.
	69	84.69	2.2	.81	378	252	253	40	49	73	70	2.1	6.
7	72	87.14	2.1	.80	380	253	247	41	50	74	70	2.1	6
	75	89.63	2.1	.80	378	253	252	41	53	74	71	2.1	6
	78	92.01	2.1	.80	379	253	253	41	56	74	72	2.1	6.
	81	94.46	2.1	.80	379	253	253	41	57	74	72	2.1	6
8	84	96.90	2.1	.80	379	253	251	40	52	75	72	2.1	6.
	87	99.34	1.7	.72	379	254	253	41	49	74	72	1.7	5
	90	101.62	1.7	.72	379	254	252	41	49	74	72	1.7	5.
	93	103.85	1.7	.72	380	254	243	42	47	75	73.	1.7	5
9	96	106.4	1.5	.68	380	255	259	44	45	76	74	1.5	4.5
	99	108.23	1.5	.68	380	253	254	44	46	76	74	1.5	4.5
	102	110.35	1.5	.68	380.	254	238	44	46	76	74	1.5	4.5
	105	112.47	1.5	.68	380	253	240	45	46	76	75	1.5	4.5
10	108	114.60	1.5	.68	380	253	242	43	46	77	75	1.5	4.5
	111	116.76	1.5	.68	380	253	242	43	46	77	75	1.4	4.5
	114	118.81	1.5	.68	381	254	242	43	47	77	75	1.4	4.5
	117	120.90	1.5	.68	380	254	245	44	47	77	76	1.4	4.5
	120	122.94											

Traverse: 2		
Start Time: —	Initial Leak Check: — cfm@ — "Hg	
Finish Time: 1055	Final Leak Check: .005 cfm@ 14 "Hg	

Traverse:	
Start Time:	Initial Leak Check: cfm @ "Hg
Finish Time:	Final Leak Check: cfm @ "Hg

Project No.: 22326

Operator :

Field Data Sheet

Date: March 6,2024	Plant: Clean Harbors	Test No.: 2-SVOC	Page 4 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	* Clock Time	* Dry Gas Meter ft³	* Pitot ΔP "H_2O	Desired cfm	* Stack Temp °F	Probe Temp °F	Oven Temp °F	* Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	* Meter Temp Outlet °F	* Meter Temp Inlet °F	* Meter Pressure ΔH "H_2O	* Pump Vacuum "Hg Gauge
1	0	123.48	1.5	.68	377	241	261	41	41	78	77	1.4	3.0
	3	125.46	1.5	.68	380	249	261	40	40	78	77	1.5	4.0
	6	127.45	1.5	.68	380	249	261	40	40	78	77	1.5	4.0
	9	129.52	1.5	.68	380	249	261	40	40	76	76	1.5	4.0
2	12	131.55	1.5	.68	379	251	258	39	42	76	76	1.5	4
	15	133.63	1.6	.70	383	254	258	40	43	76	77	1.6	4
	18	135.75	1.6	.70	377	250	262	40	43	75	76	1.6	4
	21	137.89	1.6	.70	379	251	262	39	44	75	76	1.6	4
3	24	140.04	1.6	.70	377	251	264	39	44	75	76	1.6	4
	27	142.18	1.6	.70	378	251	257	38	45	75	76	1.6	4
	30	144.31	1.6	.70	378	250	257	39	45	75	76	1.6	4
	33	146.45	1.6	.70	378	250	262	39	48	76	76	1.6	4
4	36	148.60	1.6	.70	378	252	266	39	50	76	76	1.6	4
	39	150.74	1.8	.74	380	251	260	39	52	76	76	1.8	5
	42	152.97	1.8	.74	380	251	260	39	52	76	76	1.8	5
	45	155.23	1.8	.74	380	251	260	39	46	76	76	1.8	5
5	48	157.48	1.8	.74	380	251	263	39	53	76	76	1.8	5
	51	159.76	1.8	.74	380	251	255	39	46	76	76	1.8	5
	54	162.0	1.8	.74	380	252	255	40	46	77	77	1.8	5
	57	164.26	1.8	.74	381	252	262	39	46	77	77	1.8	5
6	60	166.54	1.8	.74	381	257	261	38	45	77	77	1.8	5

Traverse: 1			
Start Time: 1131	Initial Leak Check: .005	cfm@ 14	"Hg
Finish Time: —	Final Leak Check: —	cfm@ —	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator : [signature]

Field Data Sheet

Date: March 6, 2024	Plant:	Clean Harbors	Test No.:	2- SVOC	Page 5 of 5
	Plant Location:	Corunna, Ontario	Test Location:	Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft³ *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
	63	168.78	2.1	.80	385	254	265	41	47	78	77	2.1	6.0
	66	171.24	2.1	.80	380	252	265	48	50	77	77	2.1	6.0
	69	173.70	2.1	.80	381	253	260	39	50	77	77	2.1	6.0
7	72	176.18	2.1	.80	381	253	256	39	51	77	77	2.1	6.0
178.68	75	~~177.68~~	2.4	.86	381	254	265	40	56	77	77	2.3	6.0
	78	181.2	2.4	.86	381	254	265	40	63	77	77	2.3	6.0
	81	183.8	2.1	.80	381	255	266	39	52	77	77	2.1	6.0
8	84	186.31	2.1	.80	383	255	258	39	54	77	77	2.1	6.0
	87	188.84	2.1	.80	382	255	262	39	53	78	78	2.1	6.0
	90	191.33	2.1	.80	383	256	267	39	52	78	78	2.1	6.0
	93	193.84	2.1	.80	382	255	260	39	51	78	78	2.1	6.0
9	96	196.32	2.1	.80	383	256	258	39	51	78	78	2.1	6.0
	99	198.77	2.1	.80	385	255	263	39	50	78	78	2.1	6.0
	102	201.20	2.1	.80	386	256	262	39	51	78	78	2.1	6.0
	105	203.66	2.1	.80	385	256	263	39	55	78	78	2.1	6.0
10	108	206.07	2.1	.80	383	256	258	39	56	78	78	2.1	6.0
	111	208.50	2.1	.80	383	255	259	38	58	79	79	2.1	6.0
	114	210.94	2.1	.80	382	255	258	38	60	79	79	2.1	6.0
	117	213.37	2.1	.80	383	256	268	38	60	79	79	2.1	6.0
	120	215.83											

Traverse: 1			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 1121	Final Leak Check: .005	cfm@ 20	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator :

ORTECH Consulting Inc.

Plant	Clean Harbors
Plant Location	Corunna, Ontario
Test No.:	3 - SVOC.
Test Date	MARCH 7, 2024
Test Location	Incinerator Exhaust Stack
Operator	JQ

Project No.:	22326	
Page	1 of 5	
Probe No.:		
Meter Box No.:	TEAM I	
Impinger Box No.:		

Pitot Factor	0.847.	
DGMCF	0.963.	
Barometric Pressure	29.52	"Hg
Static Pressure	0.66	"H2O
Nozzle Size	0.2521	inches
Stack Diameter	4.833	
Length	0	feet
Width	0	feet
Port length:	12	inches

Reading Interval	3
Number of Ports	2
Number of Points/Port	10

Probe Liner Glass / Metal /Teflon / Other__________

Nozzle Glass / Metal / Other__________

Union None /Metal / Teflon / Other__________

Pitot Leak Checked? Yes , No

Particulate Gain

Filter		mg
Probe		mg

Moisture Gain

CWTR	3433.3	g
WCBDA	16.6	g

Combustion Gas Concentration

Oxygen	8.59	%
Carbon Dioxide	9.04	%
Carbon Monoxide	68.4	ppm

Site Diagram

Measuring Device	MII Numbers
Probe / Pitot	SEE
Trendicator	
Control Box	TEST
Incline Manometer	
Comb.Gas.Analyzer	2
Micromanometer	
Barometer	Env.Can
Calipers	

Nozzle Measurements	
1	SEE
2	
3	TEST
4	
Average:	✓

Notes:

Field Data Sheet

Date: March 7, 2024	Plant: Clean Harbors	Test No.: 3 - SVOC	Page 2 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	* Clock Time	* Dry Gas Meter ft^3	* Pitot ΔP "H_2O	Desired cfm	* Stack Temp °F	Probe Temp °F	Oven Temp °F	* Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	* Meter Temp Outlet °F	* Meter Temp Inlet °F	* Meter Pressure ΔH "H_2O	* Pump Vacuum "Hg Gauge
1	0	16.46	1.6	.67	387	258	245	48	39	56	56	1.5	3
	3	18.60	1.6	.68	385	258	245	48	37	59	57	1.5	3
	6	20.65	1.6	.68	387	265	240	48	40	60	58	1.5	3
	9	22.70	1.6	.68	384	268	240	48	43	61	59	1.5	3
2	12	24.76	1.6	.68	383	267	250	47	44	61	59	1.5	3
	15	26.81	1.6	.68	382	267	250	47	44	61	59	1.5	3
	18	28.86	1.6	.68	382	268	255	47	49	63	60	1.5	3
	21	30.91	1.6	.68	381	269	250	48	51	63	61	1.5	3
3	24	32.96	1.6	.68	381	270	270	42	55	64	61	1.5	3
	27	35.02	1.6	.68	379	269	254	42	58	64	62	1.5	3
	30	37.07	1.6	.68	381	270	240	42	57	64	63	1.5	3
	33	39.14	1.6	.68	380	270	244	42	52	66	63	1.5	3
4	36	41.19	1.8	.73	380	264	237	42	50	67	64	1.7	~~3~~ 4
	39	43.34	1.8	.73	380	266	243	42	50	67	64	1.7	~~3~~ 4
	42	45.53	2.0	.77	381	265	250	42	50	67	64	2.0	5
	45	47.90	2.0	.77	380	265	245	43	48	68	65	2.0	5
5	48	50.25	2.0	.77	380	264	241	44	49	69	66	2.0	5
	51	52.60	2.0	.77	380	264	247	42	50	69	66	2.0	5
	54	54.95	2.0	.77	379	264	242	43	49	69	66	2.0	5
	57	57.31	2.0	.77	379	266	240	44	50	70	67	2.0	5
6	60	59.66	2.0	.77	377	266	243	45	52	71	68	2.0	5

Traverse: 2				
Start Time: 0836	Initial Leak Check:	.005	cfm@ 19	"Hg
Finish Time: /	Final Leak Check:	/	cfm@ /	"Hg

Traverse: /				
Start Time: /	Initial Leak Check:	/	cfm @ /	"Hg
Finish Time: /	Final Leak Check:	/	cfm @ /	"Hg

Project No.: 22326

Operator: Jay [signature]

Field Data Sheet

Date: March 7, 2024	Plant: Clean Harbors	Test No.: 3 - SVOC	Page 3 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	* Clock Time	* Dry Gas Meter ft³	* Pitot Δ P "H_2O	Desired cfm	* Stack Temp °F	Probe Temp °F	Oven Temp °F	* Impinger Temp Outlet °F	Impinger Temp Inlet/Trap °F	* Meter Temp Outlet °F	* Meter Temp Inlet °F	* Meter Pressure Δ H "H_2O	* Pump Vacuum "Hg Gauge
	63	62.02	2.2	.81	380	260	260	45	48	71	68	2.2	5.0
	66	64.47	2.2	.81	377	264	245	44	55	71	68	2.2	5.0
	69	66.94	2.2	.81	377	265	254	43	61	72	69	2.2	5.0
7	72	69.42	2.2	.81	378	267	261	43	55	72	69	2.2	5.0
	75	71.90	2.2	.81	376	266	246	45	51	73	70	2.2	5.0
	78	74.38	2.2	.81	377	267	251	45	51	73	70	2.2	5.0
	81	76.85	2.2	.81	376	267	253	44	50	73	71	2.2	5.0
8	84	79.32	2.2	.81	376	268	248	44	51	74	71	2.2	5.0
	87	81.80	2.2	.81	375	266	251	44	50	74	71	2.2	5.0
	90	84.29	2.2	.81	375	267	244	44	49	74	72	2.2	5.0
	93	86.77	2.2	.81	377	267	256	44	49	75	72	2.2	5.0
9	96	89.26	2.2	.81	375	268	256	44	50	75	73	2.2	5.0
	99	91.74	2.2	.82	376	261	251	45	52	75	73	2.2	5.0
	102	94.24	2.2	.82	376	268	252	45	54	76	74	2.2	5.0
	105	96.70	2.2	.82	377	269	246	45	57	76	74	2.2	5.0
10	108	99.18	2.2	.82	378	269	255	44	55	76	74	2.2	5.0
	111	101.67	2.2	.82	376	257	256	45	55	77	74	2.2	5.0
	114	104.15	2.2	.82	376	258	261	45	56	77	75	2.2	5.0
	117	106.66	2.2	.82	375	254	264	46	56	77	75	2.2	5.0
	120	109.18											

Traverse: 2		
Start Time:	Initial Leak Check: cfm@ "Hg	
Finish Time: 1036	Final Leak Check: cfm@ "Hg	

Traverse:		
Start Time:	Initial Leak Check: cfm @ "Hg	
Finish Time:	Final Leak Check: cfm @ "Hg	

Project No.: 22326

Operator :

Field Data Sheet

Date: March 7, 2022	Plant:	Clean Harbors	Test No.:	3-SVOC	Page 4 of 5
	Plant Location:	Corunna, Ontario	Test Location:	Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft³ *	Pitot ΔP "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure ΔH "H_2O *	Pump Vacuum "Hg Gauge *
1	0	111.28	1.8	.75	371	255	250	50	39	78	77	1.8	4.0
	3	113.68	1.8	.75	371	249	250	48	36	78	77	1.8	4.0
	6	115.95	1.8	.75	371	249	246	46	39	78	77.	1.8	4.0
	9	118.26	1.8	.75	370	251	254	46	45	78	77	1.8	4.0
2	12	120.55	1.8	.75	370	248	249	44	40	77	77.	1.8	4.0
	15	122.83	1.8	.75	370	250	247	42	39	77	77	1.8	4.0
	18	125.10	2.0	.79	370	250	252	42	40	77	77.	2.0	5.0
	21	127.50	2.0	.79	371	250	252	43	41	77	77	2.0	5.0
3	24	129.90	2.0	.79	370	253	254	42	42	77	77	2.0	5.0
	27	132.21	2.0	.79	371	250	250	43	40	77	75	2.0	5.0
	30	134.57	2.0	.79	370	250	246	42	43	78	77.	2.0	5.0
	33	136.95	2.0	.79	371	253	255	42	47	78	77	2.0	5.0
4	36	~~136~~ 139.33	2.0	.79	370	251	253	41	43	78	77.	2.0	5.0
	39	141.70	2.0	.79	371	252	253	41	41	78	76	2.0	5.0
	42	144.05	2.0	.79	372	252	258	41	43	78	76.	2.0	5.0
	45	146.45	2.0	.79	371	250	253	41	44	78	77	2.0	5.0
5	48	148.84	2.0	.79	372	251	251	43	45	78	77.	2.0	5.0
	51	151.23	2.0	.79	370	251	248	41	43	79	77	2.0	5.0
	54	153.62	2.0	.79	371	250	245	42	43	79	77	2.0	5.0
	57	156.02	2.0	.79	372	250	249	42	46	79	77	2.0	5.0
6	60	158.40	2.2	.83	373	251	243	42	50	79	77	2.2	6.0

Traverse:				
Start Time: 1148	Initial Leak Check:	.005	cfm@ 25	"Hg
Finish Time: —	Final Leak Check:	—	cfm@ —	"Hg

Traverse:				
Start Time:	Initial Leak Check:		cfm@	"Hg
Finish Time:	Final Leak Check:		cfm@	"Hg

Project No.: 22326

Operator :

Field Data Sheet

Date: March 7, 2024	Plant: Clean Harbors	Test No.: 3 – SVOC	Page 5 of 5
	Plant Location: Corunna, Ontario	Test Location: Incinerator Exhaust Stack	

Point	Clock Time *	Dry Gas Meter ft³ *	Pitot Δ P "H_2O *	Desired cfm	Stack Temp °F *	Probe Temp °F	Oven Temp °F	Impinger Temp Outlet °F *	Impinger Temp Inlet/Trap °F	Meter Temp Outlet °F *	Meter Temp Inlet °F *	Meter Pressure Δ H "H_2O *	Pump Vacuum "Hg Gauge *
	63	160.9	2.2	.83	373	250	250	50	48	79	77	2.2	6.0
	66	163.43	2.2	.83	373	252	258	42	49	79	77	2.2	6.0
	69	165.97	2.2	.83	373	252	258	41	48	79	77	2.2	6.0
7	72	168.51	2.0	.79	373	253	256	41	51	79	77	2.0	6.0
	75	170.92	2.0	.79	373	253	256	41	51	79	77	2.0	6.0
	78	173.33	2.0	.79	373	254	251	44	46	79	77	2.0	6.0
	81	175.75	2.0	.79	373	255	255	41	46	78	77	2.0	6.0
8	84	178.15	2.0	.79	373	255	253	46	51	78	77	2.0	6.0
	87	180.55	2.0	.79	374	252	256	50	50	78	77	2.0	6.0
	90	182.94	2.0	.79	375	257	254	50	47	78	77	2.0	6.0
	93	185.34	2.0	.79	373	258	255	52	46	78	77	2.0	6.0
9	96	187.74	1.6	.70	374	257	255	51	46	78	77	1.6	5.0
	99	189.94	1.6	.70	375	257	254	52	45	77	76	1.6	5.0
	102	192.05	1.6	.70	375	257	254	52	45	77	76	1.6	5.0
	105	194.23	1.6	.70	376	258	248	53	47	78	77	1.6	5.0
10	108	196.37	1.6	.70	376	256	255	53	49	78	76	1.6	5.0
	111	198.46	1.6	.70	376	256	255	53	49	78	76	1.6	5.0
	114	200.58	1.6	.70	375	257	257	54	49	78	76	1.6	5.0
	117	202.70	1.6	.70	376	257	255	54	48	77	77	1.6	5.0
	120	204.82											

Traverse: 1			
Start Time: —	Initial Leak Check: —	cfm@ —	"Hg
Finish Time: 1348	Final Leak Check: .005	cfm@ 15	"Hg

Traverse:			
Start Time:	Initial Leak Check:	cfm @	"Hg
Finish Time:	Final Leak Check:	cfm @	"Hg

Project No.: 22326

Operator :

APPENDIX 5

Acid Gas Field Data Sheets
(3 pages)

ORTECH Consulting Inc.
Method 26 Data Sheet

Plant:	Clean Harbors
Plant Location:	Corunna, On
Test No.: 1	
Test location:	Incinerator Exhaust Stack
Date: March 5, 2024	
Project No.:	22326

Measuring Device	MII Number
Control Module	A12010
Barometer	Environment Canada

P_{Bar}	29.30

Clock Time	Dry Gas Meter L	Probe Temp °C	Stack Temp °C	Impinger Outlet °C	Meter Temp. Average °C	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
0	340.0	130	188	10	14	2.0	2.5
5	350.0	129	188	10	17	2.0	2.5
10	360.0	131	188	11	20	2.0	2.5
15	370.3	131	187	10	20	2.0	2.5
20	381.0	131	185	11	20	2.0	2.5
25	391.7	131	185	12	21	2.0	2.5
30	402.3	131	185	12	21	2.0	2.5
35	412.8	132	185	13	22	2.0	2.5
40	423.4	131	184	13	21	2.0	2.5
45	433.7	132	184	14	23	2.0	2.5
50	444.2	131	184	13	21	2.0	2.5
55	454.0	131	184	13	21	2.0	2.5
60	~~45 54~~	131	185	14	23	2.0	3.0
	464.8						

Start Time: 9:52			DGMCF: .995
Finish Time: 10:52			Sample Volume: 124.8
Initial Leak Check:	<0.01	Lpm @ 15 " Hg	Average DGM Temp: 20.3
Final Leak Check:	<0.01	Lpm @ 15.5" Hg	Average DGM Δ H: 2.0

Comments:

Probe Purge On: @

Off: @

~2 LPM for 60 min, Operator : BP

ORTECH Consulting Inc.
Method 26 Data Sheet

Plant:	Clean Harbors
Plant Location:	Corunna, On
Test No.: 2	
Test location:	Incinerator Exhaust Stack
Date: March 6, 2024	
Project No.:	22326

Measuring Device	MII Number
Control Module	A12010
Barometer	Environment Canada

P_{Bar}	29.42

Clock Time	Dry Gas Meter L	Probe Temp °C	Stack Temp °C	Impinger Outlet °C	Meter Temp. Average °C	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
0	559.4	130	191	7	11	2.0	2.5
5	570.3	129	191	7	14	2.0	2.5
10	580.8	130	192	7	15	2.0	2.5
15	591.0	131	192	7	18	2.0	2.5
20	601.6	131	192	7	18	2.0	2.5
25	611.9	132	192	7	19	2.0	2.5
30	622.1	132	193	7	19	2.0	2.5
35	632.5	132	192	7	20	2.0	2.5
40	642.7	133	192	6	21	2.0	2.5
45	653.4	132	192	6	21	2.0	2.5
50	664.0	132	192	6	21	2.0	2.5
55	674.6	132	192	6	21	2.0	2.5
60	685.3	132	192	8	21	2.0	2.5

Start Time: 11:50		DGMCF: 0.995
Finish Time: 12:50		Sample Volume: 125.6
Initial Leak Check:	<0.01 Lpm @ 15 " Hg	Average DGM Temp: 18.4
Final Leak Check:	<0.01 Lpm @ 15 " Hg	Average DGM Δ H: 2.0

Comments:

Probe Purge On: @

Off: @

~2 LPM for 60 min,

Operator : BP

ORTECH Consulting Inc.
Method 26 Data Sheet

Plant:	Clean Harbors
Plant Location:	Corunna, On
Test No.: 3	
Test location:	Incinerator Exhaust Stack
Date: March 7, 2024	
Project No.:	22326

Measuring Device	MII Number
Control Module	A12-010
Barometer	Environment Canada

P_{Bar}	29.53

Clock Time	Dry Gas Meter L	Probe Temp °C	Stack Temp °C	Impinger Outlet °C	Meter Temp. Average °C	Meter Pressure Δ H "H_2O	Pump Vacuum "Hg Gauge
0	707.8	130	190	7	14	2.0	2.5
5	718.1	131	190	7	18	2.0	2.5
10	728.6	131	190	8	19	2.0	2.5
15	739.0	131	191	8	20	2.0	2.5
20	749.4	132	191	9	21	2.0	2.5
25	759.7	132	191	9	22	2.0	2.5
30	770.0	133	191	10	23	2.0	2.5
35	780.6	133	191	9	24	2.0	3.0
40	791.0	132	190	8	24	2.0	3.5
45	801.4	131	190	8	25	2.0	3.5
50	811.9	131	189	9	26	2.0	3.5
55	822.1	132	190	9	26	2.0	3.5
60	832.8	131	191	10	27	2.0	3.5

Start Time: 10:07				DGMCF: 0.995
Finish Time: 11:07				Sample Volume: 125.0
Initial Leak Check:	20.01	Lpm @ 15	" Hg	Average DGM Temp: 22.2
Final Leak Check:		Lpm @	" Hg	Average DGM Δ H: 2.0

Comments:

Probe Purge On: @

Off: @

~2 LPM for 60 min, Operator : BP

APPENDIX 6

Volatile Organic Compounds Field Data Sheets
(2 pages)

ORTECH Consulting Inc.

Vost Data Sheet

Plant: Clean Harbors			
Plant Location: Corunna, ON	Test Condition: Compliance		Control Box ID: A12010
Test location: APC Outlet No.______	DGMCF: 0.985		Operator: BP
Date: March 5, 2024	Barometric Pressure:	"Hg	Project No: 22326
~ 0.5 LPM for 40 minutes	NDL - No Dectectable Leak		Field Blank Pair ID: YED 633-01

Pair #6

PBAR = 29.31

TRIP 3A/3B

Test 1 Start Time: 2:10		Initial Leak Check	NDL	@	15	"Hg	Sample ID: 2 1
Test 1 End Time: 2:50		Final Leak Check	NDL	@	15	"Hg	Lab ID: YED 628-01

Clock Time	Dry Gas Meter L	Temperatures Probe °C	Stack °C	Condensor °C	Meter Avg °C	Meter Pressure "H_2O	Pump Vacuum "Hg
0	98.3	130	193	7	13	0.5	1.0
5	100.8	130	193	8	16	0.5	1.0
10	102.6	131	193	10	18	0.5	2.5
15	104.7	131	193	10	18	0.5	3.0
20	107.0	131	192	11	19	0.5	3.0
25	109.6	132	191	11	20	0.5	3.0
30	112.3	132	192	13	20	0.5	3.5
35	114.8	132	191	13 ~~191~~	20	0.5	3.5
40	117.5	132	191	14	21	0.5	4.0

March 6, 2024 PBAR = 29.41

Test 2 Start Time: 9:07		Initial Leak Check	NDL	@	15	"Hg	Sample ID: 4
Test 2 End Time: 9:47		Final Leak Check	NDL	@	15	"Hg	Lab ID: YED 636-01

Clock Time	Dry Gas Meter L	Temperatures Probe °C	Stack °C	Condensor °C	Meter Avg °C	Meter Pressure "H_2O	Pump Vacuum "Hg
0	517.8	128	193	13	6	0.5	1.0
5	519.8	130	193	10	12	0.5	3.0
10	522.1	130	193	10	12	0.5	4.5
15	524.3	131	192	11	14	0.5	5.0
20	526.6	131	192	11	14	0.5	5.0
25	529.0	131	192	12	15	0.5	5.0
30	531.5	131	192	12	16	0.5	5.0
35	533.8	132	191	13	17	0.5	5.0
40	536.6	132	191	13	17	0.5	5.0

ORTECH Consulting Inc.

Vost Data Sheet

Plant: Clean Harbors			
Plant Location: Corunna, ON	Test Condition: Compliance		Control Box ID: A17010
Test location: APC Outlet No.______	DGMCF: 0.985		Operator: BP
Date: March 6, 2024	Barometric Pressure:	"Hg	Project No: ~~22237~~ 22326
~ 0.5 LPM for 40 minutes	NDL - No Dectectable Leak		Field Blank Pair ID: YED633-01

Pair # 6

PBAR = 29.42

Test 3 Start Time: 10:03	Initial Leak Check NDL @ 15 "Hg	Sample ID: 10
Test 3 End Time: 10:43	Final Leak Check NDL @ 15 "Hg	Lab ID: YED637-01

Clock Time	Dry Gas Meter L	Temperatures Probe °C	Stack °C	Condensor °C	Meter Avg °C	Meter Pressure "H_2O	Pump Vacuum "Hg
0	536.9	130	191	15	15	0.5	1.0
5	538.8	130	191	13	18	0.5	4.0
10	541.2	131	192	10	18	0.5	4.0
15	543.5	131	192	11	18	0.5	4.5
20	546.0	131	192	11	19	0.5	4.5
25	548.4	132	193	12	20	0.5	4.5
30	551.0	132	193	13	20	0.5	4.5
35	553.4	131	192	12	21	0.5	4.5
40	556.4	132	192	12	21	0.5	5.0

March 7, 2024 PBAR = 29.52

Test 4 Start Time: 8:49	Initial Leak Check NDL @ 15.5 "Hg	Sample ID: 7
Test 4 End Time: 9:29	Final Leak Check NDL @ 15.5 "Hg	Lab ID: YED634-1

Clock Time	Dry Gas Meter L	Temperatures Probe °C	Stack °C	Condensor °C	Meter Avg °C	Meter Pressure "H_2O	Pump Vacuum "Hg
0	685.5	130	195	10	8	0.5	1.0
5	687.7	130	194	8	11	0.5	2.0
10	690.0	130	194	8	12	0.5	3.0
15	692.3	130	194	7	13	0.5	3.0
20	694.7	131	194	8	14	0.5	3.0
25	697.3	131	194	8	16	0.5	3.5
30	700.0	131	193	8	16	0.5	3.5
35	702.8	132	192	8	17	0.5	3.5
40	705.4	131	193	9	17	0.5	4.0

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AN ALLIANCE TECHNICAL GROUP COMPANY

APPENDIX 7

Particulate and Metals Sample Recovery Data Sheets
(4 pages)

ORTECH Particulate and Metals Train Recovery Data Sheet
Clean Harbors Sarnia

Project No. 22326
Date: MAR 5/24

Test No. 1
Test Location: Incinerator Exhaust

Nozzle, Probe Liner Cyclone Bypass & F.H. Filter Housing

CONTAINER TS1

Container TS1 Weights	
Empty Wt:	280.0
After Act. Rinse:	400.0
Total TS1:	120.0

MARK FLUID LEVEL

SEAL AND LABEL TS1

CONTAINER TS2

Container TS2 Weights	
Empty Wt:	280.0
with Nitric rinse	412.1
Total TS2:	132.1

MARK FLUID LEVEL

SEAL AND LABEL TS2

Filter

Filter ID: 02 10787

CONTAINER TS3

Initial Wt:	
Final Wt:	
Gain:	
Colour:	OFF WHITE

SEAL AND LABEL TS3

Impingers 1, 2, 3, 4 & 5

CONTAINER TS4

Impinger #1 (100 ml H_2O)	
Empty Wt:	662.7
Initial Wt:	744.7
Final Wt:	972.3
1 Gain:	227.6
Colour:	—

Impinger #2 Empty (Knock-out)	
Empty Wt:	709.7
Final Wt:	3208.4
2 Gain:	2498.7
Colour:	—

Impinger #3 HNO_3/H_2O_2	
Empty Wt:	560.7
Initial Wt:	670.4
Final Wt:	952.1
3 Gain:	281.7
Colour:	—

Impinger #4 HNO_3/H_2O_2	
Empty Wt:	663.1
Initial Wt:	764.5
Final Wt:	991.1
4 Gain:	226.6
Colour:	—

Impinger #5 Empty	
Empty Wt:	608.8
Final Wt:	~~764.7~~ 637.4
5 Gain:	28.6
Colour:	—

CONTAINER TS4 WEIGHTS	
Empty Wt:	1362.7
With Imp. 1 to 5 Soln:	4917.8
After HNO_3 Rinse:	5100.8
Total TS4:	3738.1

Impinger 6 & 7

CONTAINER TS5-A

Impinger #6 $KMnO_4/H_2SO_4$	
Empty Wt:	663.1
Initial Wt:	764.0
Final Wt:	764.7
6 Gain:	0.7
Colour:	PURPLE

Impinger #7 $KMnO_4/H_2SO_4$	
Empty Wt:	670.1
Initial Wt:	781.2
Final Wt:	785.8
7 Gain:	4.6
Colour:	PURPLE

CONTAINER TS5-A	
Empty Wt:	410.0
With Imp. Soln:	634.1
After $KMnO_4$ Rinse:	745.9
After D.I. Water Rinse:	927.1
Total TS5-A:	517.1

MARK FLUID LEVEL

SEAL & LABEL TS5-A

CONTAINER TS5-B	
Empty Wt:	410.0
With 150 mL DI Water:	560.0
After HCl Rinse:	600.0
After D.I. Water Rinse:	713.0
Total TS5-B:	303

MARK FLUID LEVEL

SEAL & LABEL TS5-B

Impinger #8 Silica Gel	
Initial Wt:	973.7
Final Wt:	1017.0
Gain:	43.3
8 % spent :	80

Sample Batch Number	24-22326-PM-
TS1 (Probe Rinse-Acetone)	1
TS2 (Probe Rinse-0.1N HNO_3)	2
TS3 (Filter)	3
TS4 (Impinger 1,2,3,4 & 5 Sol'n-HNO_3)	4
TS5-A (Impinger 6 & 7 Sol'n-$KMnO_4$)	5
TS5-B (Impinger 6 & 7 Rinse HCl)	6

TS1,TS2, TS5-B - 500 ml Amber Glass Bottle
TS3- Petri Dish

TS4 4 L Amber Glass Bottle
TS5-A - 1000 ml Amber Glass Bottle

CWTR = add 1 thru 7:	3268.5
WCBDA= 8:	43.3

Train Loaded By: DM
Train Recovered By: DM

Box # 5

ORTECH Particulate and Metals Train Recovery Data Sheet
Clean Harbors Sarnia

Project No. 22326

Date: MAR 6 / 24

Test No. 2

Test Location: Incinerator Exhaust

Nozzle, Probe Liner Cyclone Bypass & F.H. Filter Housing

CONTAINER TS1

Container TS1 Weights	
Empty Wt:	290.0
After Act. Rinse:	422.0
Total TS1:	132.0

MARK FLUID LEVEL

SEAL AND LABEL TS1

CONTAINER TS2

Container TS2 Weights	
Empty Wt:	290.0
with Nitric rinse	432.0
Total TS2:	142.0

MARK FLUID LEVEL

SEAL AND LABEL TS2

Filter

Filter ID: Q2/10789

CONTAINER TS3

Initial Wt:	
Final Wt:	
Gain:	
Colour:	OFFWHITE

SEAL AND LABEL TS3

3963.6
- 1365.6

Impingers 1, 2, 3, 4 & 5

CONTAINER TS4

Impinger #1 (100 ml H_2O)	
Empty Wt:	661.5
Initial Wt:	757.6
Final Wt:	950.0
1 Gain:	192.4
Colour:	—

Impinger #2 Empty (Knock-out)	
Empty Wt:	711.6
Final Wt:	3309.6
2 Gain:	2598.0
Colour:	—

Impinger #3 HNO_3/H_2O_2	
Empty Wt:	560.7
Initial Wt:	677.1
Final Wt:	915.1
3 Gain:	238.0
Colour:	—

Impinger #4 HNO_3/H_2O_2	
Empty Wt:	663.1
Initial Wt:	760.6
Final Wt:	971.2
4 Gain:	210.6
Colour:	—

Impinger #5 Empty	
Empty Wt:	609.3
Final Wt:	634.9
5 Gain:	25.6
Colour:	—

CONTAINER TS4 WEIGHTS	
Empty Wt:	1365.6
With Imp. 1 to 5 Soln:	4935.6
After HNO_3 Rinse:	5094.8
Total TS4:	3729.2

Box #

Impinger 6 & 7

CONTAINER TS5-A

Impinger #6 $KMnO_4/H_2SO_4$	
Empty Wt:	663.1
Initial Wt:	769.9
Final Wt:	773.3
6 Gain:	3.4
Colour:	PURPLE

Impinger #7 $KMnO_4/H_2SO_4$	
Empty Wt:	670.1
Initial Wt:	769.5
Final Wt:	776.6
7 Gain:	~~6.5~~ 7.1
Colour:	PURPLE

CONTAINER TS5-A	
Empty Wt:	410.0
With Imp. Soln:	635.1
After $KMnO_4$ Rinse:	721.8
After D.I. Water Rinse:	927.3
Total TS5-A:	517.3

MARK FLUID LEVEL

SEAL & LABEL TS5-A

CONTAINER TS5-B	
Empty Wt:	410.0
With 150 mL DI Water:	560.0
After HCl Rinse:	617.6
After D.I. Water Rinse:	734.0
Total TS5-B:	324.0

MARK FLUID LEVEL

SEAL & LABEL TS5-B

Impinger #8 Silica Gel	
Initial Wt:	992.4
Final Wt:	1029.9
Gain:	37.5
8 % spent :	

Sample Batch Number	24-22326-PM-
TS1 (Probe Rinse-Acetone)	7
TS2 (Probe Rinse-0.1N HNO_3)	8
TS3 (Filter)	9
TS4 (Impinger 1,2,3,4 & 5 Sol'n-HNO_3)	10
TS5-A (Impinger 6 & 7 Sol'n-$KMnO_4$)	11
TS5-B (Impinger 6 & 7 Rinse HCl)	12

TS1,TS2, TS5-B - 500 ml Amber Glass Bottle

TS3- Petri Dish

TS4 4 L Amber Glass Bottle

TS5-A - 1000 ml Amber Glass Bottle

CWTR = add 1 thru 7:	~~3274.5~~ 3275.1
WCBDA= 8:	37.5

Train Loaded By: RM

Train Recovered By: RL

ORTECH Particulate and Metals Train Recovery Data Sheet
Clean Harbors Sarnia

Project No. 22326
Date: MAR 7/24

Test No. 3
Test Location: Incinerator Exhaust

Nozzle, Probe Liner Cyclone Bypass & F.H. Filter Housing	Filter	Impingers 1, 2, 3, 4 & 5	Impinger 6 & 7
	Filter ID: Q2-10791		
CONTAINER TS1	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5-A

Container TS1 Weights	
Empty Wt:	280.0
After Act. Rinse:	410.0
Total TS1:	130.0

MARK FLUID LEVEL

SEAL AND LABEL TS1

CONTAINER TS2

Container TS2 Weights	
Empty Wt:	280.0
with Nitric rinse	480.0
Total TS2:	120.0

MARK FLUID LEVEL

SEAL AND LABEL TS2

Initial Wt:	
Final Wt:	
Gain:	
Colour:	OFF WHITE

SEAL AND LABEL TS3

4440.0
- 1780.3

Impinger #1 (100 ml H_2O)	
Empty Wt:	661.3
Initial Wt:	756.7
Final Wt:	968.4
1 Gain:	211.7
Colour:	—

Impinger #2 Empty (Knock-out)	
Empty Wt:	710.9
Final Wt:	3370.6
2 Gain:	2659.7
Colour:	—

Impinger #3 HNO_3/H_2O_2	
Empty Wt:	561.8
Initial Wt:	654.2
Final Wt:	918.9
3 Gain:	264.7
Colour:	—

Impinger #4 HNO_3/H_2O_2	
Empty Wt:	664.0
Initial Wt:	780.6
Final Wt:	972.8
4 Gain:	192.2
Colour:	—

Impinger #5 Empty	
Empty Wt:	609.2
Final Wt:	614.5
5 Gain:	5.3
Colour:	—

CONTAINER TS4 WEIGHTS	
Empty Wt:	1780.3
With Imp. 1 to 5 Soln:	5417.3
After HNO_3 Rinse:	
Total TS4:	

Impinger #6 $KMnO_4/H_2SO_4$	
Empty Wt:	662.8
Initial Wt:	773.1
Final Wt:	777.3
6 Gain:	4.2
Colour:	PURPLE

Impinger #7 $KMnO_4/H_2SO_4$	
Empty Wt:	656.2
Initial Wt:	768.4
Final Wt:	771.1
7 Gain:	2.7
Colour:	PURPLE

CONTAINER TS5-A	
Empty Wt:	410.0
With Imp. Soln:	631.3
After $KMnO_4$ Rinse:	748.2
After D.I. Water Rinse:	903.4
Total TS5-A:	493.4

MARK FLUID LEVEL

SEAL & LABEL TS5-A

CONTAINER TS5-B	
Empty Wt:	410.0
With 150 mL DI Water:	558.4
After HCl Rinse:	618.3
After D.I. Water Rinse:	742.0
Total TS5-B:	332.0

MARK FLUID LEVEL

SEAL & LABEL TSS-B

Impinger #8 Silica Gel	
Initial Wt:	968.1
Final Wt:	1000.5
Gain:	32.4
8 % spent :	30

Sample Batch Number	24-22326-PM-
TS1 (Probe Rinse-Acetone)	13
TS2 (Probe Rinse-0.1N HNO_3)	14
TS3 (Filter)	15
TS4 (Impinger 1,2,3,4 & 5 Sol'n-HNO_3)	16
TS5-A (Impinger 6 & 7 Sol'n-$KMnO_4$)	17
TS5-B (Impinger 6 & 7 Rinse HCl)	18

TS1,TS2, TS5-B - 500 ml Amber Glass Bottle
TS3- Petri Dish

TS4 4 L Amber Glass Bottle
TS5-A - 1000 ml Amber Glass Bottle

CWTR = add 1 thru 7:	3340.5
WCBDA= 8:	32.4

Train Loaded By: [signature]
Train Recovered By: [signature]

Box # 5

ORTECH Particulate and Metals Train Recovery Data Sheet
Clean Harbors Sarnia

Project No. 22326
Date: MAR 6/24

Test No. BLANK
Test Location: Incinerator Exhaust

Nozzle, Probe Liner Cyclone Bypass & F.H. Filter Housing

CONTAINER TS1

Container TS1 Weights	
Empty Wt:	280.0
After Act. Rinse:	484.7
Total TS1:	204.7

MARK FLUID LEVEL

SEAL AND LABEL TS1

CONTAINER TS2

Container TS2 Weights	
Empty Wt:	280.0
with Nitric rinse	574.1
Total TS2:	294.1

MARK FLUID LEVEL

SEAL AND LABEL TS2

Filter

Filter ID: QZ10790

CONTAINER TS3

Initial Wt:	
Final Wt:	
Gain:	
Colour:	WHITE

SEAL AND LABEL TS3

Impingers 1, 2, 3, 4 & 5

CONTAINER TS4

Impinger #1 (100 ml H_2O)	
Empty Wt:	
Initial Wt:	
Final Wt:	
1 Gain:	
Colour:	

Impinger #2 Empty (Knock-out)	
Empty Wt:	
Final Wt:	
2 Gain:	
Colour:	

Impinger #3 HNO_3/H_2O_2	
Empty Wt:	
Initial Wt:	
Final Wt:	
3 Gain:	
Colour:	

Impinger #4 HNO_3/H_2O_2	
Empty Wt:	
Initial Wt:	
Final Wt:	
4 Gain:	
Colour:	

Impinger #5 Empty	
Empty Wt:	
Final Wt:	
5 Gain:	
Colour:	

CONTAINER TS4 WEIGHTS	
Empty Wt:	410.0
With Imp. 1 to 5 Soln:	623.3
After HNO_3 Rinse:	810.0
Total TS4:	

Impinger 6 & 7

CONTAINER TS5-A

Impinger #6 $KMnO_4/H_2SO_4$	
Empty Wt:	
Initial Wt:	
Final Wt:	
6 Gain:	
Colour:	

Impinger #7 $KMnO_4/H_2SO_4$	
Empty Wt:	
Initial Wt:	
Final Wt:	
7 Gain:	
Colour:	

CONTAINER TS5-A	
Empty Wt:	410.0
With Imp. Soln:	641.2
After $KMnO_4$ Rinse:	780.2
After D.I. Water Rinse:	880.2
Total TS5-A:	470.2

MARK FLUID LEVEL

SEAL & LABEL TS5-A

CONTAINER TS5-B	
Empty Wt:	410.0
With 150 mL DI Water:	559.3
After HCl Rinse:	589.1
After D.I. Water Rinse:	732.4
Total TS5-B:	322.4

MARK FLUID LEVEL

SEAL & LABEL TS5-B

Impinger #8 Silica Gel	
Initial Wt:	
Final Wt:	
Gain:	
8 % spent :	

Sample Batch Number	24-22326-PM-
TS1 (Probe Rinse-Acetone)	19
TS2 (Probe Rinse-0.1N HNO_3)	20
TS3 (Filter)	21
TS4 (Impinger 1,2,3,4 & 5 Sol'n-HNO_3)	22
TS5-A (Impinger 6 & 7 Sol'n-$KMnO_4$)	23
TS5-B (Impinger 6 & 7 Rinse HCl)	24

TS1,TS2, TS5-B - 500 ml Amber Glass Bottle
TS3- Petri Dish

TS4 4 L Amber Glass Bottle
TS5-A - 1000 ml Amber Glass Bottle

CWTR = add 1 thru 7:	
WCBDA= 8:	

Train Loaded By: [signature]
Train Recovered By: [signature]

Box #

APPENDIX 8

Particulate and Metals Analytical Report
(16 pages)

ALS Environmental
1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	ORTECH
ALS Project ID:	ORT100	**Client Address:**	804 Southdown Road Mississauga, ON L5J 2Y4 Canada
ALS WO#:	L2754873		
Date of Report	18-Mar-24		
Date of Sample Receipt	8-Mar-24	**Client Contact:**	Chris Belore
		Client Project ID:	22326 Clean Harbors

COMMENTS:

Sample Particulate Analysis via Gravimetric USEPA Method 5 (GN/KC11 15-Mar-2024)

REPORT FLAGS:

J - The value is uncertain and below what can be reliably identified as positive with a ≥99% confidence limit (i.e. below the laboratory determined MDL).

LCB = Laboratory Control Blank
CVS = Continuing Verification Standard Sample (limits: ±2 in the last decimal)
LOR = Limit of Reporting

Certified by: L. Wrona

Lynne Wrona
Project Manager

ALS Environmental

Sample Analysis Summary Report

Sample Name		24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(7 THRU 12) TEST#2	24-22326-PM-(13 THRU 18) TEST#3	24-22326-PM-(19 THRU 24) BLANK	n/a	
ALS Sample ID		L2754873-1	L2754873-2	L2754873-3	L2754873-4	L2754873-MB	
Matrix		Stack	Stack	Stack	Stack	n/a	
Analysis type		Sample	Sample	Sample	Sample	Sample	
Sampling Date/Time		5-Mar-24	6-Mar-24	7-Mar-24	6-Mar-24	n/a	
Date of Receipt		8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	n/a	
PM via Gravimetric Analysis	**LOR**						
Method 5	**mg**	**mg**	**mg**	**mg**	**mg**	**mg**	
Filter Particulate Matter	0.8	2.7	2.4	1.9	2.6	0.2	J
Acetone Particulate Matter	0.4	3.5	2.2	1.2	0.6	0.5	
	g	**g**	**g**	**g**	**g**	**g**	
Acetone Mass	0.02	142	127	145	200	29.9	

ALS Environmental
1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	ORTECH
ALS Project ID:	ORT100	**Client Address:**	804 Southdown Road Mississauga, ON L5J 2Y4 Canada
ALS WO#:	L2754873		
Date of Report	28-Mar-24		
Date of Sample Receipt	8-Mar-24	**Client Contact:**	Chris Belore
		Client Project ID:	22326 Clean Harbors

COMMENTS:
Metals analysed via ICP-MS Method USEPA 6020B (SA 27-Mar-24)
Sample Preparation via USEPA Method 29 (KC11 26-Mar-24)

ANALYST COMMENTS:

1A HNO3:

Co and Ni observed in the reagent blank (RB) at a level significantly above its LOR. Sample data within a factor of 5X, may be biased high as a result of this background contribution. Impact of Ni to data quality is expected to be negligible. Co, Mn, Ni and Na observed in the method blank (MB) at a level significantly above its LOR. Sample data for Co and Na within a factor of 5X, may be biased high as a result of this background contribution. The impact on Mn and Ni data is expected to be negligible.

1A HF:

Al, Cu, Mg, Mn, Mo, Ni, Sr and Sn observed in the MB at a level significantly above its LOR. Sample data within a factor of 5X, may be biased high as a result of this background contribution. Silicon cannot be quantified in this fraction due to the contribution of the complete digestion of the filter matrix.

2A:

Pb observed in the RB at a level above its LOR. Sample data is more than 5x this potential background, indicating these contributions have no significant impact. Sn observed in the reagent blank (RB) above its LOR. This represents the contribution of the peroxide reagent, which includes a tin-containing stabilizer. Sample data may be similarly biased. B recoveries in the LCS and LCSD are outside ALS DQOs (found: 119, 122% limits: 85-115%). Sample data may be biased slightly high for this target. Al, Se and S recoveries in the MS and MSD cannot be quantified due to high levels of the target analytes in the sample, relative to the spiked amount. This is not expected to indicate any compromise to data quality. SA 28-Mar-24

LCB = Laboratory Control Blank
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
LOR = Limit of Reporting
nq = not quantifiable due to native levels in the sample

Certified by: L. Wrona
Lynne Wrona
Project Manager

ALS Environmental

Sample Analysis Summary Report

Sample Name		**24-22326-PM-(1 THRU 6) TEST#1**	**24-22326-PM-(7 THRU 12) TEST#2**	**24-22326-PM-(13 THRU 18) TEST#3**	**24-22326-PM-(19 THRU 24) BLANK**	**MB**
ALS Sample ID		L2754873-1	L2754873-2	L2754873-3	L2754873-4	L2754873-MB
Matrix		Stack	Stack	Stack	Stack	n/a
Analysis Type		Sample	Sample	Sample	Sample	Sample
Sampling Date		5-Mar-24	6-Mar-24	7-Mar-24	6-Mar-24	n/a
Date of Receipt		8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	n/a
Multi-Metals via ICP-MS	**LOR ug**	**ug**	**ug**	**ug**	**ug**	**ug**
Front Half HNO3 Fraction 1A						
Aluminum	20	43.4	26.8	20.8	<	<
Antimony	0.2	<	<	<	<	<
Arsenic	1	<	<	<	<	<
Barium	5	16.4	17.6	14.0	11.7	<
Beryllium	0.2	<	<	<	<	<
Boron	30	37.1	<	<	<	<
Cadmium	0.1	0.549	0.972	0.492	<	<
Calcium	500	<	<	<	<	<
Chromium	1	24.4	26.3	9.56	<	<
Cobalt	0.2	1.09	0.855	0.429	<	0.981
Copper	1	5.87	4.68	2.22	2.77	1.54
Iron	200	336	386	<	<	<
Lead	0.5	<	<	<	<	<
Lithium	0.5	<	0.717	<	<	<
Magnesium	10	19.2	14.2	12.0	11.7	<
Manganese	0.5	28.6	34.8	27.2	<	2.36
Molybdenum	0.2	3.64	5.09	1.55	0.210	<
Nickel	0.2	18.1	19.1	7.08	0.369	0.918
Phosphorus	100	<	<	<	<	<
Potassium	100	318	346	299	<	<
Selenium	2	7.57	10.1	5.44	<	<
Silver	0.2	<	<	<	<	<
Sodium	30	745	658	513	397	69.3
Strontium	0.2	0.534	0.453	0.339	0.225	<
Tin	0.3	14.7	12.2	14.9	8.79	<
Titanium	10	<	<	<	<	<
Vanadium	1	<	<	<	<	<
Zinc	6	41.0	23.3	16.3	<	<
Sulphur	10000	<	<	<	<	<
Silicon	150	2290	3050	808	792	245

ALS Environmental

Sample QC Summary Report

Sample Name		RB	LCS	LCS	LCSD	LCSD
ALS Sample ID		RB	LCS	LCS	LCSD	LCSD
Matrix		Stack	Stack	Stack	Stack	Stack
Analysis Type		Blank	LCS	LCS	LCS	LCS
Sampling Date		n/a	n/a	n/a	n/a	n/a
Date of Receipt		n/a	n/a	n/a	n/a	n/a
Multi-Metals via ICP-MS	**LOR**					
	ug	**ug**	**ug**	**% Rec**	**ug**	**% Rec**
Front Half HNO3 Fraction 1A						
Aluminum	20	<	115	94	120	98
Antimony	0.2	<	12.0	100	11.9	99
Arsenic	1	<	60.0	100	59.9	100
Barium	5	<	59.4	99	59.3	99
Beryllium	0.2	<	58.4	98	59.9	100
Boron	30	<	56.5	93	58.2	96
Cadmium	0.1	<	28.7	96	28.3	94
Calcium	500	<	1460	98	1460	98
Chromium	1	<	58.1	97	58.2	97
Cobalt	0.2	1.20	60.2	98	59.8	98
Copper	1	<	59.3	97	59.9	98
Iron	200	<	300	100	306	102
Lead	0.5	<	62.7	104	61.6	103
Lithium	0.5	<	10.2	86	11.1	94
Magnesium	10	<	292	97	297	98
Manganese	0.5	<	59.2	99	58.9	98
Molybdenum	0.2	<	29.8	99	29.1	97
Nickel	0.2	0.720	58.7	97	58.6	96
Phosphorus	100	<	1410	96	1420	96
Potassium	100	<	1410	95	1400	94
Selenium	2	<	55.8	93	57.0	95
Silver	0.2	<	30.1	100	29.7	99
Sodium	30	41.0	1420	92	1410	91
Strontium	0.2	<	59.4	99	58.0	97
Tin	0.3	<	29.2	97	28.2	94
Titanium	10	<	57.4	96	57.4	96
Vanadium	1	<	57.9	97	57.7	96
Zinc	6	<	117	98	116	97
Sulphur	10000	<	12200	92	12600	95
Silicon	150	<	3180	103	3170	102

ALS Environmental

Sample QC Summary Report

Sample Name		24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1
ALS Sample ID		L2754873-1	L2754873-1	MS	MS	MSD	MSD
Matrix		Stack	Stack	Stack	Stack	Stack	Stack
Analysis Type		Sample	Duplicate	Matrix Spike	Matrix Spike	Matrix Spike Dup	Matrix Spike Dup
Sampling Date		5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24
Date of Receipt		8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24
Multi-Metals via ICP-MS	**LOR ug**	**ug**	**ug**	**ug**	**% Rec**	**ug**	**% Rec**
Front Half HNO3 Fraction 1A							
Aluminum	20	43.4	40.0	281	99	277	97
Antimony	0.2	<	<	23.5	97	24.0	99
Arsenic	1	<	<	121	101	124	103
Barium	5	16.4	16.6	118	85	120	87
Beryllium	0.2	<	<	123	103	123	102
Boron	30	37.1	37.9	157	100	156	99
Cadmium	0.1	0.549	0.579	58.8	97	58.7	97
Calcium	500	<	<	3060	98	3120	100
Chromium	1	24.4	23.7	144	99	140	97
Cobalt	0.2	1.09	0.945	119	98	118	98
Copper	1	5.87	5.69	125	99	125	99
Iron	200	336	327	917	97	917	97
Lead	0.5	<	0.531	111	92	110	91
Lithium	0.5	<	<	23.0	95	22.7	93
Magnesium	10	19.2	18.8	611	99	616	99
Manganese	0.5	28.6	27.7	145	97	143	95
Molybdenum	0.2	3.64	3.83	60.6	95	61.6	97
Nickel	0.2	18.1	17.2	136	98	136	99
Phosphorus	100	<	<	2800	94	2790	93
Potassium	100	318	352	3200	96	3170	95
Selenium	2	7.57	7.44	123	96	123	97
Silver	0.2	<	<	57.6	96	59.3	99
Sodium	30	745	724	3610	96	3590	95
Strontium	0.2	0.534	0.546	115	95	121	100
Tin	0.3	14.7	15.3	71.1	94	70.3	93
Titanium	10	<	<	121	97	120	96
Vanadium	1	<	<	116	97	116	97
Zinc	6	41.0	39.2	275	97	278	99
Sulphur	10000	<	<	27000	93	27100	94
Silicon	150	2290	2220	11000	97	11300	101

ALS Environmental

Sample Analysis Summary Report

Sample Name		24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(7 THRU 12) TEST#2	24-22326-PM-(13 THRU 18) TEST#3	24-22326-PM-(19 THRU 24) BLANK	MB
ALS Sample ID		L2754873-1	L2754873-2	L2754873-3	L2754873-4	L2754873-MB
Matrix		Stack	Stack	Stack	Stack	n/a
Analysis Type		Sample	Sample	Sample	Sample	Sample
Sampling Date		5-Mar-24	6-Mar-24	7-Mar-24	6-Mar-24	n/a
Date of Receipt		8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	n/a
Multi-Metals via ICP-MS	**LOR**					
	ug	**ug**	**ug**	**ug**	**ug**	**ug**
Front Half HF Fraction 1A						
Aluminum	20	130	132	139	135	125
Antimony	0.2	<	<	<	<	<
Arsenic	1	<	<	<	<	<
Barium	5	33.3	32.0	34.3	36.4	<
Beryllium	0.2	<	<	<	<	<
Boron	30	38.1	34.5	36.3	31.5	<
Cadmium	0.1	<	<	<	<	<
Calcium	500	<	<	<	<	<
Chromium	1	3.85	7.71	3.48	2.09	1.76
Cobalt	0.2	<	<	<	<	0.213
Copper	1	1.77	1.13	<	1.23	5.66
Iron	200	<	<	<	<	<
Lead	0.5	<	<	<	<	<
Lithium	0.5	<	<	<	<	<
Magnesium	10	31.4	32.6	31.1	35.0	39.8
Manganese	0.5	3.09	3.77	4.17	0.948	2.00
Molybdenum	0.2	18.0	18.1	18.0	17.9	31.6
Nickel	0.2	2.21	4.26	1.73	0.780	1.14
Phosphorus	100	<	<	<	<	<
Potassium	100	<	<	<	<	<
Selenium	2	<	2.46	2.56	<	<
Silver	0.2	<	<	<	<	<
Sodium	30	151	131	130	132	57.5
Strontium	0.2	0.609	0.564	0.597	0.645	0.525
Tin	0.3	2.09	1.72	2.80	2.44	0.867
Titanium	10	<	<	<	<	<
Vanadium	1	<	<	<	<	<
Zinc	6	31.3	29.2	30.1	30.7	7.83
Sulphur	10000	<	<	<	<	<
Silicon	150	nq	nq	nq	nq	nq

ALS Environmental

Sample QC Summary Report

Sample Name		**RB**	**LCS**	**LCS**	**LCSD**	**LCSD**
ALS Sample ID		RB	LCS	LCS	LCSD	LCSD
Matrix		Stack	Stack	Stack	Stack	Stack
Analysis Type		Blank	LCS	LCS	LCS	LCS
Sampling Date		n/a	n/a	n/a	n/a	n/a
Date of Receipt		n/a	n/a	n/a	n/a	n/a
Multi-Metals via ICP-MS	**LOR**					
	ug	**ug**	**ug**	**% Rec**	**ug**	**% Rec**
Front Half HF Fraction 1A						
Aluminum	20	<	125	102	117	96
Antimony	0.2	<	11.9	99	11.7	98
Arsenic	1	<	61.2	102	60.2	100
Barium	5	<	60.9	101	60.1	100
Beryllium	0.2	<	60.8	101	58.8	98
Boron	30	<	56.7	94	56.3	93
Cadmium	0.1	<	28.4	95	28.6	95
Calcium	500	<	1490	101	1460	99
Chromium	1	<	60.1	100	57.9	97
Cobalt	0.2	<	59.9	100	58.6	97
Copper	1	<	60.5	100	58.7	97
Iron	200	<	310	103	299	100
Lead	0.5	<	60.0	100	60.6	101
Lithium	0.5	<	11.1	91	10.6	87
Magnesium	10	<	303	100	287	95
Manganese	0.5	<	59.6	99	57.5	96
Molybdenum	0.2	<	29.5	98	29.4	98
Nickel	0.2	<	60.1	100	57.6	96
Phosphorus	100	<	1330	92	1430	99
Potassium	100	<	1490	100	1420	96
Selenium	2	<	56.5	94	57.1	95
Silver	0.2	<	30.0	100	29.8	99
Sodium	30	<	1460	95	1430	93
Strontium	0.2	<	59.4	99	58.5	97
Tin	0.3	<	28.2	94	28.8	96
Titanium	10	<	60.2	100	57.2	95
Vanadium	1	<	60.1	100	58.2	97
Zinc	6	<	120	100	117	97
Sulphur	10000	<	12200	89	11800	87
Silicon	150	nq	nq	nq	nq	nq

ALS Environmental

Sample QC Summary Report

Sample Name		24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1
ALS Sample ID		L2754873-1	L2754873-1	MS	MS	MSD	MSD
Matrix		Stack	Stack	Stack	Stack	Stack	Stack
Analysis Type		Sample	Duplicate	Matrix Spike	Matrix Spike	Matrix Spike Dup	Matrix Spike Dup
Sampling Date		5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24
Date of Receipt		8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24
Multi-Metals via ICP-MS	**LOR**						
	ug	**ug**	**ug**	**ug**	**% Rec**	**ug**	**% Rec**
Front Half HF Fraction 1A							
Aluminum	20	130	135	376	102	361	96
Antimony	0.2	<	<	24.8	103	24.1	100
Arsenic	1	<	<	124	103	122	101
Barium	5	33.3	34.3	135	84	142	90
Beryllium	0.2	<	<	120	100	116	96
Boron	30	38.1	38.1	152	95	144	89
Cadmium	0.1	<	<	57.8	96	59.5	99
Calcium	500	<	<	3050	101	3040	100
Chromium	1	3.85	3.85	124	100	123	99
Cobalt	0.2	<	<	121	101	119	99
Copper	1	1.77	1.71	124	102	122	100
Iron	200	<	<	683	106	661	102
Lead	0.5	<	<	112	93	110	91
Lithium	0.5	<	<	21.9	92	20.8	87
Magnesium	10	31.4	30.0	645	102	625	99
Manganese	0.5	3.09	3.15	123	100	122	99
Molybdenum	0.2	18.0	18.1	77.9	100	75.6	96
Nickel	0.2	2.21	2.22	122	100	120	98
Phosphorus	100	<	<	2830	96	2860	96
Potassium	100	<	<	3040	100	2950	97
Selenium	2	<	<	116	96	117	97
Silver	0.2	<	<	61.0	102	59.7	99
Sodium	30	151	154	3100	98	3070	97
Strontium	0.2	0.609	0.615	126	104	119	99
Tin	0.3	2.09	1.78	58.6	94	60.7	98
Titanium	10	<	<	123	99	122	98
Vanadium	1	<	<	121	101	119	99
Zinc	6	31.3	31.5	270	100	267	98
Sulphur	10000	<	<	22500	85	22100	83
Silicon	150	nq	nq	nq	nq	nq	nq

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Sample Analysis Summary Report

Sample Name		**24-22326-PM-(1 THRU 6) TEST#1**	**24-22326-PM-(7 THRU 12) TEST#2**	**24-22326-PM-(13 THRU 18) TEST#3**	**24-22326-PM-(19 THRU 24) BLANK**
ALS Sample ID		L2754873-1	L2754873-2	L2754873-3	L2754873-4
Matrix		Stack	Stack	Stack	Stack
Analysis Type		Sample	Sample	Sample	Sample
Sampling Date		5-Mar-24	6-Mar-24	7-Mar-24	6-Mar-24
Date of Receipt		8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24
Multi-Metals via ICP-MS	**LOR**				
	ug	**ug**	**ug**	**ug**	**ug**
Back Half (HNO3 / H2O2) Fraction 2A					
Aluminum	5	934	1270	1140	9.07
Antimony	0.1	0.140	0.135	0.162	<
Arsenic	0.2	0.767	1.19	0.798	<
Barium	0.5	2.18	2.27	3.42	1.04
Beryllium	0.1	<	<	<	<
Boron	1000	12300	13600	12000	<
Cadmium	0.05	0.474	0.356	0.672	<
Calcium	100	499	644	594	160
Chromium	0.15	11.8	16.9	17.6	0.461
Cobalt	0.1	0.446	0.401	0.293	<
Copper	0.3	37.3	11.6	17.1	5.00
Iron	15	131	205	184	<
Lead	0.05	0.947	0.800	0.800	0.188
Lithium	0.25	0.654	1.02	0.713	<
Magnesium	5	28.3	65.8	69.6	13.5
Manganese	0.15	9.46	8.07	26.4	0.527
Molybdenum	0.1	1.08	2.17	2.39	<
Nickel	0.1	17.3	15.8	13.2	0.308
Phosphorus	25	<	<	<	<
Potassium	100	123	124	129	<
Selenium	1	117	236	135	<
Silver	0.1	0.224	0.291	0.186	<
Sodium	20	2660	3610	3250	340
Strontium	0.1	0.884	1.15	1.10	0.210
Tin	0.1	25.5	24.1	27.2	19.8
Titanium	1	7.14	10.7	9.71	<
Vanadium	0.1	0.137	0.215	0.281	<
Zinc	3	25.9	14.6	17.7	<
Sulphur	300000	1010000	1850000	1920000	<
Silicon	75	9790	19900	13700	121

ALS Environmental

Sample QC Summary Report

Sample Name		**RB**	**LCS**	**LCS**	**LCSD**	**LCSD**
ALS Sample ID		RB	LCS	LCS	LCSD	LCSD
Matrix		Stack	Stack	Stack	Stack	Stack
Analysis Type		Blank	LCS	LCS	LCS	LCS
Sampling Date		n/a	n/a	n/a	n/a	n/a
Date of Receipt		n/a	n/a	n/a	n/a	n/a
Multi-Metals via ICP-MS	**LOR**					
	ug	**ug**	**ug**	**% Rec**	**ug**	**% Rec**
Back Half (HNO3 / H2O2) Fraction 2A						
Aluminum	5	<	60.5	100	62.5	103
Antimony	0.1	<	5.60	93	5.67	95
Arsenic	0.2	<	29.1	97	29.4	98
Barium	0.5	<	29.6	99	29.4	98
Beryllium	0.1	<	28.5	95	28.0	94
Boron	10	<	36.4	119	37.2	122
Cadmium	0.05	<	14.1	94	14.2	94
Calcium	100	<	737	98	718	96
Chromium	0.15	<	29.2	97	29.2	97
Cobalt	0.1	<	29.4	98	29.2	97
Copper	0.3	<	29.3	98	29.6	99
Iron	15	<	150	100	149	99
Lead	0.05	0.176	29.5	98	30.2	100
Lithium	0.25	<	5.02	85	4.82	82
Magnesium	5	<	145	96	150	100
Manganese	0.15	<	28.9	96	29.1	97
Molybdenum	0.1	<	13.9	93	14.2	95
Nickel	0.1	<	29.2	97	29.0	96
Phosphorus	25	<	665	90	712	96
Potassium	100	<	701	93	708	94
Selenium	1	<	28.4	95	27.6	92
Silver	0.1	<	14.4	96	14.4	96
Sodium	20	<	713	95	718	95
Strontium	0.1	<	29.8	99	29.7	99
Tin	0.1	5.03	14.2	95	14.4	96
Titanium	1	<	28.4	95	28.7	96
Vanadium	0.1	<	29.1	97	28.9	96
Zinc	3	<	57.1	95	58.0	97
Sulphur	3000	<	5210	86	5190	86
Silicon	75	<	1460	97	1460	97

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Sample QC Summary Report

Sample Name		24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(1 THRU 6) TEST#1
ALS Sample ID		L2754873-1	L2754873-1	MS	MS	MSD	MSD
Matrix		Stack	Stack	Stack	Stack	Stack	Stack
Analysis Type		Sample	Duplicate	Matrix Spike	Matrix Spike	Matrix Spike Dup	Matrix Spike Dup
Sampling Date		5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24
Date of Receipt		8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24
Multi-Metals via ICP-MS	**LOR**						
	ug	**ug**	**ug**	**ug**	**% Rec**	**ug**	**% Rec**
Back Half (HNO3 / H2O2) Fraction 2A							
Aluminum	5	934	932	nq	nq	nq	nq
Antimony	0.1	0.140	0.134	12.3	101	11.7	97
Arsenic	0.2	0.767	0.759	66.1	109	66.8	110
Barium	0.5	2.18	2.12	51.2	82	49.3	79
Beryllium	0.1	<	<	58.0	97	58.3	97
Boron	10	12300	12500	17100	80	17700	90
Cadmium	0.05	0.474	0.459	30.9	101	30.4	100
Calcium	100	499	573	2060	104	2040	103
Chromium	0.15	11.8	11.6	72.8	102	73.5	103
Cobalt	0.1	0.446	0.428	61.8	102	63.0	104
Copper	0.3	37.3	37.9	99.8	104	101	105
Iron	15	131	132	429	99	448	106
Lead	0.05	0.947	0.903	57.5	94	55.7	91
Lithium	0.25	0.654	0.905	11.4	89	11.4	90
Magnesium	5	28.3	27.5	326	99	333	102
Manganese	0.15	9.46	9.31	67.7	97	69.3	100
Molybdenum	0.1	1.08	1.11	30.8	99	29.8	96
Nickel	0.1	17.3	17.7	77.8	101	80.0	105
Phosphorus	25	<	<	1400	94	1420	95
Potassium	100	123	107	1550	95	1570	97
Selenium	1	117	115	nq	nq	nq	nq
Silver	0.1	0.224	0.228	30.0	99	29.1	96
Sodium	20	2660	2740	4310	110	4370	114
Strontium	0.1	0.884	0.899	62.6	103	59.7	98
Tin	0.1	25.5	24.1	55.1	99	54.1	95
Titanium	1	7.14	7.03	64.9	96	66.4	99
Vanadium	0.1	0.137	0.149	59.9	100	60.4	101
Zinc	3	25.9	25.8	141	96	144	99
Sulphur	3000	1050000	1030000	nq	nq	nq	nq
Silicon	75	9790	9760	13600	84	13500	83

ALS Environmental
1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	ORTECH
ALS Project ID:	ORT100	**Client Address:**	804 Southdown Road Mississauga, ON L5J 2Y4 Canada
ALS WO#:	L2754873		
Date of Report	27-Mar-24		
Date of Sample Receipt	8-Mar-24	**Client Contact:**	Chris Belore
		Client Project ID:	22326 Clean Harbors

COMMENTS:

Sample Preparation via USEPA Method 29 (KC11 26-Mar-2024)
Mercury Analysis via CVAA using Method USEPA 7470A (KC11 27-Mar-2024)

LOR = Limit of Reporting
LCB = Laboratory Control Blank (limits: <LOR)
LCS = Laboratory Control Sample (limits: hivol, solids: 85-115%, stack: 90-110%)
MS = Matrix Spike Sample (limits: 75-125%)
RPD = Relative Percent Difference (limits: <20%)
CCV/CVS = Calibration Verification Standard (limits: 85-115%)

Certified by: L. Wrona
Lynne Wrona
Project Manager

ALS Environmental

Sample Analysis Summary Report

Sample Name	LOR	24-22326-PM-(1 THRU 6) TEST#1	24-22326-PM-(7 THRU 12) TEST#2	24-22326-PM-(13 THRU 18) TEST#3	24-22326-PM-(19 THRU 24) BLANK
ALS Sample ID		L2754873-1	L2754873-2	L2754873-3	L2754873-4
Matrix		Stack	Stack	Stack	Stack
Analysis type		Sample	Sample	Sample	Sample
Sampling Date/Time		5-Mar-24	6-Mar-24	7-Mar-24	6-Mar-24
Date of Receipt		8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24
Mercury via CVAA	**LOR**				
Method 29	**ug**	**ug**	**ug**	**ug**	**ug**
Analytical Fraction 1B (Nitric)	0.015	0.111	0.113	0.0801	<0.015
Analytical Fraction 1B	0.015	<0.015	0.0156	0.0198	<0.015
Analytical Fraction 2B	0.050	<1.8625	6.23	4.05	<0.1925
Analytical Fraction 3B	0.025	1.00	0.0805	0.168	<0.025
Analytical Fraction 3C	0.25	2.38	6.85	2.63	<0.25

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Sample QC Summary Report

Sample Name		LCB	LCS	LCS	LCSD	LCSD
ALS Sample ID		LCB	LCS	LCS	LCSD	LCSD
Analysis type		Method Blank	Blank Spike	Blank Spike	Blank Spike Dup	Blank Spike Dup
Sampling Date/Time		n/a	n/a	n/a	n/a	n/a
Date of Receipt		n/a	n/a	n/a	n/a	n/a
Mercury via CVAA	**LOR**					
Method 29	ug	**ug**	**ug**	**% Rec**	**ug**	**% Rec**
Analytical Fraction 1B (Nitric)	0.015	<0.015	0.285	95%	0.282	94%
Analytical Fraction 1B	0.015	<0.015	0.275	92%	0.279	93%
Analytical Fraction 2B	0.050	<0.05	0.943	95%	0.944	95%
Analytical Fraction 3B	0.025	<0.025	0.455	91%	0.449	90%
Analytical Fraction 3C	0.25	<0.25	4.51	90%	4.52	91%

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Sample QC Summary Report

Sample Name		**24-22326-PM-(1 THRU 6) TEST#1**	**24-22326-PM-(1 THRU 6) TEST#1**	**24-22326-PM-(1 THRU 6) TEST#1**	**24-22326-PM-(1 THRU 6) TEST#1**	**24-22326-PM-(1 THRU 6) TEST#1**	**24-22326-PM-(1 THRU 6) TEST#1**
ALS Sample ID		L2754873-1	L2754873-1DUP	L2754873-1MS	L2754873-1MS	L2754873-1MSD	L2754873-1MSD
Matrix		Stack	Stack	Stack	Stack	Stack	Stack
Analysis type		Sample	Duplicate	Matrix Spike	Matrix Spike	Matrix Spike Dup	Matrix Spike Dup
Sampling Date/Time		5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24	5-Mar-24
Date of Receipt		8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24	8-Mar-24
Mercury via CVAA	**LOR**						
Method 29	**ug**	**ug**	**ug**	**ug**	**% Rec**	**ug**	**% Rec**
Analytical Fraction 1B (Nitric)	0.015	0.111	0.119	0.414	101%	0.411	100%
Analytical Fraction 1B	0.015	<0.015	<0.015	0.296	95%	0.291	93%
Analytical Fraction 2B	0.050	<1.8625	<1.8625	36.7	94%	36.2	93%
Analytical Fraction 3B	0.025	1.00	0.995	1.39	78%	1.40	80%
Analytical Fraction 3C	0.250	2.38	2.40	6.75	87%	6.90	90%

APPENDIX 9

Semi-Volatile Organic Compounds Sample Recovery Data Sheets
(4 pages)

ORTECH Semi-Volatile Organics Train Recovery Data Sheet

Client : Clean Habors
Project No.: 22326
Sample Batch No.: 24-22326-SVOC-

Test No.: 1
Test Date: MARCH 5, 2024
Test Location: Incinerator Stack

Sample ID 1 — Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser

CONTAINER TS1

Empty Wt:	407.9
After Acetone/ Hexane Rinse:	668.9
Total TS1:	261.0

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

Sample ID 2 — Filter

CONTAINER TS2

Colour: WHITE

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

Sample ID 3 — XAD-II Trap

CONTAINER TS3

Initial Wt:	649.3
Final Wt:	676.5
1 Gain:	28.2
Colour:	WHITE

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

Sample ID 4 — Impingers 1, 2 & 3

CONTAINER TS4

Impinger #1 Jumbo K.O.	
Empty Wt:	700.4
Final Wt:	2327.8
2 Gain:	1627.4
Colour:	CLEAR

Impinger #2 Ethylene Glycol	
Empty Wt:	554.9
Initial Wt:	662.2
Final Wt:	690.6
3 Gain:	28.4
Colour:	CLEAR

Impinger #3 Empty	
Empty Wt:	490.7
Final Wt:	491.7
4 Gain:	1.0
Colour:	CLEAR

Container TS4 Weights	
Empty Wt:	849.8
With Imp Soln:	4707.6
After ~100g H_2O Rinse:	4831.5
Total TS4:	3481.7

CWTR = 1 + 2 + 3 + 4: ~~1685.0~~ 3222.1 3221.1

WCBDA=5: 13.1

Sample ID 5 — Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers

CONTAINER TS5

Empty Wt:	4088.9
After Acetone/ Hexane Rinse:	6040.
Total TS5:	195.1

Impinger 4 Silica Gel

CONTAINER TS6 (Impinger)

Initial Wt:	974.3
Final Wt:	987.4
5 Gain:	13.1
% Spent:	20

Impinger Box ID: 4

Train & Proofing Identification	
Glassware Train Proofing Provided By:	ALS
Trap ID:	8
HPLC Batch No.:	ALS
Ethylene Gylcol Batch No.:	
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By: BP
Train Recovered By: JG

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

ORTECH Semi-Volatile Organics Train Recovery Data Sheet

Client : Clean Habors
Project No.: 22326
Sample Batch No.: 24-22326-SVOC-

Test No.: 2
Test Date: MARCH 6, 2024
Test Location: Incinerator Stack

Sample ID 6 — Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser

CONTAINER TS1

Empty Wt:	408.9
After Acetone/ Hexane Rinse:	691.8
Total TS1:	282.9

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

Sample ID 7 — Filter

CONTAINER TS2

Colour: WHITE

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

Sample ID 8 — XAD-II Trap

CONTAINER TS3

	Initial Wt:	652.6
	Final Wt:	675.8
1	Gain:	23.2
	Colour:	WHITE

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

Sample ID 9 — Impingers 1, 2 & 3

CONTAINER TS4

	Impinger #1 Jumbo K.O.	
	Empty Wt:	707.7
	Final Wt:	6342.5
2	Gain:	5634.8
	Colour:	CLEAR

	Impinger #2 Ethylene Glycol	
	Empty Wt:	554.6
	Initial Wt:	661.5
	Final Wt:	~~688.2~~ 689.2
3	Gain:	~~79.1~~ 27.7
	Colour:	CLEAR

	Impinger #3 Empty	
	Empty Wt:	~~657.8~~ 659.4
	Final Wt:	660.1
4	Gain:	0.7
	Colour:	CLEAR

Container TS4 Weights	
Empty Wt:	1458.3
With Imp Soln:	5044.8
After ~100g H_2O Rinse:	5202.8
Total TS4:	~~75~~ 3744.5

CWTR = 1 + 2 + 3 + 4: ~~5687.8~~ ~~3468.8~~ 3467.4

WCBDA=5: 12.9

Sample ID 10 — Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers

CONTAINER TS5

Empty Wt:	283.9
After Acetone/ Hexane Rinse:	432.8
Total TS5:	148.9

Impinger Box ID: 6

Impinger 4 — Silica Gel

CONTAINER TS6 (Impinger)

	Initial Wt:	961.4
	Final Wt:	974.3
5	Gain:	12.9
	% Spent:	20

Train & Proofing Identification	
Glassware Train Proofing Provided By:	ALS
Trap ID:	9
HPLC Batch No.:	ALS
Ethylene Gylcol Batch No.:	
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By: BP
Train Recovered By: JG

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

ORTECH Semi-Volatile Organics Train Recovery Data Sheet

Client : Clean Habors
Project No.: 22326
Sample Batch No.: 24-22326-SVOC-

Test No.: ~~3~~ 7
Test Date: MARCH ~~5~~, 2024
Test Location: Incinerator Stack

Sample ID	11
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	
CONTAINER TS1	
Empty Wt:	409.2
After Acetone/ Hexane Rinse:	765.7
Total TS1:	356.5
MARK FLUID LEVEL	
SEAL AND LABEL CONTAINER TS1	

Sample ID	12
Filter	
CONTAINER TS2	
Colour:	WHITE
FOLD IN FOIL	
SEAL AND LABEL CONTAINER TS2	

Sample ID	13
XAD-II Trap	
CONTAINER TS3	
Initial Wt:	643.8
Final Wt:	~~676.5~~ 675.2
1 Gain:	~~31.8~~ 31.4
Colour:	WHITE
SEAL TRAP	
WRAP IN FOIL	
LABEL AS CONTAINER TS3	

Sample ID	14
Impingers 1, 2 & 3	
CONTAINER TS4	

Impinger #1 Jumbo K.O.	
Empty Wt:	722.6
Final Wt:	4132.0
2 Gain:	3409.4
Colour:	CLEAR

Impinger #2 Ethylene Glycol	
Empty Wt:	537.6
Initial Wt:	639.1
Final Wt:	630.6
3 Gain:	-8.5
Colour:	CLEAR

Impinger #3 Empty	
Empty Wt:	651.0
Final Wt:	652.0
4 Gain:	1.0 ~~2.0~~
Colour:	CLEAR

Container TS4 Weights	
Empty Wt:	~~5189.9~~ 1784.0
With Imp Soln:	~~5189.9~~ 5271.0
After ~100g H_2O Rinse:	5410.1
Total TS4:	

CWTR = 1 + 2 + 3 + 4:	~~3434.4~~ 3433.3
WCBDA=5:	16.6

Sample ID	15
Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	
CONTAINER TS5	
Empty Wt:	285.9
After Acetone/ Hexane Rinse:	527.3
Total TS5:	

Impinger 4 Silica Gel	
CONTAINER TS6 (Impinger)	
Initial Wt:	949.5
Final Wt:	966.1
5 Gain:	16.6
% Spent:	

Impinger Box ID: 15

Train & Proofing Identification	
Glassware Train Proofing Provided By:	ALS
Trap ID:	10
HPLC Batch No.:	ALS
Ethylene Gylcol Batch No.:	
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By: BF
Train Recovered By: JG

2367.0

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

ORTECH Semi-Volatile Organics Train Recovery Data Sheet

Client : Clean Habors
Project No.: 22326
Sample Batch No.: 24-22326-SVOC-

Test No.: BLANK
Test Date: MARCH 7, 2024
Test Location: Incinerator Stack

Sample ID 16	Sample ID 17	Sample ID 18	Sample ID 19	Sample ID 20	
Nozzle, Probe Liner, Cyclone Bypass, F.H. & B.H. Filter Housing, Frit & Connecting Glassware to Top of Condenser	Filter	XAD-II Trap	Impingers 1, 2 & 3	Back-Half Rinses Trap Bottom U-Tube, Imp. Inlet Stem, U-Tubes and Impingers	Impinger 4 Silica Gel
CONTAINER TS1	CONTAINER TS2	CONTAINER TS3	CONTAINER TS4	CONTAINER TS5	CONTAINER TS6 (Impinger)

TS1

Empty Wt:	283.9
After Acetone/ Hexane Rinse:	401.3
Total TS1:	117.4

MARK FLUID LEVEL

SEAL AND LABEL CONTAINER TS1

TS2

Colour: WHITE

FOLD IN FOIL

SEAL AND LABEL CONTAINER TS2

TS3

Initial Wt:	638.3
Final Wt:	/
1 Gain:	
Colour:	WHITE

SEAL TRAP

WRAP IN FOIL

LABEL AS CONTAINER TS3

TS4

Impinger #1 Jumbo K.O.	
Empty Wt:	/
Final Wt:	
2 Gain:	
Colour:	

Impinger #2 Ethylene Glycol	
Empty Wt:	/
Initial Wt:	
Final Wt:	
3 Gain:	
Colour:	

Impinger #3 Empty	
Empty Wt:	/
Final Wt:	
4 Gain:	
Colour:	

Container TS4 Weights	
Empty Wt:	283.7
With Imp Soln:	291.8
After ~100g H_2O Rinse:	491.1
Total TS4:	207.4

TS5

Empty Wt:	284.0
After Acetone/ Hexane Rinse:	417.6
Total TS5:	133.6

TS6

Initial Wt:	/
Final Wt:	
5 Gain:	
% Spent:	

Impinger Box ID: /

Train & Proofing Identification	
Glassware Train Proofing Provided By:	ALS
Trap ID:	6
HPLC Batch No.:	ALS
Ethylene Gylcol Batch No.:	
Hexane Batch No.:	
Acetone Batch No.:	

Train Loaded By: —
Train Recovered By: [signature]

CWTR = 1 + 2 + 3 + 4: /

WCBDA=S: /

TS1, TS4, TS5 - 1L Amber Glass Bottle
TS2 - Glass Petri Dish
TS3 - Glass Trap

BLANK

APPENDIX 10

Semi-Volatile Organic Compounds Analytical Report
(55 pages)

ALS Life Sciences
1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	ORTECH
ALS Project ID:	ORT100	**Client Address:**	804 Southdown Road
ALS WO#:	L2754888		Mississauga, ON
Date of Report	1-Apr-24		L5J 2Y4
Date of Sample Receipt	8-Mar-24	**Client Contact:**	Chris Belore
		Client Project ID:	22326 Clean Harbors

COMMENTS: **PCDD/F by EPA M23**

Certified by:

Steve Kennedy
Technical Supervisor

Results in this certificate relate only to the samples as submitted to the laboratory.

ALS Life Sciences

Sample Analysis summary Report

Sample Name	24-22326-SVOC- (1 THRU 5) TEST#1	24-22326-SVOC- (6 THRU 10) TEST#2	24-22326-SVOC- (11 THRU 15) TEST#3	24-22326-SVOC- (16 THRU 20) BLANK
ALS Sample ID	L2754888-1	L2754888-2	L2754888-3	L2754888-4
Sample Size	1	1	1	1
Sample size units	sample	sample	sample	sample
Percent Moisture	n/a	n/a	n/a	n/a
Sample Matrix	Stack	Stack	Stack	Stack
Sampling Date	5-Mar-24	6-Mar-24	7-Mar-24	6-Mar-24
Extraction Date	19-Mar-24	19-Mar-24	19-Mar-24	19-Mar-24
Target Analytes	pg	pg	pg	pg
2,3,7,8-TCDD	<4.1	<4.7	<4.8	<3.6
1,2,3,7,8-PeCDD	18.5	<23	<7.0	<2.6
1,2,3,4,7,8-HxCDD	<12	<13	<11	<2.6
1,2,3,6,7,8-HxCDD	<37	<52	37.6	<2.6
1,2,3,7,8,9-HxCDD	20.7	31.1	21.6	<2.4
1,2,3,4,6,7,8-HpCDD	151	213	146	<3.5
OCDD	103	124	83.2	<9.4
2,3,7,8-TCDF	<13	<15	<18	<2.9
1,2,3,7,8-PeCDF	<20	41.9	<33	<2.5
2,3,4,7,8-PeCDF	53.6	75.8	60.1	<2.2
1,2,3,4,7,8-HxCDF	19.3	28.0	23.7	<1.7
1,2,3,6,7,8-HxCDF	<41	<54	<39	<1.7
2,3,4,6,7,8-HxCDF	58.1	81.5	64.3	<1.7
1,2,3,7,8,9-HxCDF	14.7	17.8	14.4	<2.0
1,2,3,4,6,7,8-HpCDF	67.3	93.7	56.8	<1.9
1,2,3,4,7,8,9-HpCDF	<14	23.0	13.8	<2.2
OCDF	17.5	13.3	<10	<5.2
Field Spike Standards	% Rec	% Rec	% Rec	% Rec
37Cl4-2,3,7,8-TCDD	108	104	102	104
13C12-1,2,3,4,7,8-HxCDD	105	98	94	99
13C12-2,3,4,7,8-PeCDF	103	100	95	99
13C12-1,2,3,4,7,8-HxCDF	85	83	82	100
13C12-1,2,3,4,7,8,9-HpCDF	103	96	92	102
Extraction Standards				
13C12-2,3,7,8-TCDD	70	54	56	69
13C12-1,2,3,7,8-PeCDD	71	53	53	68
13C12-1,2,3,6,7,8-HxCDD	79	63	64	86
13C12-1,2,3,4,6,7,8-HpCDD	73	57	56	77
13C12-OCDD	57	46	43	59
13C12-2,3,7,8-TCDF	77	57	59	74
13C12-1,2,3,7,8-PeCDF	82	58	60	77
13C12-1,2,3,6,7,8-HxCDF	97	79	77	90
13C12-1,2,3,4,6,7,8-HpCDF	73	59	58	78
Cleanup Standard				
13C12-1,2,3,7,8,9-HxCDF	85	83	76	95
Homologue Group Totals	pg	pg	pg	pg
Total-TCDD	145	218	150	<3.6
Total-PeCDD	195	401	282	<2.6
Total-HxCDD	169	620	480	<2.6
Total-HpCDD	312	454	322	<3.5
Total-TCDF	338	382	487	<2.9
Total-PeCDF	325	796	609	<2.5
Total-HxCDF	350	401	352	<2.0
Total-HpCDF	102	205	99.3	<2.2
Toxic Equivalency - (WHO 2005)				
Lower Bound PCDD/F TEQ (WHO 2005)	48.1	43.2	36.4	0.00
Mid Point PCDD/F TEQ (WHO 2005)	61.2	81.9	50.1	4.39
Upper Bound PCDD/F TEQ (WHO 2005)	63.2	84.3	56.0	8.78

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Quality Control Summary Report

Sample Name	Method Blank	Laboratory Control Sample
ALS Sample ID	WG3788706-1	WG3788706-2
Sample Size	1	1
Sample size units	sample	n/a
Percent Moisture	n/a	n/a
Sample Matrix	MEDIA	MEDIA
Sampling Date	n/a	n/a
Extraction Date	19-Mar-24	19-Mar-24
Target Analytes	**pg**	**% Rec**
2,3,7,8-TCDD	<4.8	93
1,2,3,7,8-PeCDD	<3.6	113
1,2,3,4,7,8-HxCDD	<4.2	100
1,2,3,6,7,8-HxCDD	<4.1	99
1,2,3,7,8,9-HxCDD	<3.9	98
1,2,3,4,6,7,8-HpCDD	<4.8	101
OCDD	16.3	96
2,3,7,8-TCDF	<3.3	97
1,2,3,7,8-PeCDF	<2.5	101
2,3,4,7,8-PeCDF	<2.2	88
1,2,3,4,7,8-HxCDF	<1.7	89
1,2,3,6,7,8-HxCDF	<1.7	98
2,3,4,6,7,8-HxCDF	<1.7	89
1,2,3,7,8,9-HxCDF	<2.1	90
1,2,3,4,6,7,8-HpCDF	<2.6	102
1,2,3,4,7,8,9-HpCDF	<3.2	102
OCDF	<7.1	104
Field Spike Standards	**% Rec**	**% Rec**
37Cl4-2,3,7,8-TCDD	NS	NS
13C12-1,2,3,4,7,8-HxCDD	NS	NS
13C12-2,3,4,7,8-PeCDF	NS	NS
13C12-1,2,3,4,7,8-HxCDF	NS	NS
13C12-1,2,3,4,7,8,9-HpCDF	NS	NS
Extraction Standards		
13C12-2,3,7,8-TCDD	57	55
13C12-1,2,3,7,8-PeCDD	57	53
13C12-1,2,3,6,7,8-HxCDD	70	70
13C12-1,2,3,4,6,7,8-HpCDD	64	65
13C12-OCDD	52	54
13C12-2,3,7,8-TCDF	62	60
13C12-1,2,3,7,8-PeCDF	65	63
13C12-1,2,3,6,7,8-HxCDF	83	79
13C12-1,2,3,4,6,7,8-HpCDF	64	64
Cleanup Standard		
13C12-1,2,3,7,8,9-HxCDF	86	89
Homologue Group Totals	**pg**	
Total-TCDD	<4.8	
Total-PeCDD	<3.6	
Total-HxCDD	<4.2	
Total-HpCDD	<4.8	
Total-TCDF	<3.3	
Total-PeCDF	<2.5	
Total-HxCDF	<2.1	
Total-HpCDF	<3.2	
Toxic Equivalency - (WHO 2005)		
Lower Bound PCDD/F TEQ (WHO 2005)	0.00489	
Mid Point PCDD/F TEQ (WHO 2005)	5.76	
Upper Bound PCDD/F TEQ (WHO 2005)	11.5	

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(1 THRU 5) TEST#1**	Sampling Date	5-Mar-24	
ALS Sample ID	L2754888-1	Extraction Date	19-Mar-24	Approved:
Analysis Method	EPA M23	Sample Size	1 sample	*K.NGUYEN*
Analysis Type	Sample	Percent Moisture	n/a	--e-signature--
Sample Matrix	Stack	Split Ratio	10	26-Mar-2024

Run Information	**Run 1**
Filename	7-240328A10
Run Date	24-Mar-24 15:36
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS 7 ZB-DX-1161297

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
2,3,7,8-TCDD	1	NotFnd	<4.1	4.1	U		50
1,2,3,7,8-PeCDD	1	31.47	18.5	5.6	J		250
1,2,3,4,7,8-HxCDD	0.1	33.65	<12	3.6	J,R	12	250
1,2,3,6,7,8-HxCDD	0.1	33.72	<37	3.6	M,J,R	37	250
1,2,3,7,8,9-HxCDD	0.1	33.91	20.7	3.4	J		250
1,2,3,4,6,7,8-HpCDD	0.01	36.16	151	4.1	J		250
OCDD	0.0003	38.99	103	8.9	M,J,B		500
2,3,7,8-TCDF	0.1	27.89	<13	7.2	J,R	13	50
1,2,3,7,8-PeCDF	0.03	30.76	<20	3.2	J,R	20	250
2,3,4,7,8-PeCDF	0.3	31.37	53.6	2.8	J		250
1,2,3,4,7,8-HxCDF	0.1	33.08	19.3	1.9	J		250
1,2,3,6,7,8-HxCDF	0.1	33.17	<41	1.9	1.	41	250
2,3,4,6,7,8-HxCDF	0.1	33.60	58.1	1.9	J		250
1,2,3,7,8,9-HxCDF	0.1	34.29	14.7	2.3	M,J		250
1,2,3,4,6,7,8-HpCDF	0.01	35.23	67.3	4.0	J		250
1,2,3,4,7,8,9-HpCDF	0.01	36.81	<14	4.8	J,R	14	250
OCDF	0.0003	39.37	17.5	5.4	M,J		500
Field Spike Standards	**pg**		**% Rec**	**Limits**			
37Cl4-2,3,7,8-TCDD	1200	28.43	108	70-130			
13C12-1,2,3,4,7,8-HxCDD	12000	33.64	105	70-130			
13C12-2,3,4,7,8-PeCDF	12000	31.36	103	70-130			
13C12-1,2,3,4,7,8-HxCDF	12000	33.07	85	70-130			
13C12-1,2,3,4,7,8,9-HpCDF	12000	36.80	103	70-130			
Extraction Standards							
13C12-2,3,7,8-TCDD	10000	28.42	70	40-130			
13C12-1,2,3,7,8-PeCDD	10000	31.46	71	40-130			
13C12-1,2,3,6,7,8-HxCDD	10000	33.71	79	40-130			
13C12-1,2,3,4,6,7,8-HpCDD	10000	36.15	73	25-130			
13C12-OCDD	20000	38.99	57	25-130			
13C12-2,3,7,8-TCDF	10000	27.87	77	40-130			
13C12-1,2,3,7,8-PeCDF	10000	30.74	82	40-130			
13C12-1,2,3,6,7,8-HxCDF	10000	33.16	97	40-130			
13C12-1,2,3,4,6,7,8-HpCDF	10000	35.22	73	25-130			
Cleanup Standard	**pg**						
13C12-1,2,3,7,8,9-HxCDF	10000	34.27	85	40-130			

Homologue Group Totals	# peaks	Conc. pg	EDL pg	LQL
Total-TCDD	2	145	4.1	50
Total-PeCDD	3	195	5.6	250
Total-HxCDD	2	169	3.6	250
Total-HpCDD	2	312	4.1	250
Total-TCDF	8	338	7.2	50
Total-PeCDF	7	325	3.2	250
Total-HxCDF	10	350	2.3	250
Total-HpCDF	2	102	4.8	250

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	48.1
Mid Point PCDD/F TEQ (WHO 2005)	61.2
Upper Bound PCDD/F TEQ (WHO 2005)	63.2

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor
TEQ	Indicates the Toxic Equivalency
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that a target analyte was detected below the calibrated range.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
B	Indicates that this target was detected in the blank at greater than 10% of the sample concentration.
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC	Estimated Maximum Possible Concentration - elevated detection limit due to interference or positive id criterion failure
1.	This result is an EMPC

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(6 THRU 10) TEST#2**	Sampling Date	6-Mar-24		Approved:
ALS Sample ID	L2754888-2	Extraction Date	19-Mar-24		*K.NGUYEN*
Analysis Method	EPA M23	Sample Size	1	sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		26-Mar-2024
Sample Matrix	Stack	Split Ratio	10		

Run Information	**Run 1**
Filename	7-24032BA11
Run Date	24-Mar-24 16:20
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS 7 Z8-DX-1161297

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
2,3,7,8-TCDD	1	NotFnd	<4.7	4.7	U		50
1,2,3,7,8-PeCDD	1	31.49	<23	6.5	M,J,R	23	250
1,2,3,4,7,8-HxCDD	0.1	33.66	<13	5.8	J,R	13	250
1,2,3,6,7,8-HxCDD	0.1	33.73	<52	5.7	J,R	52	250
1,2,3,7,8,9-HxCDD	0.1	33.92	31.1	5.3	M,J		250
1,2,3,4,6,7,8-HpCDD	0.01	36.17	213	5.1	M,J		250
OCDD	0.0003	39.02	124	12	J,B		500
2,3,7,8-TCDF	0.1	27.89	<15	6.3	J,R	15	50
1,2,3,7,8-PeCDF	0.03	30.77	41.9	3.1	J		250
2,3,4,7,8-PeCDF	0.3	31.38	75.8	2.7	J		250
1,2,3,4,7,8-HxCDF	0.1	33.09	28.0	2.4	M,J		250
1,2,3,6,7,8-HxCDF	0.1	33.19	<54	2.3	1.	54	250
2,3,4,6,7,8-HxCDF	0.1	33.61	81.5	2.4	J		250
1,2,3,7,8,9-HxCDF	0.1	34.30	17.8	2.8	M,J		250
1,2,3,4,6,7,8-HpCDF	0.01	35.24	93.7	3.7	J		250
1,2,3,4,7,8,9-HpCDF	0.01	36.82	23.0	4.4	J		250
OCDF	0.0003	39.38	13.3	8.3	M,J		500
Field Spike Standards	pg		% Rec	Limits			
37Cl4-2,3,7,8-TCDD	1200	28.45	104	70-130			
13C12-1,2,3,4,7,8-HxCDD	12000	33.65	98	70-130			
13C12-2,3,4,7,8-PeCDF	12000	31.37	100	70-130			
13C12-1,2,3,4,7,8-HxCDF	12000	33.08	83	70-130			
13C12-1,2,3,4,7,8,9-HpCDF	12000	36.81	96	70-130			
Extraction Standards							
13C12-2,3,7,8-TCDD	10000	28.42	54	40-130			
13C12-1,2,3,7,8-PeCDD	10000	31.47	53	40-130			
13C12-1,2,3,6,7,8-HxCDD	10000	33.72	63	40-130			
13C12-1,2,3,4,6,7,8-HpCDD	10000	36.16	57	25-130			
13C12-OCDD	20000	39.01	46	25-130			
13C12-2,3,7,8-TCDF	10000	27.87	57	40-130			
13C12-1,2,3,7,8-PeCDF	10000	30.76	58	40-130			
13C12-1,2,3,6,7,8-HxCDF	10000	33.17	79	40-130			
13C12-1,2,3,4,6,7,8-HpCDF	10000	35.23	59	25-130			
Cleanup Standard	pg						
13C12-1,2,3,7,8,9-HxCDF	10000	34.29	83	40-130			
Homologue Group Totals		# peaks	Conc. pg	EDL pg			
Total-TCDD		4	218	4.7			50
Total-PeCDD		4	401	6.5			250
Total-HxCDD		4	620	5.8			250
Total-HpCDD		2	454	5.1			250
Total-TCDF		5	382	6.3			50
Total-PeCDF		11	796	3.1			250
Total-HxCDF		7	401	2.8			250
Total-HpCDF		4	205	4.4			250

Toxic Equivalency - (WHO 2005)	pg
Lower Bound PCDD/F TEQ (WHO 2005)	43.2
Mid Point PCDD/F TEQ (WHO 2005)	81.9
Upper Bound PCDD/F TEQ (WHO 2005)	84.3

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor
TEQ	Indicates the Toxic Equivalency
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that a target analyte was detected below the calibrated range.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
B	Indicates that this target was detected in the blank at greater than 10% of the sample concentration.
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure
1.	This result is an EMPC

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(11 THRU 15) TEST#3**	Sampling Date	7-Mar-24
ALS Sample ID	L2754888-3	Extraction Date	19-Mar-24
Analysis Method	EPA M23	Sample Size	1 sample
Analysis Type	Sample	Percent Moisture	n/a
Sample Matrix	Stack	Split Ratio	10

Approved:
K.NGUYEN
--e-signature--
26-Mar-2024

Run Information	**Run 1**
Filename	7-24032BA12
Run Date	24-Mar-24 17:05
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS 7 ZB-DX-1161297

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	NotFnd	<4.8	4.8	U		50
1,2,3,7,8-PeCDD	1	NotFnd	<7.0	7.0	U		250
1,2,3,4,7,8-HxCDD	0.1	33.65	<11	3.7	J,R	11	250
1,2,3,6,7,8-HxCDD	0.1	33.73	37.6	3.6	J		250
1,2,3,7,8,9-HxCDD	0.1	33.91	21.6	3.4	J		250
1,2,3,4,6,7,8-HpCDD	0.01	36.17	146	5.0	J		250
OCDD	0.0003	39.03	83.2	12	J,B		500
2,3,7,8-TCDF	0.1	27.88	<18	4.2	J,R	18	50
1,2,3,7,8-PeCDF	0.03	30.77	<33	3.4	J,R	33	250
2,3,4,7,8-PeCDF	0.3	31.38	60.1	3.0	J		250
1,2,3,4,7,8-HxCDF	0.1	33.09	23.7	1.8	J		250
1,2,3,6,7,8-HxCDF	0.1	33.18	<39	1.8	1.	39	250
2,3,4,6,7,8-HxCDF	0.1	33.60	64.3	1.8	J		250
1,2,3,7,8,9-HxCDF	0.1	34.30	14.4	2.1	J		250
1,2,3,4,6,7,8-HpCDF	0.01	35.24	56.8	4.4	J		250
1,2,3,4,7,8,9-HpCDF	0.01	36.82	13.8	5.3	M,J		250
OCDF	0.0003	39.35	<10	9.0	M,J,R	10	500

Field Spike Standards	**pg**		**% Rec**	**Limits**
37Cl4-2,3,7,8-TCDD	1200	28.43	102	70-130
13C12-1,2,3,4,7,8-HxCDD	12000	33.65	94	70-130
13C12-2,3,4,7,8-PeCDF	12000	31.37	95	70-130
13C12-1,2,3,4,7,8-HxCDF	12000	33.08	82	70-130
13C12-1,2,3,4,7,8,9-HpCDF	12000	36.81	92	70-130
Extraction Standards				
13C12-2,3,7,8-TCDD	10000	28.42	56	40-130
13C12-1,2,3,7,8-PeCDD	10000	31.47	53	40-130
13C12-1,2,3,6,7,8-HxCDD	10000	33.72	64	40-130
13C12-1,2,3,4,6,7,8-HpCDD	10000	36.16	56	25-130
13C12-OCDD	20000	39.00	43	25-130
13C12-2,3,7,8-TCDF	10000	27.87	59	40-130
13C12-1,2,3,7,8-PeCDF	10000	30.74	60	40-130
13C12-1,2,3,6,7,8-HxCDF	10000	33.17	77	40-130
13C12-1,2,3,4,6,7,8-HpCDF	10000	35.23	58	25-130
Cleanup Standard	**pg**			
13C12-1,2,3,7,8,9-HxCDF	10000	34.28	76	40-130

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**	**LQL**
Total-TCDD	2	150	4.8	50
Total-PeCDD	2	282	7.0	250
Total-HxCDD	5	480	3.7	250
Total-HpCDD	2	322	5.0	250
Total-TCDF	10	487	4.2	50
Total-PeCDF	10	609	3.4	250
Total-HxCDF	9	352	2.1	250
Total-HpCDF	3	99.3	5.3	250

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	36.4
Mid Point PCDD/F TEQ (WHO 2005)	50.1
Upper Bound PCDD/F TEQ (WHO 2005)	56.0

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor
TEQ	Indicates the Toxic Equivalency
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that a target analyte was detected below the calibrated range.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
B	Indicates that this target was detected in the blank at greater than 10% of the sample concentration.
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure
1.	This result is an EMPC

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(16 THRU 20) BLANK**	Sampling Date	6-Mar-24		
ALS Sample ID	L2754888-4	Extraction Date	19-Mar-24		Approved:
Analysis Method	EPA M23	Sample Size	1	sample	*K.NGUYEN*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	Stack	Split Ratio	10		26-Mar-2024

Run Information	**Run 1**
Filename	7-24032BA09
Run Date	24-Mar-24 14:52
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS 7 ZB-DX-1161297

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	NotFnd	<3.6	3.6	U		50
1,2,3,7,8-PeCDD	1	NotFnd	<2.6	2.6	U		250
1,2,3,4,7,8-HxCDD	0.1	NotFnd	<2.6	2.6	U		250
1,2,3,6,7,8-HxCDD	0.1	NotFnd	<2.6	2.6	U		250
1,2,3,7,8,9-HxCDD	0.1	NotFnd	<2.4	2.4	U		250
1,2,3,4,6,7,8-HpCDD	0.01	NotFnd	<3.5	3.5	U		250
OCDD	0.0003	39.03	<9.4	8.5	M,J,R	9.4	500
2,3,7,8-TCDF	0.1	NotFnd	<2.9	2.9	U		50
1,2,3,7,8-PeCDF	0.03	NotFnd	<2.5	2.5	U		250
2,3,4,7,8-PeCDF	0.3	NotFnd	<2.2	2.2	U		250
1,2,3,4,7,8-HxCDF	0.1	NotFnd	<1.7	1.7	U		250
1,2,3,6,7,8-HxCDF	0.1	NotFnd	<1.7	1.7	U		250
2,3,4,6,7,8-HxCDF	0.1	NotFnd	<1.7	1.7	U		250
1,2,3,7,8,9-HxCDF	0.1	NotFnd	<2.0	2.0	U		250
1,2,3,4,6,7,8-HpCDF	0.01	NotFnd	<1.9	1.9	U		250
1,2,3,4,7,8,9-HpCDF	0.01	NotFnd	<2.2	2.2	U		250
OCDF	0.0003	NotFnd	<5.2	5.2	U		500
Field Spike Standards	**pg**		**% Rec**	**Limits**			
37Cl4-2,3,7,8-TCDD	1200	28.43	104	70-130			
13C12-1,2,3,4,7,8-HxCDD	12000	33.64	99	70-130			
13C12-2,3,4,7,8-PeCDF	12000	31.37	99	70-130			
13C12-1,2,3,4,7,8-HxCDF	12000	33.08	100	70-130			
13C12-1,2,3,4,7,8,9-HpCDF	12000	36.81	102	70-130			
Extraction Standards							
13C12-2,3,7,8-TCDD	10000	28.42	69	40-130			
13C12-1,2,3,7,8-PeCDD	10000	31.47	68	40-130			
13C12-1,2,3,6,7,8-HxCDD	10000	33.72	86	40-130			
13C12-1,2,3,4,6,7,8-HpCDD	10000	36.16	77	25-130			
13C12-OCDD	20000	39.00	59	25-130			
13C12-2,3,7,8-TCDF	10000	27.87	74	40-130			
13C12-1,2,3,7,8-PeCDF	10000	30.74	77	40-130			
13C12-1,2,3,6,7,8-HxCDF	10000	33.17	90	40-130			
13C12-1,2,3,4,6,7,8-HpCDF	10000	35.23	78	25-130			
Cleanup Standard	**pg**						
13C12-1,2,3,7,8,9-HxCDF	10000	34.28	95	40-130			

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**		
Total-TCDD	0	<3.6	3.6	U	50
Total-PeCDD	0	<2.6	2.6	U	250
Total-HxCDD	0	<2.6	2.6	U	250
Total-HpCDD	0	<3.5	3.5	U	250
Total-TCDF	0	<2.9	2.9	U	50
Total-PeCDF	0	<2.5	2.5	U	250
Total-HxCDF	0	<2.0	2.0	U	250
Total-HpCDF	0	<2.2	2.2	U	250

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	0.00
Mid Point PCDD/F TEQ (WHO 2005)	4.39
Upper Bound PCDD/F TEQ (WHO 2005)	8.78

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor
TEQ	Indicates the Toxic Equivalency
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that a target analyte was detected below the calibrated range.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a
ALS Sample ID	WG3788706-1	Extraction Date	19-Mar-24
Analysis Method	EPA M23	Sample Size	1 sample
Analysis Type	Blank	Percent Moisture	n/a
Sample Matrix	MEDIA	Split Ratio	10

Approved:
K.NGUYEN
--e-signature--
26-Mar-2024

Run Information	**Run 1**
Filename	7-24032BA07
Run Date	24-Mar-24 13:24
Final Volume	10 uL
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS 7 ZB-DX-1161297

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
2,3,7,8-TCDD	1	NotFnd	<4.8	4.8	U		50
1,2,3,7,8-PeCDD	1	NotFnd	<3.6	3.6	U		250
1,2,3,4,7,8-HxCDD	0.1	NotFnd	<4.2	4.2	U		250
1,2,3,6,7,8-HxCDD	0.1	NotFnd	<4.1	4.1	U		250
1,2,3,7,8,9-HxCDD	0.1	NotFnd	<3.9	3.9	U		250
1,2,3,4,6,7,8-HpCDD	0.01	NotFnd	<4.8	4.8	U		250
OCDD	0.0003	38.98	16.3	9.4	M,J		500
2,3,7,8-TCDF	0.1	NotFnd	<3.3	3.3	U		50
1,2,3,7,8-PeCDF	0.03	NotFnd	<2.5	2.5	U		250
2,3,4,7,8-PeCDF	0.3	NotFnd	<2.2	2.2	U		250
1,2,3,4,7,8-HxCDF	0.1	NotFnd	<1.7	1.7	U		250
1,2,3,6,7,8-HxCDF	0.1	NotFnd	<1.7	1.7	U		250
2,3,4,6,7,8-HxCDF	0.1	NotFnd	<1.7	1.7	U		250
1,2,3,7,8,9-HxCDF	0.1	NotFnd	<2.1	2.1	U		250
1,2,3,4,6,7,8-HpCDF	0.01	35.24	<2.6	2.6	U	1.6	250
1,2,3,4,7,8,9-HpCDF	0.01	NotFnd	<3.2	3.2	U		250
OCDF	0.0003	NotFnd	<7.1	7.1	U		500
Field Spike Standards	**pg**		**% Rec**	**Limits**			
37Cl4-2,3,7,8-TCDD	0		NS				
13C12-1,2,3,4,7,8-HxCDD	0		NS				
13C12-2,3,4,7,8-PeCDF	0		NS				
13C12-1,2,3,4,7,8-HxCDF	0		NS				
13C12-1,2,3,4,7,8,9-HpCDF	0		NS				
Extraction Standards							
13C12-2,3,7,8-TCDD	10000	28.42	57	40-130			
13C12-1,2,3,7,8-PeCDD	10000	31.46	57	40-130			
13C12-1,2,3,6,7,8-HxCDD	10000	33.71	70	40-130			
13C12-1,2,3,4,6,7,8-HpCDD	10000	36.15	64	25-130			
13C12-OCDD	20000	38.99	52	25-130			
13C12-2,3,7,8-TCDF	10000	27.87	62	40-130			
13C12-1,2,3,7,8-PeCDF	10000	30.74	65	40-130			
13C12-1,2,3,6,7,8-HxCDF	10000	33.16	83	40-130			
13C12-1,2,3,4,6,7,8-HpCDF	10000	35.22	64	25-130			
Cleanup Standard	**pg**						
13C12-1,2,3,7,8,9-HxCDF	10000	34.27	86	40-130			

Homologue Group Totals	**# peaks**	**Conc. pg**	**EDL pg**		
Total-TCDD	0	<4.8	4.8	U	50
Total-PeCDD	0	<3.6	3.6	U	250
Total-HxCDD	0	<4.2	4.2	U	250
Total-HpCDD	0	<4.8	4.8	U	250
Total-TCDF	0	<3.3	3.3	U	50
Total-PeCDF	0	<2.5	2.5	U	250
Total-HxCDF	0	<2.1	2.1	U	250
Total-HpCDF	0	<3.2	3.2	U	250

Toxic Equivalency - (WHO 2005)	**pg**
Lower Bound PCDD/F TEQ (WHO 2005)	0.00489
Mid Point PCDD/F TEQ (WHO 2005)	5.76
Upper Bound PCDD/F TEQ (WHO 2005)	11.5

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor — TEQ Indicates the Toxic Equivalency
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
NS	Indicates that this compound was not spiked.
J	Indicates that a target analyte was detected below the calibrated range.
R	Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3788706-2	Extraction Date	19-Mar-24
Analysis Method	EPA M23	Sample Size	1 n/a
Analysis Type	LCS	Percent Moisture	n/a
Sample Matrix	MEDIA	Split Ratio	10

Approved:
K.NGUYEN
--e-signature--
26-Mar-2024

Run Information	**Run 1**
Filename	7-24032BA02
Run Date	24-Mar-24 11:12
Final Volume	10 uL
Dilution Factor	1
Analysis Units	%
Instrument - Column	HRMS 7 ZB-DX-1161297

Target Analytes	**pg**	**Ret. Time**	**% Rec**	**Limits**	**Flags**
2,3,7,8-TCDD	1000	28.43	93	70-130	
1,2,3,7,8-PeCDD	5000	31.48	113	70-130	
1,2,3,4,7,8-HxCDD	5000	33.65	100	70-130	
1,2,3,6,7,8-HxCDD	5000	33.73	99	70-130	
1,2,3,7,8,9-HxCDD	5000	33.92	98	70-130	
1,2,3,4,6,7,8-HpCDD	5000	36.17	101	70-130	
OCDD	10000	39.01	96	70-130	
2,3,7,8-TCDF	1000	27.88	97	70-130	
1,2,3,7,8-PeCDF	5000	30.76	101	70-130	
2,3,4,7,8-PeCDF	5000	31.37	88	70-130	
1,2,3,4,7,8-HxCDF	5000	33.09	89	70-130	
1,2,3,6,7,8-HxCDF	5000	33.18	98	70-130	
2,3,4,6,7,8-HxCDF	5000	33.60	89	70-130	
1,2,3,7,8,9-HxCDF	5000	34.29	90	70-130	
1,2,3,4,6,7,8-HpCDF	5000	35.24	102	70-130	
1,2,3,4,7,8,9-HpCDF	5000	36.82	102	70-130	
OCDF	10000	39.38	104	70-130	
Field Spike Standards	**pg**		**% Rec**	**Limits**	
37Cl4-2,3,7,8-TCDD	0		NS		
13C12-1,2,3,4,7,8-HxCDD	0		NS		
13C12-2,3,4,7,8-PeCDF	0		NS		
13C12-1,2,3,4,7,8-HxCDF	0		NS		
13C12-1,2,3,4,7,8,9-HpCDF	0		NS		
Extraction Standards					
13C12-2,3,7,8-TCDD	10000	28.42	55	40-130	
13C12-1,2,3,7,8-PeCDD	10000	31.47	53	40-130	
13C12-1,2,3,6,7,8-HxCDD	10000	33.72	70	40-130	
13C12-1,2,3,4,6,7,8-HpCDD	10000	36.16	65	25-130	
13C12-OCDD	20000	39.00	54	25-130	
13C12-2,3,7,8-TCDF	10000	27.87	60	40-130	
13C12-1,2,3,7,8-PeCDF	10000	30.74	63	40-130	
13C12-1,2,3,6,7,8-HxCDF	10000	33.17	79	40-130	
13C12-1,2,3,4,6,7,8-HpCDF	10000	35.23	64	25-130	
Cleanup Standard	**pg**				
13C12-1,2,3,7,8,9-HxCDF	10000	34.28	89	40-130	

NS Indicates that this compound was not spiked.

1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	ORTECH
ALS Project ID:	ORT100	**Client Address:**	804 Southdown Road
ALS WO#:	L2754888		Mississauga, ON
Date of Report	2-Apr-24		L5J 2Y4
Date of Sample Receipt	8-Mar-24	**Client Contact:**	Chris Belore
		Client Project ID:	22326 Clean Harbors

COMMENTS: **PCB Congeners by EPA 1668C**

PCB Congener Group Totals and Total PCB are a sum of detected values, including EMPC values, consistent with USEPA CLP SOW CBC1.2

Certified by: ______________________

Ron McLeod, PhD
Director, Air Toxics & Special Chemistries, Life Sciences

Results in this certificate relate only to the samples as submitted to the laboratory.

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	24-22326-SVOC-(1 THRU 5) TEST#1	24-22326-SVOC-(6 THRU 10) TEST#2	24-22326-SVOC-(11 THRU 15) TEST#3	24-22326-SVOC-(16 THRU 20) BLANK
ALS Sample ID	L2754888-1	L2754888-2	L2754888-3	L2754888-4
Sample Size	1	1	1	1
Sample size units	Sample	Sample	Sample	Sample
Percent Moisture	n/a	n/a	n/a	n/a
Sample Matrix	Stack	Stack	Stack	Stack
Sampling Date	5-Mar-24	6-Mar-24	7-Mar-24	6-Mar-24
Extraction Date	19-Mar-24	19-Mar-24	19-Mar-24	19-Mar-24
Target Analytes	**pg**	**pg**	**pg**	**pg**
PCB-081	<29	<29	<30	<12
PCB-077	227	170	359	<13
PCB-123	<50	<47	<58	<18
PCB-118	3580	2920	4680	<17
PCB-114	<61	<73	172	<18
PCB-105	1120	979	1550	<16
PCB-126	<23	<31	<45	<17
PCB-167	<17	<42	72.1	<10
PCB-156/157	<96	115	168	<13
PCB-169	<18	<29	<31	<10
PCB-189	<18	<20	<18	<6.1
Extraction Standards	**% Rec**	**% Rec**	**% Rec**	**% Rec**
13C12-PCB-001	31	22	22	35
13C12-PCB-003	37	26	25	40
13C12-PCB-004	41	29	30	44
13C12-PCB-015	48	31	32	43
13C12-PCB-019	53	37	38	53
13C12-PCB-037	61	41	45	60
13C12-PCB-054	53	35	39	54
13C12-PCB-081	68	45	50	75
13C12-PCB-077	72	46	51	78
13C12-PCB-104	61	40	46	63
13C12-PCB-123	66	43	48	74
13C12-PCB-118	69	45	53	76
13C12-PCB-114	64	43	47	71
13C12-PCB-105	69	46	52	81
13C12-PCB-126	72	48	55	85
13C12-PCB-155	65	41	47	71
13C12-PCB-167	66	43	52	79
13C12-PCB-156/157	69	43	53	83
13C12-PCB-169	73	47	61	91
13C12-PCB-188	65	41	47	75
13C12-PCB-189	56	41	51	80
13C12-PCB-202	62	38	46	80
13C12-PCB-205	63	42	49	84
13C12-PCB-208	64	43	47	83
13C12-PCB-206	60	42	48	81
13C12-PCB-209	54	40	47	73
Field Spike Standards				
13C12-PCB-031	96	90	98	92
13C12-PCB-095	72	68	71	65
13C12-PCB-153	98	95	92	94
Cleanup Standards				
13C12-PCB-028	51	41	42	50
13C12-PCB-111	68	54	56	74
13C12-PCB-178	66	53	59	79

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	24-22326-SVOC-(1 THRU 5) TEST#1	24-22326-SVOC-(6 THRU 10) TEST#2	24-22326-SVOC-(11 THRU 15) TEST#3	24-22326-SVOC-(16 THRU 20) BLANK
ALS Sample ID	L2754888-1	L2754888-2	L2754888-3	L2754888-4
Sample Size	1	1	1	1
Sample size units	Sample	Sample	Sample	Sample
Percent Moisture	n/a	n/a	n/a	n/a
Sample Matrix	Stack	Stack	Stack	Stack
Sampling Date	5-Mar-24	6-Mar-24	7-Mar-24	6-Mar-24
Extraction Date	19-Mar-24	19-Mar-24	19-Mar-24	19-Mar-24
Target Analytes	pg	pg	pg	pg
Homologue Group Totals				
Total MonoCB	8190	15400	7820	<15
Total DiCB	5590	4300	6870	<43
Total TriCB	8700	3210	4570	<17
Total TetraCB	28700	13900	28900	70.9
Total PentaCB	38700	24900	47100	<16
Total HexaCB	8150	5820	10200	<5.8
Total HeptaCB	1300	617	799	<5.0
Total OctaCB	293	80.0	226	<4.2
Total NonaCB	<19	61.0	<30	<14
DecaCB	<13	<13	20.0	<6.6
Total PCB	99600	68300	106000	70.9
Toxic Equivalency - (WHO 2005)				
Lower Bound PCB TEQ	0.164	0.137	0.235	0.00
Mid Point PCB TEQ	1.60	2.13	2.96	1.00
Upper Bound PCB TEQ	3.02	4.12	5.68	2.01

ALS Life Sciences

Quality Control Summary Report

Sample Name	**Media Blank**
ALS Sample ID	WG3788706-1
Sample Size	1
Sample size units	Sample
Percent Moisture	n/a
Sample Matrix	QC
Sampling Date	n/a
Extraction Date	19-Mar-24

Target Analytes	**pg**
PCB-081	<19
PCB-077	<19
PCB-123	<35
PCB-118	<30
PCB-114	<35
PCB-105	<30
PCB-126	<33
PCB-167	<9.8
PCB-156/157	<14
PCB-169	<11
PCB-189	<12
Extraction Standards	**% Rec**
13C12-PCB-001	22
13C12-PCB-003	25
13C12-PCB-004	29
13C12-PCB-015	32
13C12-PCB-019	40
13C12-PCB-037	45
13C12-PCB-054	37
13C12-PCB-081	53
13C12-PCB-077	53
13C12-PCB-104	45
13C12-PCB-123	49
13C12-PCB-118	54
13C12-PCB-114	49
13C12-PCB-105	53
13C12-PCB-126	56
13C12-PCB-155	52
13C12-PCB-167	55
13C12-PCB-156/157	54
13C12-PCB-169	57
13C12-PCB-188	52
13C12-PCB-189	49
13C12-PCB-202	56
13C12-PCB-205	54
13C12-PCB-208	55
13C12-PCB-206	51
13C12-PCB-209	48
Cleanup Standards	
13C12-PCB-028	44
13C12-PCB-111	65
13C12-PCB-178	62

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Quality Control Summary Report

Sample Name	**Media Blank**
ALS Sample ID	WG3788706-1
Sample Size	1
Sample size units	Sample
Percent Moisture	n/a
Sample Matrix	QC
Sampling Date	n/a
Extraction Date	19-Mar-24

Target Analytes	**pg**
Homologue Group Totals	
Total MonoCB	<25
Total DiCB	<78
Total TriCB	59.0
Total TetraCB	157
Total PentaCB	<24
Total HexaCB	<5.4
Total HeptaCB	<7.8
Total OctaCB	<6.3
Total NonaCB	<28
DecaCB	<12
Total PCB	216
Toxic Equivalency - (WHO 2005)	
Lower Bound PCB TEQ	0.00
Mid Point PCB TEQ	1.82
Upper Bound PCB TEQ	3.64

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Sample Analysis Summary Report

Sample Name	Laboratory Control Sample
ALS Sample ID	WG3788706-2
Sample Size	1
Sample size units	n/a
Percent Moisture	n/a
Sample Matrix	QC
Sampling Date	n/a
Extraction Date	19-Mar-24

Target Analytes	% Rec
PCB-001	94
PCB-003	88
PCB-004	92
PCB-015	102
PCB-019	102
PCB-037	98
PCB-054	109
PCB-081	93
PCB-077	91
PCB-104	90
PCB-123	95
PCB-118	94
PCB-114	101
PCB-105	92
PCB-126	93
PCB-155	94
PCB-167	91
PCB-156/157	93
PCB-169	96
PCB-188	93
PCB-189	92
PCB-202	99
PCB-205	98
PCB-208	95
PCB-206	96
PCB-209	111
Extraction Standards	**% Rec**
13C12-PCB-001	20
13C12-PCB-003	22
13C12-PCB-004	25
13C12-PCB-015	23
13C12-PCB-019	30
13C12-PCB-037	30
13C12-PCB-054	28
13C12-PCB-081	35
13C12-PCB-077	35
13C12-PCB-104	33
13C12-PCB-123	35
13C12-PCB-118	36
13C12-PCB-114	34
13C12-PCB-105	38
13C12-PCB-126	40
13C12-PCB-155	33
13C12-PCB-167	38
13C12-PCB-156/157	38
13C12-PCB-169	42
13C12-PCB-188	34
13C12-PCB-189	36
13C12-PCB-202	34
13C12-PCB-205	38
13C12-PCB-208	39
13C12-PCB-206	37
13C12-PCB-209	36
Cleanup Standards	
13C12-PCB-028	33
13C12-PCB-111	43
13C12-PCB-178	42

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Sample Analysis Report

Sample Name	**24-22326-SVOC-(1 THRU 5) TEST#1**	Sampling Date	5-Mar-24	
ALS Sample ID	L2754888-1	Extraction Date	19-Mar-24	
Analysis Method	EPA 1668C	Sample Size	1	Sample
Analysis Type	Sample	Percent Moisture	n/a	
Sample Matrix	Stack	Split Ratio	10	

Approved:
E. Sabljic
--e-signature--
27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A21
Run Date	26-Mar-24 05:06
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-081	0.0003	22.44	<29	19	J,R	29	250
PCB-077	0.0001	22.74	227	20	J		250
PCB-123	0.00003	23.74	<50	25	M,J,R	50	250
PCB-118	0.00003	23.90	3580	21			250
PCB-114	0.00003	24.22	<61	24	J,R	61	250
PCB-105	0.00003	24.57	1120	22			250
PCB-126	0.1	NotFnd	<23	23	U		250
PCB-167	0.00003	NotFnd	<17	17	U		250
PCB-156/157	0.00003	27.70	<96	23	J,R	96	500
PCB-169	0.03	NotFnd	<18	18	U		250
PCB-189	0.00003	30.72	<18	18	M,U	13	250

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**
13C12-PCB-001	10000	9.33	31	5-145
13C12-PCB-003	10000	10.90	37	5-145
13C12-PCB-004	10000	11.09	41	5-145
13C12-PCB-015	10000	14.83	48	5-145
13C12-PCB-019	10000	13.15	53	5-145
13C12-PCB-037	10000	18.82	61	5-145
13C12-PCB-054	10000	15.04	53	5-145
13C12-PCB-081	10000	22.42	68	10-145
13C12-PCB-077	10000	22.72	72	10-145
13C12-PCB-104	10000	18.11	61	10-145
13C12-PCB-123	10000	23.72	66	10-145
13C12-PCB-118	10000	23.89	69	10-145
13C12-PCB-114	10000	24.19	64	10-145
13C12-PCB-105	10000	24.56	69	10-145
13C12-PCB-126	10000	26.15	72	10-145
13C12-PCB-155	10000	21.11	65	10-145
13C12-PCB-167	10000	27.05	66	10-145
13C12-PCB-156/157	20000	27.70	69	10-145
13C12-PCB-169	10000	29.38	73	10-145
13C12-PCB-188	10000	24.13	65	10-145
13C12-PCB-189	10000	30.69	56	10-145
13C12-PCB-202	10000	26.94	62	10-145
13C12-PCB-205	10000	32.21	63	10-145
13C12-PCB-208	10000	30.41	64	10-145
13C12-PCB-206	10000	33.40	60	10-145
13C12-PCB-209	10000	34.65	54	10-145
Field Spike Standards				
13C12-PCB-031	12000	16.38	96	70-130
13C12-PCB-095	12000	19.74	72	70-130
13C12-PCB-153	12000	24.82	98	70-130
Cleanup Standards				
13C12-PCB-028	10000	16.55	51	5-145
13C12-PCB-111	10000	22.64	68	10-145
13C12-PCB-178	10000	25.72	66	10-145

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(1 THRU 5) TEST#1**	Sampling Date	5-Mar-24	
ALS Sample ID	L2754888-1	Extraction Date	19-Mar-24	
Analysis Method	EPA 1668C	Sample Size	1 Sample	
Analysis Type	Sample	Percent Moisture	n/a	
Sample Matrix	Stack	Split Ratio	10	

Approved:
E. Sabljic
--e-signature--
27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A21
Run Date	26-Mar-24 05:06
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals							
Total MonoCB			8190	19	J		1000
Total DiCB			5590	45	J		2000
Total TriCB			8700	19	J		2000
Total TetraCB			28700	14	J		4000
Total PentaCB			38700	16	J		4000
Total HexaCB			8150	7.5	J		4000
Total HeptaCB			1300	13	J		2000
Total OctaCB			293	7.3	J		2000
Total NonaCB			<19	19	U		1000
DecaCB			<13	13	U		1000
Total PCB			99600		J		8000
Toxic Equivalency - (WHO 2005)							
Lower Bound PCB TEQ			0.164				
Mid Point PCB TEQ			1.60				
Upper Bound PCB TEQ			3.02				

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor
TEQ	Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(6 THRU 10) TEST#2**	Sampling Date	6-Mar-24
ALS Sample ID	L2754888-2	Extraction Date	19-Mar-24
Analysis Method	EPA 1668C	Sample Size	1 Sample
Analysis Type	Sample	Percent Moisture	n/a
Sample Matrix	Stack	Split Ratio	10

Approved:
E. Sabljic
--e-signature--
27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A22
Run Date	26-Mar-24 05:53
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-081	0.0003	22.45	<29	29	M,U	16	250
PCB-077	0.0001	22.72	170	29	J		250
PCB-123	0.00003	23.70	<47	33	M,J,R	47	250
PCB-118	0.00003	23.89	2920	29	M		250
PCB-114	0.00003	24.21	<73	32	J,R	73	250
PCB-105	0.00003	24.56	979	29			250
PCB-126	0.1	NotFnd	<31	31	U		250
PCB-167	0.00003	27.05	<42	27	J,R	42	250
PCB-156/157	0.00003	27.69	115	37	J		500
PCB-169	0.03	NotFnd	<29	29	U		250
PCB-189	0.00003	30.69	<20	20	M,U	13	250

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**
13C12-PCB-001	10000	9.33	22	5-145
13C12-PCB-003	10000	10.90	26	5-145
13C12-PCB-004	10000	11.09	29	5-145
13C12-PCB-015	10000	14.82	31	5-145
13C12-PCB-019	10000	13.13	37	5-145
13C12-PCB-037	10000	18.81	41	5-145
13C12-PCB-054	10000	15.03	35	5-145
13C12-PCB-081	10000	22.42	45	10-145
13C12-PCB-077	10000	22.72	46	10-145
13C12-PCB-104	10000	18.10	40	10-145
13C12-PCB-123	10000	23.71	43	10-145
13C12-PCB-118	10000	23.88	45	10-145
13C12-PCB-114	10000	24.19	43	10-145
13C12-PCB-105	10000	24.55	46	10-145
13C12-PCB-126	10000	26.14	48	10-145
13C12-PCB-155	10000	21.10	41	10-145
13C12-PCB-167	10000	27.05	43	10-145
13C12-PCB-156/157	20000	27.70	43	10-145
13C12-PCB-169	10000	29.37	47	10-145
13C12-PCB-188	10000	24.13	41	10-145
13C12-PCB-189	10000	30.69	41	10-145
13C12-PCB-202	10000	26.93	38	10-145
13C12-PCB-205	10000	32.21	42	10-145
13C12-PCB-208	10000	30.41	43	10-145
13C12-PCB-206	10000	33.40	42	10-145
13C12-PCB-209	10000	34.66	40	10-145
Field Spike Standards				
13C12-PCB-031	12000	16.38	90	70-130
13C12-PCB-095	12000	19.73	68	70-130
13C12-PCB-153	12000	24.81	95	70-130
Cleanup Standards				
13C12-PCB-028	10000	16.54	41	5-145
13C12-PCB-111	10000	22.63	54	10-145
13C12-PCB-178	10000	25.72	53	10-145

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(6 THRU 10) TEST#2**	Sampling Date	6-Mar-24		
ALS Sample ID	L2754888-2	Extraction Date	19-Mar-24		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*E. Sabljic*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	Stack	Split Ratio	10		27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A22
Run Date	26-Mar-24 05:53
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals							
Total MonoCB			15400	25	J		1000
Total DiCB			4300	55	J		2000
Total TriCB			3210	26	J		2000
Total TetraCB			13900	16	J		4000
Total PentaCB			24900	27	J		4000
Total HexaCB			5820	10	J		4000
Total HeptaCB			617	20	J		2000
Total OctaCB			80.0	13	J		2000
Total NonaCB			61.0	22	J		1000
DecaCB			<13	13	U		1000
Total PCB			68300		J		8000
Toxic Equivalency - (WHO 2005)							
Lower Bound PCB TEQ			0.137				
Mid Point PCB TEQ			2.13				
Upper Bound PCB TEQ			4.12				

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration - elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(11 THRU 15) TEST#3**	Sampling Date	7-Mar-24	
ALS Sample ID	L2754888-3	Extraction Date	19-Mar-24	
Analysis Method	EPA 1668C	Sample Size	1	Sample
Analysis Type	Sample	Percent Moisture	n/a	
Sample Matrix	Stack	Split Ratio	10	

Approved:
E. Sabljic
--e-signature--
27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A23
Run Date	26-Mar-24 06:39
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-081	0.0003	22.43	<30	30	M,U	27	250
PCB-077	0.0001	22.73	359	31			250
PCB-123	0.00003	23.70	<58	50	M,J,R	58	250
PCB-118	0.00003	23.89	4680	43			250
PCB-114	0.00003	24.21	172	48	M,J		250
PCB-105	0.00003	24.56	1550	42			250
PCB-126	0.1	NotFnd	<45	45	U		250
PCB-167	0.00003	27.06	72.1	32	J		250
PCB-156/157	0.00003	27.70	168	41	M,J		500
PCB-169	0.03	NotFnd	<31	31	U		250
PCB-189	0.00003	NotFnd	<18	18	U		250

Extraction Standards	pg	Time	% Rec	Limits	
13C12-PCB-001	10000	9.32	22	5-145	
13C12-PCB-003	10000	10.90	25	5-145	M
13C12-PCB-004	10000	11.09	30	5-145	
13C12-PCB-015	10000	14.82	32	5-145	
13C12-PCB-019	10000	13.13	38	5-145	
13C12-PCB-037	10000	18.81	45	5-145	
13C12-PCB-054	10000	15.03	39	5-145	
13C12-PCB-081	10000	22.41	50	10-145	
13C12-PCB-077	10000	22.72	51	10-145	
13C12-PCB-104	10000	18.10	46	10-145	
13C12-PCB-123	10000	23.71	48	10-145	
13C12-PCB-118	10000	23.88	53	10-145	
13C12-PCB-114	10000	24.19	47	10-145	
13C12-PCB-105	10000	24.55	52	10-145	
13C12-PCB-126	10000	26.14	55	10-145	
13C12-PCB-155	10000	21.10	47	10-145	
13C12-PCB-167	10000	27.05	52	10-145	
13C12-PCB-156/157	20000	27.69	53	10-145	
13C12-PCB-169	10000	29.37	61	10-145	
13C12-PCB-188	10000	24.12	47	10-145	
13C12-PCB-189	10000	30.69	51	10-145	
13C12-PCB-202	10000	26.93	46	10-145	
13C12-PCB-205	10000	32.21	49	10-145	
13C12-PCB-208	10000	30.41	47	10-145	
13C12-PCB-206	10000	33.40	48	10-145	
13C12-PCB-209	10000	34.66	47	10-145	
Field Spike Standards					
13C12-PCB-031	12000	16.37	98	70-130	
13C12-PCB-095	12000	19.73	71	70-130	
13C12-PCB-153	12000	24.81	92	70-130	
Cleanup Standards					
13C12-PCB-028	10000	16.54	42	5-145	
13C12-PCB-111	10000	22.63	56	10-145	
13C12-PCB-178	10000	25.71	59	10-145	

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Sample Analysis Report

Sample Name	**24-22326-SVOC-(11 THRU 15) TEST#3**	Sampling Date	7-Mar-24
ALS Sample ID	L2754888-3	Extraction Date	19-Mar-24
Analysis Method	EPA 1668C	Sample Size	1 Sample
Analysis Type	Sample	Percent Moisture	n/a
Sample Matrix	Stack	Split Ratio	10

Approved:
E. Sabljic
--e-signature--
27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A23
Run Date	26-Mar-24 06:39
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals							
Total MonoCB			7820	31	J		1000
Total DiCB			6870	70	J		2000
Total TriCB			4570	33	J		2000
Total TetraCB			28900	25	J		4000
Total PentaCB			47100	27	J		4000
Total HexaCB			10200	16	J		4000
Total HeptaCB			799	18	J		2000
Total OctaCB			226	23	J		2000
Total NonaCB			<30	30	U		1000
DecaCB			20.0	13	J		1000
Total PCB			106000		J		8000
Toxic Equivalency - (WHO 2005)							
Lower Bound PCB TEQ			0.235				
Mid Point PCB TEQ			2.96				
Upper Bound PCB TEQ			5.68				

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor — TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration - elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(16 THRU 20) BLANK**	Sampling Date	6-Mar-24	
ALS Sample ID	L2754888-4	Extraction Date	19-Mar-24	
Analysis Method	EPA 1668C	Sample Size	1	Sample
Analysis Type	Sample	Percent Moisture	n/a	
Sample Matrix	Stack	Split Ratio	10	

Approved:
E. Sabljic
--e-signature--
27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A20
Run Date	26-Mar-24 04:20
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-081	0.0003	NotFnd	<12	12	U		250
PCB-077	0.0001	NotFnd	<13	13	U		250
PCB-123	0.00003	NotFnd	<18	18	U		250
PCB-118	0.00003	NotFnd	<17	17	U		250
PCB-114	0.00003	NotFnd	<18	18	U		250
PCB-105	0.00003	NotFnd	<16	16	U		250
PCB-126	0.1	NotFnd	<17	17	U		250
PCB-167	0.00003	NotFnd	<10	10	U		250
PCB-156/157	0.00003	NotFnd	<13	13	U		500
PCB-169	0.03	NotFnd	<10	10	U		250
PCB-189	0.00003	NotFnd	<6.1	6.1	U		250

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**
13C12-PCB-001	10000	9.33	35	5-145
13C12-PCB-003	10000	10.90	40	5-145
13C12-PCB-004	10000	11.09	44	5-145
13C12-PCB-015	10000	14.83	43	5-145
13C12-PCB-019	10000	13.13	53	5-145
13C12-PCB-037	10000	18.82	60	5-145
13C12-PCB-054	10000	15.04	54	5-145
13C12-PCB-081	10000	22.42	75	10-145
13C12-PCB-077	10000	22.72	78	10-145
13C12-PCB-104	10000	18.10	63	10-145
13C12-PCB-123	10000	23.71	74	10-145
13C12-PCB-118	10000	23.89	76	10-145
13C12-PCB-114	10000	24.19	71	10-145
13C12-PCB-105	10000	24.56	81	10-145
13C12-PCB-126	10000	26.14	85	10-145
13C12-PCB-155	10000	21.10	71	10-145
13C12-PCB-167	10000	27.05	79	10-145
13C12-PCB-156/157	20000	27.69	83	10-145
13C12-PCB-169	10000	29.37	91	10-145
13C12-PCB-188	10000	24.13	75	10-145
13C12-PCB-189	10000	30.68	80	10-145
13C12-PCB-202	10000	26.94	80	10-145
13C12-PCB-205	10000	32.20	84	10-145
13C12-PCB-208	10000	30.41	83	10-145
13C12-PCB-206	10000	33.40	81	10-145
13C12-PCB-209	10000	34.65	73	10-145
Field Spike Standards				
13C12-PCB-031	12000	16.38	92	70-130
13C12-PCB-095	12000	19.73	65	70-130
13C12-PCB-153	12000	24.82	94	70-130
Cleanup Standards				
13C12-PCB-028	10000	16.54	50	5-145
13C12-PCB-111	10000	22.64	74	10-145
13C12-PCB-178	10000	25.72	79	10-145

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(16 THRU 20) BLANK**	Sampling Date	6-Mar-24	
ALS Sample ID	L2754888-4	Extraction Date	19-Mar-24	Approved:
Analysis Method	EPA 1668C	Sample Size	1 Sample	*E. Sabljic*
Analysis Type	Sample	Percent Moisture	n/a	--e-signature--
Sample Matrix	Stack	Split Ratio	10	27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A20
Run Date	26-Mar-24 04:20
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals							
Total MonoCB			<15	15	U		1000
Total DiCB			<43	43	U		2000
Total TriCB			<17	17	U		2000
Total TetraCB			70.9	9.6	J		4000
Total PentaCB			<16	16	U		4000
Total HexaCB			<5.8	5.8	U		4000
Total HeptaCB			<5.0	5.0	U		2000
Total OctaCB			<4.2	4.2	U		2000
Total NonaCB			<14	14	U		1000
DecaCB			<6.6	6.6	U		1000
Total PCB			70.9		J		8000
Toxic Equivalency - (WHO 2005)							
Lower Bound PCB TEQ			0.00				
Mid Point PCB TEQ			1.00				
Upper Bound PCB TEQ			2.01				

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration - elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Media Blank**	Sampling Date	n/a
ALS Sample ID	WG3788706-1	Extraction Date	19-Mar-24
Analysis Method	EPA 1668C	Sample Size	1 Sample
Analysis Type	Blank	Percent Moisture	n/a
Sample Matrix	QC	Split Ratio	10

Approved:
E. Sabljic
--e-signature--
27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A18
Run Date	26-Mar-24 02:47
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-081	0.0003	NotFnd	<19	19	U		250
PCB-077	0.0001	NotFnd	<19	19	U		250
PCB-123	0.00003	NotFnd	<35	35	U		250
PCB-118	0.00003	NotFnd	<30	30	U		250
PCB-114	0.00003	NotFnd	<35	35	U		250
PCB-105	0.00003	NotFnd	<30	30	U		250
PCB-126	0.1	NotFnd	<33	33	U		250
PCB-167	0.00003	NotFnd	<9.8	9.8	U		250
PCB-156/157	0.00003	NotFnd	<14	14	U		500
PCB-169	0.03	NotFnd	<11	11	U		250
PCB-189	0.00003	NotFnd	<12	12	U		250

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	
13C12-PCB-001	10000	9.32	22	5-145	
13C12-PCB-003	10000	10.90	25	5-145	
13C12-PCB-004	10000	11.09	29	5-145	
13C12-PCB-015	10000	14.82	32	5-145	
13C12-PCB-019	10000	13.13	40	5-145	M
13C12-PCB-037	10000	18.81	45	5-145	
13C12-PCB-054	10000	15.03	37	5-145	
13C12-PCB-081	10000	22.42	53	10-145	
13C12-PCB-077	10000	22.72	53	10-145	
13C12-PCB-104	10000	18.10	45	10-145	
13C12-PCB-123	10000	23.71	49	10-145	
13C12-PCB-118	10000	23.88	54	10-145	
13C12-PCB-114	10000	24.19	49	10-145	
13C12-PCB-105	10000	24.55	53	10-145	
13C12-PCB-126	10000	26.14	56	10-145	
13C12-PCB-155	10000	21.10	52	10-145	
13C12-PCB-167	10000	27.03	55	10-145	
13C12-PCB-156/157	20000	27.69	54	10-145	
13C12-PCB-169	10000	29.37	57	10-145	
13C12-PCB-188	10000	24.12	52	10-145	
13C12-PCB-189	10000	30.68	49	10-145	
13C12-PCB-202	10000	26.93	56	10-145	
13C12-PCB-205	10000	32.20	54	10-145	
13C12-PCB-208	10000	30.40	55	10-145	
13C12-PCB-206	10000	33.39	51	10-145	
13C12-PCB-209	10000	34.63	48	10-145	
Cleanup Standards					
13C12-PCB-028	10000	16.54	44	5-145	
13C12-PCB-111	10000	22.63	65	10-145	
13C12-PCB-178	10000	25.71	62	10-145	

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Media Blank**	Sampling Date	n/a
ALS Sample ID	WG3788706-1	Extraction Date	19-Mar-24
Analysis Method	EPA 1668C	Sample Size	1 Sample
Analysis Type	Blank	Percent Moisture	n/a
Sample Matrix	QC	Split Ratio	10

Approved:
E. Sabljic
--e-signature--
27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A18
Run Date	26-Mar-24 02:47
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals							
Total MonoCB			<25	25	U		1000
Total DiCB			<78	78	U		2000
Total TriCB			59.0	22	J		2000
Total TetraCB			157	16	J		4000
Total PentaCB			<24	24	U		4000
Total HexaCB			<5.4	5.4	U		4000
Total HeptaCB			<7.8	7.8	U		2000
Total OctaCB			<6.3	6.3	U		2000
Total NonaCB			<28	28	U		1000
DecaCB			<12	12	U		1000
Total PCB			216		J		8000
Toxic Equivalency - (WHO 2005)							
Lower Bound PCB TEQ			0.00				
Mid Point PCB TEQ			1.82				
Upper Bound PCB TEQ			3.64				

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
EMPC	Estimated Maximum Possible Concentration - elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3788706-2	Extraction Date	19-Mar-24
Analysis Method	EPA 1668C	Sample Size	1 n/a
Analysis Type	LCS	Percent Moisture	n/a
Sample Matrix	QC	Split Ratio	10

Approved:
E. Sabljic
--e-signature--
27-Mar-2024

Run Information	**Run 1**
Filename	6-240325A16
Run Date	26-Mar-24 01:14
Final Volume	25 ul
Dilution Factor	1
Analysis Units	% Rec
Instrument - Column	HRMS-6 SPBOCTYL-283389-06

Target Analytes	**pg**	**Ret. Time**	**% Rec**	**Limits**	**Flags**
PCB-001	5000	9.35	94	60-135	
PCB-003	5000	10.92	88	60-135	
PCB-004	5000	11.11	92	60-135	
PCB-015	5000	14.84	102	60-135	
PCB-019	5000	13.16	102	60-135	
PCB-037	5000	18.83	98	60-135	
PCB-054	5000	15.06	109	60-135	
PCB-081	5000	22.45	93	60-135	
PCB-077	5000	22.75	91	60-135	
PCB-104	5000	18.13	90	60-135	
PCB-123	5000	23.74	95	60-135	
PCB-118	5000	23.90	94	60-135	
PCB-114	5000	24.22	101	60-135	
PCB-105	5000	24.57	92	60-135	
PCB-126	5000	26.16	93	60-135	
PCB-155	5000	21.13	94	60-135	
PCB-167	5000	27.07	91	60-135	
PCB-156/157	10000	27.72	93	60-135	
PCB-169	5000	29.39	96	60-135	
PCB-188	5000	24.16	93	60-135	
PCB-189	5000	30.71	92	60-135	
PCB-202	5000	26.95	99	60-135	
PCB-205	5000	32.23	98	60-135	
PCB-208	5000	30.43	95	60-135	
PCB-206	5000	33.43	96	60-135	
PCB-209	5000	34.68	111	60-135	

Extraction Standards		**Time**	**% Rec**	**Limits**
13C12-PCB-001	10000	9.33	20	15-145
13C12-PCB-003	10000	10.92	22	15-145
13C12-PCB-004	10000	11.10	25	15-145
13C12-PCB-015	10000	14.83	23	15-145
13C12-PCB-019	10000	13.15	30	15-145
13C12-PCB-037	10000	18.83	30	15-145
13C12-PCB-054	10000	15.05	28	15-145
13C12-PCB-081	10000	22.43	35	40-145
13C12-PCB-077	10000	22.73	35	40-145
13C12-PCB-104	10000	18.12	33	40-145
13C12-PCB-123	10000	23.72	35	40-145
13C12-PCB-118	10000	23.89	36	40-145
13C12-PCB-114	10000	24.21	34	40-145
13C12-PCB-105	10000	24.56	38	40-145
13C12-PCB-126	10000	26.15	40	40-145
13C12-PCB-155	10000	21.11	33	40-145
13C12-PCB-167	10000	27.06	38	40-145
13C12-PCB-156/157	20000	27.70	38	40-145
13C12-PCB-169	10000	29.38	42	40-145
13C12-PCB-188	10000	24.15	34	40-145
13C12-PCB-189	10000	30.69	36	40-145
13C12-PCB-202	10000	26.94	34	40-145
13C12-PCB-205	10000	32.21	38	40-145
13C12-PCB-208	10000	30.41	39	40-145
13C12-PCB-206	10000	33.40	37	40-145
13C12-PCB-209	10000	34.66	36	40-145

Cleanup Standards				
13C12-PCB-028	10000	16.56	33	15-145
13C12-PCB-111	10000	22.65	43	40-145
13C12-PCB-178	10000	25.73	42	40-145

ALS Life Sciences
1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	ORTECH
ALS Project ID:	ORT100	**Client Address:**	804 Southdown Rd.
ALS WO#:	L2754888		Mississauga, ON L5J 2Y4
Date of Report	1-Apr-24		Canada
Date of Sample Receipt	8-Mar-24	**Client Contact:**	Chris Belore
		Client Project ID:	22326 Clean Harbors

COMMENTS: **CB by HRGC/SRM QQQ - Isotope dilution**

The absence of hexachlorobutadiene, hexachloroethane and octachlorostyrene was confirmed in a separate analytical run on the same extracts for these three targets.

Certified by:

Ron McLeod, Ph.D.
Technical Director

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Media Blank		24-22326-SVOC-(1 THRU 5) TEST#1		24-22326-SVOC-(6 THRU 10) TEST#2		24-22326-SVOC-(11 THRU 15) TEST#3		24-22326-SVOC-(16 THRU 20) BLANK	
ALS Sample ID	WG3788706-1		L2754888-1		L2754888-2		L2754888-3		L2754888-4	
Sample Size	1		1		1		1		1	
Sample units	sample		sample		sample		sample		sample	
Moisture Content	n/a		n/a		n/a		n/a		n/a	
Matrix	QC		Stack		Stack		Stack		Stack	
Sampling Date	n/a		5-Mar-24		6-Mar-24		7-Mar-24		6-Mar-24	
Extraction Date	19-Mar-24		19-Mar-24		19-Mar-24		19-Mar-24		19-Mar-24	
Target Analytes	**ng/sample**		**ng/sample**		**ng/sample**		**ng/sample**		**ng/sample**	
1,3-Dichlorobenzene	<10	U	4080		2610		2670		<10	U
1,4-Dichlorobenzene	10.3		801		581		572		17.4	B
1,2-Dichlorobenzene	<10	U	796		658		565		<10	U
1,3,5-Trichlorobenzene	<10	U	160		150		122		<10	U
1,2,4-Trichlorobenzene	<10	U	397		397		311		<10	U
1,2,3-Trichlorobenzene	<10	U	160		188		140		<10	U
1,2,3,5/1,2,4,5-Tetrachlorobenzene	<10	U	352		570		365		<10	U
1,2,3,4-Tetrachlorobenzene	<10	U	83		126		88.7		<10	U
Pentachlorobenzene	<10	U	109		155		106		<10	U
Hexachlorobenzene	<10	U	47.8		70.2		49		<10	U
Hexachlorobutadiene	<10	U	<10	U	<10	U	<10	U	<10	U
Hexachloroethane	<10	U	<10	U	<10	U	<10	U	<10	U
Octachlorostyrene	<10	U	<10	U	<10	U	<10	U	<10	U
Extraction Standards	**%Rec**		**%Rec**		**%Rec**		**%Rec**		**%Rec**	
13C6-1,4-Dichlorobenzene	77		52		68		73		77	
13C6-1,2,3-Trichlorobenzene	82		51		56		67		83	
13C6-1,2,3,4-Tetrachlorobenzene	82		64		70		66		83	
13C6-Pentachlorobenzene	85		61		67		66		86	
13C6-Hexachlorobenzene	88		64		68		65		88	

U Indicates that this compound was not detected above the LOD.

B Indicates that this compound was detected in the method blank at greater than 10% of the sample value.

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Laboratory Control Sample (50ng)	Laboratory Control Sample (12.5ng)
ALS Sample ID	WG3788706-2	WG3788706-5
Sample Size	1	1
Sample units	n/a	n/a
Moisture Content	n/a	n/a
Matrix	QC	QC
Sampling Date	n/a	n/a
Extraction Date	19-Mar-24	19-Mar-24
Target Analytes	**% Recovery**	**% Recovery**
1,3-Dichlorobenzene	89	136
1,4-Dichlorobenzene	103	132
1,2-Dichlorobenzene	84	122
1,3,5-Trichlorobenzene	90	111
1,2,4-Trichlorobenzene	91	113
1,2,3-Trichlorobenzene	98	126
1,2,3,5/1,2,4,5-Tetrachlorobenzene	93	115
1,2,3,4-Tetrachlorobenzene	96	114
Pentachlorobenzene	94	113
Hexachlorobenzene	96	110
Hexachlorobutadiene	NS	NS
Hexachloroethane	NS	NS
Octachlorostyrene	NS	NS
Extraction Standards	**%Rec**	**%Rec**
13C6-1,4-Dichlorobenzene	19	55
13C6-1,2,3-Trichlorobenzene	56	66
13C6-1,2,3,4-Tetrachlorobenzene	74	68
13C6-Pentachlorobenzene	81	69
13C6-Hexachlorobenzene	82	71

U Indicates that this compound was not detected above the LOD.

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Media Blank**	Sampling Date	n/a
ALS Sample ID	WG3788706-1	Extraction Date	19-Mar-24
Analysis Method	CB by 8270		
Analysis Type	Blank		
Sample Matrix	QC		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5		

Approved:
Andrew Reid
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	24032233.D
Run Date	3/23/2024 6:56 AM
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US0587231

Target Analytes		**Ret. Time**	**Concentration ng/sample**	**Flags**
1,3-Dichlorobenzene		6.28	<10	U
1,4-Dichlorobenzene		6.28	10.3	
1,2-Dichlorobenzene		6.28	<10	U
1,3,5-Trichlorobenzene		7.84	<10	U
1,2,4-Trichlorobenzene		7.84	<10	U
1,2,3-Trichlorobenzene		8.58	<10	U
1,2,3,5/1,2,4,5-Tetrachlorobenzen		9.81	<10	U
1,2,3,4-Tetrachlorobenzene		10.32	<10	U
Pentachlorobenzene		11.26	<10	U
Hexachlorobenzene		13.26	<10	U
Hexachlorobutadiene			<10	U
Hexachloroethane			<10	U
Octachlorostyrene			<10	U
Extraction Standards			**%Rec**	
13C6-1,4-Dichlorobenzene	250	6.28	77	
13C6-1,2,3-Trichlorobenzene	250	8.62	82	
13C6-1,2,3,4-Tetrachlorobenzene	250	10.31	82	
13C6-Pentachlorobenzene	250	11.64	85	
13C6-Hexachlorobenzene	250	13.26	88	

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(1 THRU 5) TEST#1**	Sampling Date	5-Mar-24
ALS Sample ID	L2754888-1	Extraction Date	19-Mar-24
Analysis Method	CB by 8270		
Analysis Type	sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5		

Approved:
Andrew Reid
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	24032236.D
Run Date	3/23/2024 7:58 AM
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US0587231

Target Analytes		**Ret. Time**	**Concentration ng/sample**	**Flags**
1,3-Dichlorobenzene		6.22	4080	
1,4-Dichlorobenzene		6.29	801	
1,2-Dichlorobenzene		6.57	796	
1,3,5-Trichlorobenzene		7.71	160	
1,2,4-Trichlorobenzene		8.22	397	
1,2,3-Trichlorobenzene		8.62	160	
1,2,3,5/1,2,4,5-Tetrachlorobenzen		9.83	352	
1,2,3,4-Tetrachlorobenzene		10.31	83	
Pentachlorobenzene		11.64	109	
Hexachlorobenzene		13.27	47.8	
Hexachlorobutadiene			<10	U
Hexachloroethane			<10	U
Octachlorostyrene			<10	U
Extraction Standards			**%Rec**	
13C6-1,4-Dichlorobenzene	250	6.29	52	
13C6-1,2,3-Trichlorobenzene	250	8.62	51	
13C6-1,2,3,4-Tetrachlorobenzene	250	10.31	64	
13C6-Pentachlorobenzene	250	11.64	61	
13C6-Hexachlorobenzene	250	13.27	64	

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(6 THRU 10) TEST#2**	Sampling Date	6-Mar-24
ALS Sample ID	L2754888-2	Extraction Date	19-Mar-24
Analysis Method	CB by 8270		
Analysis Type	sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5		

Approved:
Andrew Reid
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	24032237.D
Run Date	3/23/2024 8:18 AM
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US0587231

Target Analytes		**Ret. Time**	**Concentration ng/sample**	**Flags**
1,3-Dichlorobenzene		6.24	2610	
1,4-Dichlorobenzene		6.31	581	
1,2-Dichlorobenzene		6.58	658	
1,3,5-Trichlorobenzene		7.71	150	
1,2,4-Trichlorobenzene		8.23	397	
1,2,3-Trichlorobenzene		8.62	188	
1,2,3,5/1,2,4,5-Tetrachlorobenzen		9.83	570	
1,2,3,4-Tetrachlorobenzene		10.32	126	
Pentachlorobenzene		11.65	155	
Hexachlorobenzene		13.27	70.2	
Hexachlorobutadiene			<10	U
Hexachloroethane			<10	U
Octachlorostyrene			<10	U
Extraction Standards			**%Rec**	
Hexachlorobenzene	250	6.31	68	
13C6-Chlorobenzene	250	8.68	56	
13C6-1,4-Dichlorobenzene	250	10.31	70	
13C6-1,2,3-Trichlorobenzene	250	11.64	67	
13C6-1,2,3,4-Tetrachlorobenzene	250	13.27	68	

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(11 THRU 15) TEST#3**	Sampling Date	7-Mar-24
ALS Sample ID	L2754888-3	Extraction Date	19-Mar-24
Analysis Method	CB by 8270		
Analysis Type	Sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5		

Approved:
Andrew Reid
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	24032238.D
Run Date	3/23/2024 8:39 AM
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US0587231

Target Analytes		**Ret. Time**	**Concentration ng/sample**	**Flags**
1,3-Dichlorobenzene		6.21	2670	
1,4-Dichlorobenzene		6.29	572	
1,2-Dichlorobenzene		6.57	565	
1,3,5-Trichlorobenzene		7.71	122	
1,2,4-Trichlorobenzene		8.22	311	
1,2,3-Trichlorobenzene		8.62	140	
1,2,3,5/1,2,4,5-Tetrachlorobenzen		9.83	365	
1,2,3,4-Tetrachlorobenzene		10.32	88.7	
Pentachlorobenzene		11.65	106	
Hexachlorobenzene		13.27	49	
Hexachlorobutadiene			<10	U
Hexachloroethane			<10	U
Octachlorostyrene			<10	U
Extraction Standards			**%Rec**	
13C6-1,4-Dichlorobenzene	250	6.29	73	
13C6-1,2,3-Trichlorobenzene	250	8.62	67	
13C6-1,2,3,4-Tetrachlorobenzene	250	10.31	66	
13C6-Pentachlorobenzene	250	11.64	66	
13C6-Hexachlorobenzene	250	13.27	65	

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(16 THRU 20) BLANK**	Sampling Date	6-Mar-24
ALS Sample ID	L2754888-4	Extraction Date	19-Mar-24
Analysis Method	CB by 8270		
Analysis Type	Sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5		

Approved:
Andrew Reid
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	24032235.D
Run Date	3/23/2024 7:37 AM
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US0587231

Target Analytes		**Ret. Time**	**Concentration ng/sample**	**Flags**
1,3-Dichlorobenzene		6.24	<10	U
1,4-Dichlorobenzene		6.31	17.4	B
1,2-Dichlorobenzene		6.58	<10	U
1,3,5-Trichlorobenzene		8.06	<10	U
1,2,4-Trichlorobenzene		8.06	<10	U
1,2,3-Trichlorobenzene		8.49	<10	U
1,2,3,5/1,2,4,5-Tetrachlorobenzen		9.83	<10	U
1,2,3,4-Tetrachlorobenzene		10.30	<10	U
Pentachlorobenzene		11.64	<10	U
Hexachlorobenzene		13.27	<10	U
Hexachlorobutadiene			<10	U
Hexachloroethane			<10	U
Octachlorostyrene			<10	U
Extraction Standards			**%Rec**	
Hexachlorobenzene	250	6.31	77	
13C6-Chlorobenzene	250	8.62	83	
13C6-1,4-Dichlorobenzene	250	10.31	83	
13C6-1,2,3-Trichlorobenzene	250	11.64	86	
13C6-1,2,3,4-Tetrachlorobenzene	250	13.26	88	

U Indicates that this compound was not detected above the MDL.

B Indicates that this compound was detected in the method blank at greater than 10% of the sample value.

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3788706-2	Extraction Date	19-Mar-24
Analysis Method	SRM GC/QQQ		
Analysis Type	LCS		
Sample Matrix	QC		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	5		

Approved:
Andrew Reid
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	24032231.D
Run Date	3/23/2024 6:15 AM
Final Volume	1 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-5
Column	HP-5MS US0587231

Target Analytes	**ng spiked**	**Ret. Time**	**% Recovery**	**Flags**
1,3-Dichlorobenzene	50	6.26	89	
1,4-Dichlorobenzene	50	6.33	103	
1,2-Dichlorobenzene	50	6.60	84	
1,3,5-Trichlorobenzene	50	7.71	90	
1,2,4-Trichlorobenzene	50	8.22	91	
1,2,3-Trichlorobenzene	50	8.62	98	
1,2,3,5/1,2,4,5-Tetrachlorobenzen	100	9.83	93	
1,2,3,4-Tetrachlorobenzene	50	10.31	96	
Pentachlorobenzene	50	11.64	94	
Hexachlorobenzene	50	13.26	96	
Hexachlorobutadiene				
Hexachloroethane				
Octachlorostyrene				
Extraction Standards			**%Rec**	
13C6-1,4-Dichlorobenzene	250	13.26	19	
13C6-1,2,3-Trichlorobenzene	250	4.04	56	
13C6-1,2,3,4-Tetrachlorobenzene	250	6.33	74	
13C6-Pentachlorobenzene	250	8.62	81	
13C6-Hexachlorobenzene	250	10.31	82	

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3788706-5	Extraction Date	19-Mar-24
Analysis Method	SRM GC/QQQ		
Analysis Type	LCS		
Sample Matrix	QC		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	5		

Approved:
Andrew Reid
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	24032230.D
Run Date	3/23/2024 5:55 AM
Final Volume	1 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-5
Column	HP-5MS US0587231

Target Analytes	**ng spiked**	**Ret. Time**	**% Recovery**	**Flags**
1,3-Dichlorobenzene	12.5	6.19	136	
1,4-Dichlorobenzene	12.5	6.27	132	
1,2-Dichlorobenzene	12.5	6.55	122	
1,3,5-Trichlorobenzene	12.5	7.70	111	
1,2,4-Trichlorobenzene	12.5	8.21	113	
1,2,3-Trichlorobenzene	12.5	8.62	126	
1,2,3,5/1,2,4,5-Tetrachlorobenzen	25	9.82	115	
1,2,3,4-Tetrachlorobenzene	12.5	10.31	114	
Pentachlorobenzene	12.5	11.64	113	
Hexachlorobenzene	12.5	13.27	110	
Hexachlorobutadiene				
Hexachloroethane				
Octachlorostyrene				
Extraction Standards			**%Rec**	
13C6-1,4-Dichlorobenzene	250	6.26	55	
13C6-1,2,3-Trichlorobenzene	250	8.62	66	
13C6-1,2,3,4-Tetrachlorobenzene	250	10.31	68	
13C6-Pentachlorobenzene	250	11.64	69	
13C6-Hexachlorobenzene	250	13.26	71	

ALS Life Sciences

1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	ORTECH
ALS Project ID:	ORT100	**Client Address:**	804 Southdown Rd.
ALS WO#:	L2754888		Mississauga, ON L5J 2Y4
Date of Report	1-Apr-24		Canada
Date of Sample Receipt	8-Mar-24	**Client Contact:**	Chris Belore
		Client Project ID:	22326 Clean Harbors

COMMENTS: **Chlorophenols by EPA 8270E Selected ion monitoring - isotope dilution**

Certified by:

Ron McLeod, Ph.D.
Technical Director

Results in this certificate relate only to the samples as submitted to the laboratory.

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	**Media Blank**		**24-22326-SVOC-(1 THRU 5) TEST#1**		**24-22326-SVOC-(6 THRU 10) TEST#2**		**24-22326-SVOC-(11 THRU 15) TEST#3**		**24-22326-SVOC-(16 THRU 20) BLANK**	
ALS Sample ID	WG3788706-1		L2754888-1		L2754888-2		L2754888-3		L2754888-4	
Sample Size	1		1		1		1		1	
Sample units	sample		sample		sample		sample		sample	
Moisture Content	n/a		n/a		n/a		n/a		n/a	
Matrix	QC		Stack		Stack		Stack		Stack	
Sampling Date	n/a		5-Mar-24		6-Mar-24		7-Mar-24		6-Mar-24	
Extraction Date	19-Mar-24		19-Mar-24		19-Mar-24		19-Mar-24		19-Mar-24	
Target Analytes	**ng/sample**		**ng/sample**		**ng/sample**		**ng/sample**		**ng/sample**	
2,4/2,5-Dichlorophenol	<50	U	1100		2110		1210		<50	U
2,3-Dichlorophenol	<50	U	<50	U	<50	U	<50	U	<50	U
2,6-Dichlorophenol	<50	U	<50	U	<50	U	<50	U	<50	U
2,4,6-Trichlorophenol	<50	U	3420		4780		3150		<50	U
2,4,5-Trichlorophenol	<50	U	<50	U	<50	U	<50	U	<50	U
2,3,4-Trichlorophenol	<50	U	<50	U	<50	U	<50	U	<50	U
3,4,5-Trichlorophenol	<50	U	<50	U	<50	U	<50	U	<50	U
2,3,5,6-Tetrachlorophenol	<50	U	<50	U	<50	U	<50	U	<50	U
2,3,4,5/2,3,4,6-Tetrachlorophenol	<50	U	81.2	M	93.9		55.1	M	<50	U
Pentachlorophenol	<50	U	<50	U	<50	U	<50	U	<50	U
Extraction Standards	**% Rec**		**% Rec**		**% Rec**		**% Rec**		**% Rec**	
13C6-2,4-Dichlorophenol (ES)	95.2		81.1		81.6		89.1	M	75.5	
13C6-2,4,5-Trichlorophenol (ES)	88.1		94.6	M	25.5		102.5	M	102.1	
13C6-2,3,4,5-Tetrachlorophenol (ES)	110.9		148.5		144.3		145.3	M	131.3	M
13C6-Pentachlorophenol (ES)	97.1		138.1	M	132.3	M	137.5	M	145.6	M

U Indicates that this compound was not detected above the LOD.
M Indicates that a peak has been manually integrated.

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Laboratory Control Sample (1000ng)		Laboratory Control Sample (100ng)	
ALS Sample ID	WG3788706-2		WG3788706-5	
Sample Size	1		1	
Sample units	n/a		n/a	
Moisture Content	n/a		n/a	
Matrix	QC		QC	
Sampling Date	n/a		n/a	
Extraction Date	19-Mar-24		19-Mar-24	
Target Analytes	**% Recovery**		**% Recovery**	
2,4/2,5-Dichlorophenol	69		131	
2,3-Dichlorophenol				
2,6-Dichlorophenol	93		91	
2,4,6-Trichlorophenol	73		92	
2,4,5-Trichlorophenol	140		123	M
2,3,4-Trichlorophenol				
3,4,5-Trichlorophenol				
2,3,5,6-Tetrachlorophenol	96		125	
2,3,4,5/2,3,4,6-Tetrachlorophenol	73		131	
Pentachlorophenol	119	M	143	M
Extraction Standards	**% Rec**		**% Rec**	
13C6-2,4-Dichlorophenol (ES)	64.1		53.7	
13C6-2,4,5-Trichlorophenol (ES)	90.9		70.9	
13C6-2,3,4,5-Tetrachlorophenol (ES)	88.8	M	104.9	
13C6-Pentachlorophenol (ES)	97.6		72.4	

M Indicates that a peak has been manually integrated.

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Media Blank**	Sampling Date	n/a
ALS Sample ID	WG3788706-1	Extraction Date	19-Mar-24
Analysis Method	Chlorophenols by 8270E		
Analysis Type	Blank		
Sample Matrix	QC		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	45378
Run Date	24032629.D
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US0587231H

Target Analytes		**Ret. Time**	**Concentration ng/sample**	**Flags**	
2,4/2,5-Dichlorophenol		8.02	<50	U	
2,3-Dichlorophenol		8.02	<50	U	
2,6-Dichlorophenol		8.38	<50	U	
2,4,6-Trichlorophenol		9.93	<50	U	
2,4,5-Trichlorophenol		10.01	<50	U	
2,3,4-Trichlorophenol		10.10	<50	U	
3,4,5-Trichlorophenol		12.42	<50	U	
2,3,5,6-Tetrachlorophenol		11.74	<50	U	
2,3,4,5/2,3,4,6-Tetrachlorophenol		11.81	<50	U	
Pentachlorophenol		13.49	<50	U	
Extraction Standards			**% Rec**		**Limits**
13C6-2,4-Dichlorophenol (ES)	1000	8.00	95.2		20-150
13C6-2,4,5-Trichlorophenol (ES)	1000	10.00	88.1		20-150
13C6-2,3,4,5-Tetrachlorophenol (ES)	1000	11.78	110.9		20-150
13C6-Pentachlorophenol (ES)	1000	13.49	97.1		20-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(1 THRU 5) TEST#1**	Sampling Date	5-Mar-24
ALS Sample ID	L2754888-1	Extraction Date	19-Mar-24
Analysis Method	Chlorophenols by 8270E		
Analysis Type	sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	45378
Run Date	24032632.D
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS U50587231H

Target Analytes		**Ret. Time**	**Concentration ng/sample**	**Flags**	
2,4/2,5-Dichlorophenol		8.02	1100		
2,3-Dichlorophenol		8.02	<50	U	
2,6-Dichlorophenol		8.40	<50	U	
2,4,6-Trichlorophenol		9.96	3420		
2,4,5-Trichlorophenol		9.96	<50	U	
2,3,4-Trichlorophenol		9.96	<50	U	
2,3,5,6-Tetrachlorophenol		11.74	<50	U	
2,3,4,5/2,3,4,6-Tetrachlorophenol		11.81	<50	U	
2,3,4,5/2,3,4,6-Tetrachlorophenol		11.89	81.2	M	
Pentachlorophenol		13.58	<50	U	
Extraction Standards			**% Rec**		**Limits**
13C6-2,4-Dichlorophenol (ES)	1000	8.02	81.1		20-150
13C6-2,4,5-Trichlorophenol (ES)	1000	10.05	94.6	M	20-150
13C6-2,3,4,5-Tetrachlorophenol (ES)	1000	11.88	148.5		20-150
13C6-Pentachlorophenol (ES)	1000	13.53	138.1	M	20-150

M Indicates that a peak has been manually integrated.
U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(6 THRU 10) TEST#2**	Sampling Date	6-Mar-24
ALS Sample ID	L2754888-2	Extraction Date	19-Mar-24
Analysis Method	Chlorophenols by 8270E		
Analysis Type	sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	45378
Run Date	24032633.D
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US0587231H

Target Analytes		**Ret. Time**	**Concentration ng/sample**	**Flags**	
2,4/2,5-Dichlorophenol		8.02	2110		
2,3-Dichlorophenol		8.02	<50	U	
2,6-Dichlorophenol		8.31	<50	U	
2,4,6-Trichlorophenol		9.96	4780		
2,4,5-Trichlorophenol		9.96	<50	U	
2,3,4-Trichlorophenol		9.96	<50	U	
3,4,5-Trichlorophenol		11.66	<50	U	
2,3,5,6-Tetrachlorophenol		11.74	<50	U	
2,3,4,5/2,3,4,6-Tetrachlorophenol		11.89	93.9		
Pentachlorophenol		13.53	<50	U	
Extraction Standards			**% Rec**		**Limits**
13C6-2,4-Dichlorophenol (ES)	1000	8.02	81.6		20-150
13C6-2,4,5-Trichlorophenol (ES)	1000	9.96	25.5		20-150
13C6-2,3,4,5-Tetrachlorophenol (ES)	1000	11.90	144.3		20-150
13C6-Pentachlorophenol (ES)	1000	13.54	132.3 M		20-150

M Indicates that a peak has been manually integrated.
U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(11 THRU 15) TEST#3**	Sampling Date	7-Mar-24
ALS Sample ID	L2754888-3	Extraction Date	19-Mar-24
Analysis Method	Chlorophenols by 8270E		
Analysis Type	sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	45378
Run Date	24032634.D
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US0587231H

Target Analytes		**Ret. Time**	**Concentration ng/sample**	**Flags**	
2,4/2,5-Dichlorophenol		8.03	1210		
2,3-Dichlorophenol		8.03	<50	U	
2,6-Dichlorophenol		8.41	<50	U	
2,4,6-Trichlorophenol		9.97	3150		
2,4,5-Trichlorophenol		9.97	<50	U	
2,3,4-Trichlorophenol		9.97	<50	U	
2,3,5,6-Tetrachlorophenol		11.68	<50	U	
2,3,4,5/2,3,4,6-Tetrachlorophenol		11.76	<50	U	
2,3,4,5/2,3,4,6-Tetrachlorophenol		11.90	55.1 M		
Pentachlorophenol		13.58	<50	U	
Extraction Standards			**% Rec**		**Limits**
13C6-2,4-Dichlorophenol (ES)	1000	8.03	89.1 M		20-150
13C6-2,4,5-Trichlorophenol (ES)	1000	10.04	102.5 M		20-150
13C6-2,3,4,5-Tetrachlorophenol (ES)	1000	11.94	145.3 M		20-150
13C6-Pentachlorophenol (ES)	1000	13.55	137.5 M		20-150

M Indicates that a peak has been manually integrated.
U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(16 THRU 20) BLANK**	Sampling Date	6-Mar-24
ALS Sample ID	L2754888-4	Extraction Date	19-Mar-24
Analysis Method	Chlorophenols by 8270E		
Analysis Type	sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	45378
Run Date	24032631.D
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US0587231H

Target Analytes		**Ret. Time**	**Concentration ng/sample**	**Flags**	
2,4/2,5-Dichlorophenol		8.02	<50	U	
2,3-Dichlorophenol		8.10	<50	U	
2,6-Dichlorophenol		8.38	<50	U	
2,4,6-Trichlorophenol		9.93	<50	U	
2,4,5-Trichlorophenol		10.00	<50	U	
2,3,4-Trichlorophenol		10.10	<50	U	
3,4,5-Trichlorophenol		12.37	<50	U	
2,3,5,6-Tetrachlorophenol		11.74	<50	U	
2,3,4,5/2,3,4,6-Tetrachlorophenol		11.82	<50	U	
Pentachlorophenol		13.49	<50	U	
Extraction Standards			**% Rec**		**Limits**
13C6-2,4-Dichlorophenol (ES)	1000	8.00	75.5		20-150
13C6-2,4,5-Trichlorophenol (ES)	1000	9.99	102.1		20-150
13C6-2,3,4,5-Tetrachlorophenol (ES)	1000	11.79	131.3 M		20-150
13C6-Pentachlorophenol (ES)	1000	13.49	145.6 M		20-150

M Indicates that a peak has been manually integrated.
U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3788706-2	Extraction Date	19-Mar-24
Analysis Method	Chlorophenols by 8270E		
Analysis Type	LCS		
Sample Matrix	QC		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	45378
Run Date	24032627.D
Final Volume	1 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-5
Column	HP-5MS USR123112H

Target Analytes	**ng spiked**	**Ret. Time**	**% Recovery**	**Flags**	**Limits**
2,4/2,5-Dichlorophenol	2000	8.02	69		50-150
2,3-Dichlorophenol	0				
2,6-Dichlorophenol	1000	8.38	93		50-150
2,4,6-Trichlorophenol	1000	9.93	73		50-150
2,4,5-Trichlorophenol	1000	10.00	140		50-150
2,3,4-Trichlorophenol	0				
3,4,5-Trichlorophenol	0				
2,3,5,6-Tetrachlorophenol	1000	11.73	96		50-150
2,3,4,5/2,3,4,6-Tetrachlorophenol	2000	11.81	73		50-150
Pentachlorophenol	1000	13.48	119 M		50-150
Extraction Standards			**% Rec**		**Limits**
13C6-2,4-Dichlorophenol (ES)	1000	8.02	64.1		20-150
13C6-2,4,5-Trichlorophenol (ES)	1000	10.00	90.9		20-150
13C6-2,3,4,5-Tetrachlorophenol (ES)	1000	11.78	88.8 M		20-150
13C6-Pentachlorophenol (ES)	1000	13.48	97.6		20-150

M Indicates that a peak has been manually integrated.

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3788706-5	Extraction Date	19-Mar-24
Analysis Method	Chlorophenols by 8270E		
Analysis Type	LCS		
Sample Matrix	QC		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	45378
Run Date	24032626.D
Final Volume	1 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-5
Column	HP-5MS USR123112H

Target Analytes	**ng spiked**	**Ret. Time**	**% Recovery**	**Flags**	**Limits**
2,4/2,5-Dichlorophenol	200	8.01	131		50-150
2,3-Dichlorophenol	0				
2,6-Dichlorophenol	100	8.37	91		50-150
2,4,6-Trichlorophenol	100	9.93	92		50-150
2,4,5-Trichlorophenol	100	10.01	123	M	50-150
2,3,4-Trichlorophenol	0				
3,4,5-Trichlorophenol	0				
2,3,5,6-Tetrachlorophenol	100	11.74	125		50-150
2,3,4,5/2,3,4,6-Tetrachlorophenol	200	11.82	131		50-150
Pentachlorophenol	100	13.55	143	M	50-150

Extraction Standards			**% Rec**	**Limits**
13C6-2,4-Dichlorophenol (ES)	1000	7.99	53.7	20-150
13C6-2,4,5-Trichlorophenol (ES)	1000	10.00	70.9	20-150
13C6-2,3,4,5-Tetrachlorophenol (ES)	1000	11.80	104.9	20-150
13C6-Pentachlorophenol (ES)	1000	13.49	72.4	20-150

M Indicates that a peak has been manually integrated.

ALS Life Sciences
1435 Norjohn Court, Unit 1, Burlington ON, L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Lynne Wrona	**Client Name:**	ORTECH
ALS Project ID:	ORT100	**Client Address:**	804 Southdown Rd.
ALS WO#:	L2754888		Mississauga, ON L5J 2Y4
Date of Report	1-Apr-24		Canada
Date of Sample Receipt	8-Mar-24	**Client Contact:**	Chris Belore
		Client Project ID:	22326 Clean Harbors

COMMENTS: **PAH by CARB method 429 (LR option)- Isotope dilution**

Certified by:

Ron McLeod, Ph.D.
Technical Director

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Media Blank		24-22326-SVOC-(1 THRU 5) TEST#1		24-22326-SVOC-(6 THRU 10) TEST#2		24-22326-SVOC-(11 THRU 15) TEST#3		24-22326-SVOC-(16 THRU 20) BLANK	
ALS Sample ID	WG3788706-1		L2754888-1		L2754888-2		L2754888-3		L2754888-4	
Sample Size	1		1		1		1		1	
Sample units	sample		sample		sample		sample		sample	
Moisture Content	n/a		n/a		n/a		n/a		n/a	
Matrix	QC		Stack		Stack		Stack		Stack	
Sampling Date	n/a		5-Mar-24		6-Mar-24		7-Mar-24		6-Mar-24	
Extraction Date	19-Mar-24		19-Mar-24		19-Mar-24		19-Mar-24		19-Mar-24	
Target Analytes	**ng/sample**		**ng/sample**		**ng/sample**		**ng/sample**		**ng/sample**	
Naphthalene	34.2		16100		30300		16500		63.0	B
2-Methylnaphthalene	<10	U	1050		1630		929		<10	U
1-Methylnaphthalene	<10	U	1060		1870		1000		<10	U
Acenaphthylene	<10	U	152		329		195		<10	U
Acenaphthene	<10	U	12.8		11.7		11.7		<10	U
Fluorene	<10	U	41.2		29.7		59.8		<10	U
Phenanthrene	<10	U	248		264		654		<10	U
Anthracene	<10	U	15.9		23.8		30.3		<10	U
Fluoranthene	<10	U	43.5		67.9		115		<10	U
Pyrene	<10	U	49.0		91.5		100		<10	U
Benzo(a)Anthracene	<10	U	<10	U	<10	U	<10	U	<10	U
Chrysene	<10	U	11.3		<10	U	13.9		<10	U
Benzo(b)Fluoranthene	<10	U	<10	U	<10	U	<10	U	<10	U
Benzo(k)Fluoranthene	<10	U	<10	U	<10	U	<10	U	<10	U
Benzo(e)Pyrene	<10	U	22.1		44.9		26.4		<10	U
Benzo(a)Pyrene	<10	U	<10	U	<10	U	<10	U	<10	U
Perylene	<10	U	<10	U	<10	U	<10	U	<10	U
Indeno(1,2,3-cd)Pyrene	<10	U	11.3	M	26.6		14.4		<10	U
Dibenzo(a,h)Anthracene	<10	U	<10	U	14.4	M	<10	U	<10	U
Benzo(g,h,i)Perylene	<10	U	59.6		117		66.2		<10	U
Additional Analytes										
Tetralin	10.7	R	242		200		153		27.0	B
Quinoline	<10	U	<10	U	<10	U	<10	U	<10	U
2-Chloronaphthalene	<10	U	56.1		138		77.3		<10	U
Biphenyl	<10	U	1190		2900		1200		<10	U
o-Terphenyl	<10	U	<10	U	<10	U	<10	U	<10	U
1-Methylphenanthrene	<10	U	<10	U	<10	U	<10	U	<10	U
9-Methylphenanthrene	<10	U	22.4		16.1		24.8		<10	U
2-methylanthracene	<10	U	<10	U	<10	U	<10	U	<10	U
9,10-dimethylanthracene	<10	U	<10	U	<10	U	42.7	R	<10	U
m-terphenyl	<10	U	<10	U	<10	U	<10	U	<10	U
p-terphenyl	<10	U	<10	U	<10	U	<10	U	<10	U
Benzo(a)fluorene	<10	U	<10	U	<10	U	<10	U	<10	U
Benzo(b)fluorene	<10	U	<10	U	<10	U	<10	U	<10	U
Benzo(j)fluoranthene	<10	U	<10	U	<10	U	<10	U	<10	U
7,12-Dimethylbenzo(a)anthracene	<10	U	<10	U	<10	U	<10	U	<10	U
3-Methylcholanthrene	<50	U	<50	U	<50	U	<50	U	<50	U
Picene	<50	U	<50	U	<50	U	<50	U	<50	U
Dibenzo(a,e)pyrene	<50	U	<50	U	<50	U	<50	U	<50	U
Coronene	<50	U	<50	U	65.8	M	61.8		<50	U
Field Sampling Standards	**% Rec**		**% Rec**		**% Rec**		**% Rec**		**% Rec**	
1-Methylnaphthalene-D10	NS		99.6		96.8		102.4		96.7	
Fluorene D10	NS		101.3		100.2		98.5		98.4	
Terphenyl D14(Surr.)	NS		104.3		105.2		101.8		109.3	
Extraction Standards	**% Rec**		**% Rec**		**% Rec**		**% Rec**		**% Rec**	
Naphthalene D8	15.5		73.2		66.1		56.1		89.3	
2-Methylnaphthalene-D10	26.4		81.6		76.7		62.2		87.4	
Acenaphthylene D8	34.5		84.3		80.5		56.5		66.0	
Phenanthrene D10	75.7		87.3		80.6		67.2		99.0	
Anthracene-D10	65.4		83.5		78.1		55.7		79.3	
Fluoranthene D10	88.3		94.2		83.9		71.7		89.8	
Benz(a)Anthracene-D12	62.5		80.1		63.5		60.0		51.7	
Chrysene D12	77.8		77.5		66.4		59.2		73.0	
Benzo(b)Fluoranthene-D12	82.2		84.5		70.0		64.0		73.1	
Benzo(k)Fluoranthene-D12	72.0		73.3		59.9		48.9		66.3	
Benzo(a)Pyrene D12	71.5		88.6		77.2		56.4		67.5	
Perylene D12	66.5		82.3		67.6		61.7		57.2	
Indeno(1,2,3,cd)Pyrene-D12	63.0		63.8		53.0		53.9		54.5	
Dibenz(a,h)Anthracene-D14	57.6		57.3		48.0		45.5		51.7	
Benzo(g,h,i)Perylene D12	66.2		61.7		51.3		46.0		60.6	

U Indicates that this compound was not detected above the LOD.
M Indicates that a peak has been manually integrated.
B Indicates that this compound was detected in the method blank at greater than 10% of the sample value.
NS Indicates that this compound was not spiked in.

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Laboratory Control Sample	
ALS Sample ID	WG3788706-2	
Sample Size	1	
Sample units	n/a	
Moisture Content	n/a	
Matrix	QC	
Sampling Date	n/a	
Extraction Date	19-Mar-24	
Target Analytes	**%**	
Naphthalene	85.4	
2-Methylnaphthalene	87.6	
1-Methylnaphthalene	91.4	
Acenaphthylene	88.9	
Acenaphthene	99.7	
Fluorene	90.6	
Phenanthrene	96.2	
Anthracene	90.1	
Fluoranthene	96.4	
Pyrene	99.3	
Benzo(a)Anthracene	114.3	
Chrysene	90.3	
Benzo(b)Fluoranthene	85.5	
Benzo(k)Fluoranthene	100.8	
Benzo(e)Pyrene	110.8	
Benzo(a)Pyrene	92	M
Perylene	98.3	
Indeno(1,2,3-cd)Pyrene	86.5	
Dibenzo(a,h)Anthracene	93.1	
Benzo(g,h,i)Perylene	89	
Additional Analytes		
Tetralin		
Quinoline		
2-Chloronaphthalene		
Biphenyl		
o-Terphenyl		
1-Methylphenanthrene		
9-Methylphenanthrene		
2-methylanthracene		
9,10-dimethylanthracene		
m-terphenyl		
p-terphenyl		
Benzo(a)fluorene		
Benzo(b)fluorene		
Benzo(j)fluoranthene		
7,12-Dimethylbenzo(a)anthracene		
3-Methylcholanthrene		
Picene		
Dibenzo(a,e)pyrene		
Coronene		
Field Sampling Standards	**% Rec**	
1-Methylnaphthalene-D10	NS	
Fluorene D10	NS	
Terphenyl D14(Surr.)	NS	
Extraction Standards	**% Rec**	
Naphthalene D8	84.6	
2-Methylnaphthalene-D10	83.3	
Acenaphthylene D8	79.5	
Phenanthrene D10	93.2	
Anthracene-D10	80.1	
Fluoranthene D10	85.9	
Benz(a)Anthracene-D12	53.1	
Chrysene D12	79.7	
Benzo(b)Fluoranthene-D12	70.9	
Benzo(k)Fluoranthene-D12	70.5	
Benzo(a)Pyrene D12	70.1	
Perylene D12	61	
Indeno(1,2,3,cd)Pyrene-D12	52.1	
Dibenz(a,h)Anthracene-D14	54.4	
Benzo(g,h,i)Perylene D12	61.2	

M Indicates that a peak has been manually integrated.

NS Indicates that this compound was not spiked in.

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Media Blank**		Sampling Date	n/a
ALS Sample ID	WG3788706-1		Extraction Date	19-Mar-24
Analysis Method	PAH by CARB 429			
Analysis Type	Blank			
Sample Matrix	QC			
Sample Size	1	sample		
Percent Moisture	n/a			
Split Ratio	5		Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**	
Filename	24032218.D	
Run Date	3/22/2024 23:15	
Final Volume	1	mL
Dilution Factor	1	
Analysis Units	ng/sample	
Instrument	MSD-5	
Column	HP-5MS US3388814H	

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**
Naphthalene	2.87	34.2	
2-Methylnaphthalene	3.41	<10	U
1-Methylnaphthalene	3.52	<10	U
Acenaphthylene	4.47	<10	U
Acenaphthene	4.75	<10	U
Fluorene	5.61	<10	U
Phenanthrene	7.72	<10	U
Anthracene	7.82	<10	U
Fluoranthene	11.03	<10	U
Pyrene	11.66	<10	U
Benzo(a)Anthracene	15.54	<10	U
Chrysene	15.66	<10	U
Benzo(b)Fluoranthene	18.87	<10	U
Benzo(k)Fluoranthene	18.94	<10	U
Benzo(e)Pyrene	19.61	<10	U
Benzo(a)Pyrene	19.73	<10	U
Perylene	19.97	<10	U
Indeno(1,2,3-cd)Pyrene	23.08	<10	U
Dibenzo(a,h)Anthracene	23.29	<10	U
Benzo(g,h,i)Perylene	23.91	<10	U
Additional Analytes			
Tetralin	2.75	10.7	
Quinoline	NotFnd	<10	U
2-Chloronaphthalene	3.88	<10	U
Biphenyl	3.91	<10	U
o-Terphenyl	8.65	<10	U
1-Methylphenanthrene	9.24	<10	U
9-Methylphenanthrene	9.34	<10	U
2-methylanthracene	9.41	<10	U
9,10-dimethylanthracene	NotFnd	<10	U
m-terphenyl	12.08	<10	U
p-terphenyl	12.55	<10	U
Benzo(a)fluorene	12.85	<10	U
Benzo(b)fluorene	13.02	<10	U
Benzo(j)fluoranthene	18.88	<10	U
7,12-Dimethylbenzo(a)anthracene	NotFnd	<10	U
3-Methylcholanthrene	20.92	<50	U
Picene	23.58	<50	U
Dibenzo(a,e)pyrene	27.99	<50	U
Coronene	28.79	<50	U

Field Sampling Standards	**ng spiked**		**% Rec**		**Limits**
1-Methylnaphthalene-D10			NS		
Fluorene D10			NS		
Terphenyl D14(Surr.)			NS		
Extraction Standards			**% Rec**		**Limits**
Naphthalene D8	500	2.86	15.5		15-150
2-Methylnaphthalene-D10	500	3.38	26.4		20-150
Acenaphthylene D8	500	4.45	34.5		30-150
Phenanthrene D10	500	7.67	75.7		40-150
Anthracene-D10	500	7.79	65.4		40-150
Fluoranthene D10	500	10.99	88.3		40-150
Benz(a)Anthracene-D12	500	15.48	62.5		40-150
Chrysene D12	500	15.60	77.8		40-150
Benzo(b)Fluoranthene-D12	500	18.81	82.2		40-150
Benzo(k)Fluoranthene-D12	500	18.90	72.0		40-150
Benzo(a)Pyrene D12	500	19.69	71.5		40-150
Perylene D12	500	19.93	66.5		40-150
Indeno(1,2,3,cd)Pyrene-D12	500	23.03	63.0		40-150
Dibenz(a,h)Anthracene-D14	500	23.21	57.6		40-150
Benzo(g,h,i)Perylene D12	500	23.88	66.2		40-150

U Indicates that this compound was not detected above the MDL.

NS Indicates that this compound was not spiked in.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(1 THRU 5) TEST#1**	Sampling Date	5-Mar-24
ALS Sample ID	L2754888-1	Extraction Date	19-Mar-24
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	S	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**	**Run 2**
Filename	24032221.D	24032604.D
Run Date	3/23/2024 1:07	3/26/2024 9:26
Final Volume	1 mL	1 mL
Dilution Factor	1	10
Analysis Units	ng/sample	ng/sample
Instrument	MSD-5	MSD-5
Column	HP-5MS US3388814H	HP-5MS US3388814H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**	**Ret. Time.**	**Concentration ng/sample**	**Flags**
Naphthalene				2.87	16100	
2-Methylnaphthalene	3.41	1050				
1-Methylnaphthalene	3.51	1060				
Acenaphthylene	4.47	152				
Acenaphthene	4.75	12.8				
Fluorene	5.61	41.2				
Phenanthrene	7.72	248				
Anthracene	7.82	15.9				
Fluoranthene	11.03	43.5				
Pyrene	11.66	49.0				
Benzo(a)Anthracene	15.55	<10	U			
Chrysene	15.66	11.3				
Benzo(b)Fluoranthene	18.87	<10	U			
Benzo(k)Fluoranthene	18.95	<10	U			
Benzo(e)Pyrene	19.61	22.1				
Benzo(a)Pyrene	19.75	<10	U			
Perylene	20.08	<10	U			
Indeno(1,2,3-cd)Pyrene	23.09	11.3	M			
Dibenzo(a,h)Anthracene	23.27	<10	U			
Benzo(g,h,i)Perylene	23.97	59.6				
Additional Analytes						
Tetralin	2.75	242				
Quinoline	NotFnd	<10	U			
2-Chloronaphthalene	3.92	56.1				
Biphenyl	3.91	1190				
o-Terphenyl	8.98	<10	U			
1-Methylphenanthrene	9.22	<10	U			
9-Methylphenanthrene	9.34	22.4				
2-methylanthracene	9.41	<10	U			
9,10-dimethylanthracene	11.90	<10	U			
m-terphenyl	12.09	<10	U			
p-terphenyl	12.56	<10	U			
Benzo(a)fluorene	12.79	<10	U			
Benzo(b)fluorene	13.11	<10	U			
Benzo(j)fluoranthene	18.87	<10	U			
7,12-Dimethylbenzo(a)anthracene	NotFnd	<10	U			
3-Methylcholanthrene	20.95	<50	U			
Picene	23.74	<50	U			
Dibenzo(a,e)pyrene	27.99	<50	U			
Coronene	28.79	<50	U			

Field Sampling Standards	**ng spiked**		**% Rec**	
1-Methylnaphthalene-D10	600	3.48	99.6	
Fluorene D10	600	5.56	101.3	
Terphenyl D14(Surr.)	600	12.49	104.3	
Extraction Standards			**% Rec**	**Limits**
Naphthalene D8	500	2.85	73.2	15-150
2-Methylnaphthalene-D10	500	3.38	81.6	20-150
Acenaphthylene D8	500	4.45	84.3	30-150
Phenanthrene D10	500	7.66	87.3	40-150
Anthracene-D10	500	7.78	83.5	40-150
Fluoranthene D10	500	10.98	94.2	40-150
Benz(a)Anthracene-D12	500	15.48	80.1	40-150
Chrysene D12	500	15.59	77.5	40-150
Benzo(b)Fluoranthene-D12	500	18.81	84.5	40-150
Benzo(k)Fluoranthene-D12	500	18.90	73.3	40-150
Benzo(a)Pyrene D12	500	19.70	88.6	40-150
Perylene D12	500	19.93	82.3	40-150
Indeno(1,2,3,cd)Pyrene-D12	500	23.03	63.8	40-150
Dibenz(a,h)Anthracene-D14	500	23.21	57.3	40-150
Benzo(g,h,i)Perylene D12	500	23.88	61.7	40-150

M Indicates that a peak has been manually integrated.
U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(6 THRU 10) TEST#2**	Sampling Date	6-Mar-24
ALS Sample ID	L2754888-2	Extraction Date	19-Mar-24
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**	**Run 2**
Filename	24032222.D	24032605.D
Run Date	3/23/2024 1:44	3/26/2024 10:03
Final Volume	1 mL	1 mL
Dilution Factor	1	10
Analysis Units	ng/sample	ng/sample
Instrument	MSD-5	MSD-5
Column	HP-5MS US3388814H	HP-5MS US3388814H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**	**Ret. Time.**	**Concentration ng/sample**	**Flags**
Naphthalene				2.87	30300	
2-Methylnaphthalene	3.41	1630				
1-Methylnaphthalene	3.51	1870				
Acenaphthylene	4.47	329				
Acenaphthene	4.74	11.7				
Fluorene	5.62	29.7				
Phenanthrene	7.71	264				
Anthracene	7.82	23.8				
Fluoranthene	11.03	67.9				
Pyrene	11.66	91.5				
Benzo(a)Anthracene	15.55	<10	U			
Chrysene	15.66	<10	U			
Benzo(b)Fluoranthene	18.88	<10	U			
Benzo(k)Fluoranthene	18.95	<10	U			
Benzo(e)Pyrene	19.62	44.9				
Benzo(a)Pyrene	19.74	<10	U			
Perylene	19.98	<10	U			
Indeno(1,2,3-cd)Pyrene	23.11	26.6				
Dibenzo(a,h)Anthracene	23.30	14.4 M				
Benzo(g,h,i)Perylene	23.97	117				
Additional Analytes						
Tetralin	2.75	200				
Quinoline	NotFnd	<10	U			
2-Chloronaphthalene	3.92	138				
Biphenyl	3.90	2900				
o-Terphenyl	8.97	<10	U			
1-Methylphenanthrene	9.23	<10	U			
9-Methylphenanthrene	9.34	16.1				
2-methylanthracene	9.41	<10	U			
9,10-dimethylanthracene	12.06	<10	U			
m-terphenyl	12.08	<10	U			
p-terphenyl	12.55	<10	U			
Benzo(a)fluorene	12.78	<10	U			
Benzo(b)fluorene	13.05	<10	U			
Benzo(j)fluoranthene	18.87	<10	U			
7,12-Dimethylbenzo(a)anthracene	NotFnd	<10	U			
3-Methylcholanthrene	20.90	<50	U			
Picene	23.76	<50	U			
Dibenzo(a,e)pyrene	27.98	<50	U			
Coronene	28.79	65.8 M				

Field Sampling Standards	**ng spiked**		**% Rec**	
1-Methylnaphthalene-D10	600	3.48	96.8	
Fluorene D10	600	5.56	100.2	
Terphenyl D14(Surr.)	600	12.49	105.2	
Extraction Standards			**% Rec**	**Limits**
Naphthalene D8	500	2.85	66.1	15-150
2-Methylnaphthalene-D10	500	3.38	76.7	20-150
Acenaphthylene D8	500	4.45	80.5	30-150
Phenanthrene D10	500	7.66	80.6	40-150
Anthracene-D10	500	7.78	78.1	40-150
Fluoranthene D10	500	10.98	83.9	40-150
Benz(a)Anthracene-D12	500	15.48	63.5	40-150
Chrysene D12	500	15.60	66.4	40-150
Benzo(b)Fluoranthene-D12	500	18.81	70.0	40-150
Benzo(k)Fluoranthene-D12	500	18.90	59.9	40-150
Benzo(a)Pyrene D12	500	19.70	77.2	40-150
Perylene D12	500	19.93	67.6	40-150
Indeno(1,2,3,cd)Pyrene-D12	500	23.03	53.0	40-150
Dibenz(a,h)Anthracene-D14	500	23.22	48.0	40-150
Benzo(g,h,i)Perylene D12	500	23.88	51.3	40-150

M Indicates that a peak has been manually integrated.
U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	**24-22326-SVOC-(11 THRU 15) TEST#3**	Sampling Date	7-Mar-24
ALS Sample ID	L2754888-3	Extraction Date	19-Mar-24
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**	**Run 2**
Filename	24032223.D	24032606.D
Run Date	3/23/2024 2:21	3/26/2024 10:40
Final Volume	1 mL	1 mL
Dilution Factor	1	10
Analysis Units	ng/sample	ng/sample
Instrument	MSD-5	MSD-5
Column	HP-5MS US3388814H	HP-5MS US3388814H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**	**Ret. Time.**	**Concentration ng/sample**	**Flags**
Naphthalene				2.87	16500	
2-Methylnaphthalene	3.41	929				
1-Methylnaphthalene	3.52	1000				
Acenaphthylene	4.47	195				
Acenaphthene	4.74	11.7				
Fluorene	5.61	59.8				
Phenanthrene	7.72	654				
Anthracene	7.82	30.3				
Fluoranthene	11.03	115				
Pyrene	11.66	100				
Benzo(a)Anthracene	15.55	<10	U			
Chrysene	15.66	13.9				
Benzo(b)Fluoranthene	18.87	<10	U			
Benzo(k)Fluoranthene	18.94	<10	U			
Benzo(e)Pyrene	19.61	26.4				
Benzo(a)Pyrene	19.81	<10	U			
Perylene	19.84	<10	U			
Indeno(1,2,3-cd)Pyrene	23.11	14.4				
Dibenzo(a,h)Anthracene	23.25	<10	U			
Benzo(g,h,i)Perylene	23.97	66.2				
Additional Analytes						
Tetralin	2.75	153				
Quinoline	NotFnd	<10	U			
2-Chloronaphthalene	3.93	77.3				
Biphenyl	3.91	1200				
o-Terphenyl	8.98	<10	U			
1-Methylphenanthrene	NotFnd	<10	U			
9-Methylphenanthrene	9.35	24.8				
2-methylanthracene	9.41	<10	U			
9,10-dimethylanthracene	11.90	42.7				
m-terphenyl	12.09	<10	U			
p-terphenyl	12.55	<10	U			
Benzo(a)fluorene	12.79	<10	U			
Benzo(b)fluorene	13.04	<10	U			
Benzo(j)fluoranthene	18.87	<10	U			
7,12-Dimethylbenzo(a)anthracene	NotFnd	<10	U			
3-Methylcholanthrene	NotFnd	<50	U			
Picene	23.77	<50	U			
Dibenzo(a,e)pyrene	27.98	<50	U			
Coronene	28.78	61.8				

Field Sampling Standards	**ng spiked**		**% Rec**
1-Methylnaphthalene-D10	600	3.48	102.4
Fluorene D10	600	5.56	98.5
Terphenyl D14(Surr.)	600	12.49	101.8

Extraction Standards			**% Rec**	**Limits**
Naphthalene D8	500	2.86	56.1	15-150
2-Methylnaphthalene-D10	500	3.38	62.2	20-150
Acenaphthylene D8	500	4.45	56.5	30-150
Phenanthrene D10	500	7.66	67.2	40-150
Anthracene-D10	500	7.78	55.7	40-150
Fluoranthene D10	500	10.98	71.7	40-150
Benz(a)Anthracene-D12	500	15.48	60.0	40-150
Chrysene D12	500	15.60	59.2	40-150
Benzo(b)Fluoranthene-D12	500	18.81	64.0	40-150
Benzo(k)Fluoranthene-D12	500	18.91	48.9	40-150
Benzo(a)Pyrene D12	500	19.69	56.4	40-150
Perylene D12	500	19.93	61.7	40-150
Indeno(1,2,3,cd)Pyrene-D12	500	23.03	53.9	40-150
Dibenz(a,h)Anthracene-D14	500	23.22	45.5	40-150
Benzo(g,h,i)Perylene D12	500	23.88	46.0	40-150

U Indicates that this compound was not detected above the MDL.

ALS Life Sciences

Sample Analysis Report

Sample Name	24-22326-SVOC-(16 THRU 20) BLANK	Sampling Date	6-Mar-24
ALS Sample ID	L2754888-4	Extraction Date	19-Mar-24
Analysis Method	PAH by CARB 429		
Analysis Type	sample		
Sample Matrix	Stack		
Sample Size	1 sample		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	24032220.D
Run Date	3/23/2024 0:30
Final Volume	1 mL
Dilution Factor	1
Analysis Units	ng/sample
Instrument	MSD-5
Column	HP-5MS US3388814H

Target Analytes	**Ret. Time**	**Concentration ng/sample**	**Flags**
Naphthalene	2.87	63.0	B
2-Methylnaphthalene	3.41	<10	U
1-Methylnaphthalene	3.51	<10	U
Acenaphthylene	4.47	<10	U
Acenaphthene	4.74	<10	U
Fluorene	5.62	<10	U
Phenanthrene	7.72	<10	U
Anthracene	7.83	<10	U
Fluoranthene	11.03	<10	U
Pyrene	11.66	<10	U
Benzo(a)Anthracene	15.58	<10	U
Chrysene	15.66	<10	U
Benzo(b)Fluoranthene	18.88	<10	U
Benzo(k)Fluoranthene	18.96	<10	U
Benzo(e)Pyrene	19.57	<10	U
Benzo(a)Pyrene	19.75	<10	U
Perylene	19.94	<10	U
Indeno(1,2,3-cd)Pyrene	23.05	<10	U
Dibenzo(a,h)Anthracene	23.27	<10	U
Benzo(g,h,i)Perylene	23.88	<10	U
Additional Analytes			
Tetralin	2.75	27.0	B
Quinoline	NotFnd	<10	U
2-Chloronaphthalene	3.96	<10	U
Biphenyl	3.91	<10	U
o-Terphenyl	8.54	<10	U
1-Methylphenanthrene	9.21	<10	U
9-Methylphenanthrene	9.35	<10	U
2-methylanthracene	9.41	<10	U
9,10-dimethylanthracene	NotFnd	<10	U
m-terphenyl	12.08	<10	U
p-terphenyl	12.55	<10	U
Benzo(a)fluorene	12.86	<10	U
Benzo(b)fluorene	13.01	<10	U
Benzo(j)fluoranthene	18.90	<10	U
7,12-Dimethylbenzo(a)anthracene	18.89	<10	U
3-Methylcholanthrene	NotFnd	<50	U
Picene	23.72	<50	U
Dibenzo(a,e)pyrene	27.99	<50	U
Coronene	28.77	<50	U

Field Sampling Standards	**ng spiked**		**% Rec**	
1-Methylnaphthalene-D10	600	3.48	96.7	
Fluorene D10	600	5.56	98.4	
Terphenyl D14(Surr.)	600	12.50	109.3	
Extraction Standards			**% Rec**	**Limits**
Naphthalene D8	500	2.86	89.3	15-150
2-Methylnaphthalene-D10	500	3.38	87.4	20-150
Acenaphthylene D8	500	4.45	66.0	30-150
Phenanthrene D10	500	7.67	99.0	40-150
Anthracene-D10	500	7.79	79.3	40-150
Fluoranthene D10	500	10.99	89.8	40-150
Benz(a)Anthracene-D12	500	15.49	51.7	40-150
Chrysene D12	500	15.60	73.0	40-150
Benzo(b)Fluoranthene-D12	500	18.81	73.1	40-150
Benzo(k)Fluoranthene-D12	500	18.90	66.3	40-150
Benzo(a)Pyrene D12	500	19.69	67.5	40-150
Perylene D12	500	19.93	57.2	40-150
Indeno(1,2,3,cd)Pyrene-D12	500	23.03	54.5	40-150
Dibenz(a,h)Anthracene-D14	500	23.22	51.7	40-150
Benzo(g,h,i)Perylene D12	500	23.89	60.6	40-150

U Indicates that this compound was not detected above the MDL.

B Indicates that this compound was detected in the method blank at greater than 10% of the sample value.

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a
ALS Sample ID	WG3788706-2	Extraction Date	19-Mar-24
Analysis Method	PAH by CARB 429		
Analysis Type	LCS		
Sample Matrix	QC		
Sample Size	1 n/a		
Percent Moisture	n/a		
Split Ratio	5	Workgroup	WG3788706

Approved:
Nick Schrobilgen
--e-signature--
01-Apr-2024

Run Information	**Run 1**
Filename	24032216.D
Run Date	3/22/2024 22:01
Final Volume	1 mL
Dilution Factor	1
Analysis Units	%
Instrument	MSD-5
Column	HP-5MS US3388814H

Target Analytes	**ug spiked**	**Ret. Time**	**%**	**Flags**	**Limits**
Naphthalene	500	2.87	85.4		50-150
2-Methylnaphthalene	500	3.41	87.6		50-150
1-Methylnaphthalene	500	3.51	91.4		50-150
Acenaphthylene	500	4.47	88.9		50-150
Acenaphthene	500	4.74	99.7		50-150
Fluorene	500	5.61	90.6		50-150
Phenanthrene	500	7.72	96.2		50-150
Anthracene	500	7.83	90.1		50-150
Fluoranthene	500	11.03	96.4		50-150
Pyrene	500	11.66	99.3		50-150
Benzo(a)Anthracene	500	15.55	114.3		50-150
Chrysene	500	15.67	90.3		50-150
Benzo(b)Fluoranthene	500	18.87	85.5		50-150
Benzo(k)Fluoranthene	500	18.96	100.8		50-150
Benzo(e)Pyrene	500	19.62	110.8		50-150
Benzo(a)Pyrene	500	19.75	92	M	50-150
Perylene	500	19.99	98.3		50-150
Indeno(1,2,3-cd)Pyrene	500	23.10	86.5		50-150
Dibenzo(a,h)Anthracene	500	23.31	93.1		50-150
Benzo(g,h,i)Perylene	500	23.97	89		50-150

Additional Analytes

Tetralin
Quinoline
2-Chloronaphthalene
Biphenyl
o-Terphenyl
1-Methylphenanthrene
9-Methylphenanthrene
2-methylanthracene
9,10-dimethylanthracene
m-terphenyl
p-terphenyl
Benzo(a)fluorene
Benzo(b)fluorene
Benzo(j)fluoranthene
7,12-Dimethylbenzo(a)anthracene
3-Methylcholanthrene
Picene
Dibenzo(a,e)pyrene
Coronene

Field Sampling Standards	**ng spiked**	**% Rec**
1-Methylnaphthalene-D10		NS
Fluorene D10		NS
Terphenyl D14(Surr.)		NS

Extraction Standards			**% Rec**	**Limits**
Naphthalene D8	500	2.86	84.6	30-150
2-Methylnaphthalene-D10	500	3.38	83.3	30-150
Acenaphthylene D8	500	4.45	79.5	30-150
Phenanthrene D10	500	7.66	93.2	50-150
Anthracene-D10	500	7.78	80.1	50-150
Fluoranthene D10	500	10.99	85.9	50-150
Benz(a)Anthracene-D12	500	15.48	53.1	50-150
Chrysene D12	500	15.59	79.7	50-150
Benzo(b)Fluoranthene-D12	500	18.81	70.9	50-150
Benzo(k)Fluoranthene-D12	500	18.90	70.5	50-150
Benzo(a)Pyrene D12	500	19.69	70.1	30-150
Perylene D12	500	19.93	61.0	50-150
Indeno(1,2,3,cd)Pyrene-D12	500	23.02	52.1	50-150
Dibenz(a,h)Anthracene-D14	500	23.21	54.4	50-150
Benzo(g,h,i)Perylene D12	500	23.88	61.2	50-150

M Indicates that a peak has been manually integrated.

NS Indicates that this compound was not spiked in.

APPENDIX 11

Acid Gas Sample Recovery Data Sheet
(1 page)

ORTECH Recovery & Sample Log
Method 26
Incinerator Stack

Environmental Division
Burlington
Work Order Reference
BU2400051

Telephone : +1 905 331 3111

Client: Clean Harbors Sarnia
Job/Report Number: 22326
Received By: C Belore
How Received: Train Recovery
Job Assigned To: ALS
PO #: 22326-J2958

Test Number	ORTECH Sample ID 24-22326-M26-	Date Sampled	Contents of Impingers	Initial Volume (ml)	Final Volume (ml)	Gain (ml)	H_2O Rinse (ml)	Total Sample Volume (ml)	Analysis
1	1	MARCH 5, 2024	0.1N H2SO4	30.0	110	80	11	121	HCl,HF
2	~~1~~ 2	MARCH 6, 2024	0.1N H2SO4	30.0	120	90	11	131	HCl,HF
3	~~1~~ 3	MARCH 7, 2024	0.1N H2SO4	30.0	117	87	11	128	HCl,HF
Blank	~~1~~ 4	MARCH 7, 2024	0.1N H2SO4	30.0	30	0	11	41	HCl,HF

Impinger 1 empty, Imp 2+3 30ml split 0.1n H2SO4, Imp 4 & 5 empty, Imp 6 Si Gel

Relinquished by: [signature] Date: MAR 8/24

Relinquished to: Abram Britan Date: 8-MAR 2024
10:20 11.5°C

APPENDIX 12

Acid Gas Analytical Report
(14 pages)

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CERTIFICATE OF ANALYSIS

Work Order	: **BU2400051**	Page	: 1 of 3
Client	: **ORTECH Environmental Inc.**	Laboratory	: ALS Environmental - Burlington
Contact	: Chris Belore	Account Manager	: Lynne Wrona
Address	: 804 Southdown Road Mississauga ON Canada L5J 2Y4	Address	: 1435 Norjohn Court, Unit 1 Burlington ON Canada L7L 0E6
Telephone	: 905 822 4120	Telephone	: +1 905 331 3111
Project	: 22326 Clean Harbors	Date Samples Received	: 08-Mar-2024 10:20
PO	: 22326-J2958	Date Analysis Commenced	: 12-Mar-2024
C-O-C number	: ----	Issue Date	: 20-Mar-2024 15:36
Sampler	: Client		
Site	: ----		
Quote number	: Stack SOA		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Gamini Nadu	Analyst	Inorganics, Burlington, Ontario
Philip Elder	Manager - Inorganics	Inorganics, Burlington, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
L	litres
mg/L	milligrams per litre
mg/sample	milligrams per sample

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Stack Emissions**

(Matrix: **Air**)

Analyte	CAS Number	Method/Lab	LOR	Unit	24-22326-M26-1 Test#1	24-22326-M26-2 Test#2	24-22326-M26-3 Test#3	24-22326-M26-4 Blank	----
				Client sampling date / time	05-Mar-2024 00:00	06-Mar-2024 00:00	07-Mar-2024 00:00	07-Mar-2024 00:00	----
					BU2400051-001	BU2400051-002	BU2400051-003	BU2400051-004	--------
					Result	Result	Result	Result	----
Physical Tests									
Volume, impinger	n/a	EF003.I/BU	0.0010	L	0.128	0.138	0.134	0.0440	----
Inorganics									
Hydrogen chloride, average	7647-01-0	EC252/BU	0.015	mg/sample	1.62	4.07	5.17	<0.021	----
Hydrogen chloride, replicate 1	7647-01-0	EC252/BU	0.015	mg/sample	1.62	4.07	5.17	<0.021	----
Hydrogen chloride, replicate 2	7647-01-0	EC252/BU	0.015	mg/sample	1.62	4.07	5.17	<0.021	----
Hydrogen fluoride, average	7664-39-3	EC252/BU	0.0098	mg/sample	3.96	5.68	4.40	<0.0145	----
Hydrogen fluoride, replicate 1	7664-39-3	EC252/BU	0.0098	mg/sample	3.97	5.68	4.40	<0.0145	----
Hydrogen fluoride, replicate 2	7664-39-3	EC252/BU	0.0098	mg/sample	3.94	5.67	4.40	<0.0145	----
Hydrogen fluoride, replicate 1	7664-39-3	E252/BU	0.33	mg/L	31.0	41.2	32.8	<0.33	----
Hydrogen fluoride, replicate 2	7664-39-3	E252/BU	0.33	mg/L	30.8	41.1	32.8	<0.33	----
Hydrogen fluoride, average	7664-39-3	E252/BU	0.33	mg/L	31.0	41.1	32.8	<0.33	----
Hydrogen chloride, replicate 1	7647-01-0	E252/BU	0.48	mg/L	12.7	29.5	38.6	<0.48	----
Hydrogen chloride, replicate 2	7647-01-0	E252/BU	0.48	mg/L	12.7	29.5	38.6	<0.48	----
Hydrogen chloride, average	7647-01-0	E252/BU	0.48	mg/L	12.7	29.5	38.6	<0.48	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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CERTIFICATE OF ANALYSIS

Work Order	: **BU2400051**	Page	: 1 of 4
Client	: **ORTECH Environmental Inc.**	Laboratory	: ALS Environmental - Burlington
Contact	: Chris Belore	Account Manager	: Lynne Wrona
Address	: 804 Southdown Road Mississauga ON Canada L5J 2Y4	Address	: 1435 Norjohn Court, Unit 1 Burlington ON Canada L7L 0E6
Telephone	: 905 822 4120	Telephone	: +1 905 331 3111
Project	: 22326 Clean Harbors	Date Samples Received	: 08-Mar-2024 10:20
PO	: 22326-J2958	Date Analysis Commenced	: 12-Mar-2024
C-O-C number	: ----	Issue Date	: 20-Mar-2024 15:36
Sampler	: Client		
Site	: ----		
Quote number	: Stack SOA		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Gamini Nadu	Analyst	Inorganics, Burlington, Ontario
Philip Elder	Manager - Inorganics	Inorganics, Burlington, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.
Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).
Measurement Uncertainty: The reported uncertainties in this report are expanded uncertainties calculated using a coverage factor of 2, which gives a level of confidence of approximately 95%.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Unit	*Description*
L	litres
mg/L	milligrams per litre
mg/sample	milligrams per sample

>: greater than.
<: less than.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

BU2400051-001

Sub-Matrix: **Stack Emissions**

(Matrix: **Air**)

Client sample ID: 24-22326-M26-1 Test#1

Client sampling date / time: 05-Mar-2024

Analyte	*CAS Number*	*Result*	*LOR*	*Unit*	*Method/Lab*	*Prep Date*	*Analysis Date*	*QCLot*
Physical Tests								
Volume, impinger	n/a	0.128	0.0010	L	EF003.I/BU	-	12-Mar-2024	-
Inorganics								
Hydrogen chloride, average	7647-01-0	1.62	0.061	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen chloride, replicate 1	7647-01-0	1.62	0.061	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen chloride, replicate 2	7647-01-0	1.62	0.061	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, average	7664-39-3	3.96	0.0422	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 1	7664-39-3	3.97	0.0422	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 2	7664-39-3	3.94	0.0422	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 1	7664-39-3	31.0	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen fluoride, replicate 2	7664-39-3	30.8	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen fluoride, average	7664-39-3	31.0	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, replicate 1	7647-01-0	12.7	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, replicate 2	7647-01-0	12.7	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, average	7647-01-0	12.7	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

BU2400051-002

Sub-Matrix: **Stack Emissions**

(Matrix: **Air**)

Client sample ID: 24-22326-M26-2 Test#2

Client sampling date / time: 06-Mar-2024

Analyte	*CAS Number*	*Result*	*LOR*	*Unit*	*Method/Lab*	*Prep Date*	*Analysis Date*	*QCLot*
Physical Tests								
Volume, impinger	n/a	0.138	0.0010	L	EF003.I/BU	-	12-Mar-2024	-
Inorganics								
Hydrogen chloride, average	7647-01-0	4.07	0.066	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen chloride, replicate 1	7647-01-0	4.07	0.066	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen chloride, replicate 2	7647-01-0	4.07	0.066	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, average	7664-39-3	5.68	0.0455	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 1	7664-39-3	5.68	0.0455	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 2	7664-39-3	5.67	0.0455	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 1	7664-39-3	41.2	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen fluoride, replicate 2	7664-39-3	41.1	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen fluoride, average	7664-39-3	41.1	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, replicate 1	7647-01-0	29.5	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, replicate 2	7647-01-0	29.5	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, average	7647-01-0	29.5	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

BU2400051-003

Sub-Matrix: **Stack Emissions**
(Matrix: **Air**)

Client sample ID: 24-22326-M26-3 Test#3
Client sampling date / time: 07-Mar-2024

Analyte	*CAS Number*	*Result*	*LOR*	*Unit*	*Method/Lab*	*Prep Date*	*Analysis Date*	*QCLot*
Physical Tests								
Volume, impinger	n/a	0.134	0.0010	L	EF003.I/BU	-	12-Mar-2024	-
Inorganics								
Hydrogen chloride, average	7647-01-0	5.17	0.064	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen chloride, replicate 1	7647-01-0	5.17	0.064	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen chloride, replicate 2	7647-01-0	5.17	0.064	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, average	7664-39-3	4.40	0.0442	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 1	7664-39-3	4.40	0.0442	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 2	7664-39-3	4.40	0.0442	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 1	7664-39-3	32.8	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen fluoride, replicate 2	7664-39-3	32.8	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen fluoride, average	7664-39-3	32.8	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, replicate 1	7647-01-0	38.6	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, replicate 2	7647-01-0	38.6	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, average	7647-01-0	38.6	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

BU2400051-004

Sub-Matrix: **Stack Emissions**
(Matrix: **Air**)

Client sample ID: 24-22326-M26-4 Blank
Client sampling date / time: 07-Mar-2024

Analyte	*CAS Number*	*Result*	*LOR*	*Unit*	*Method/Lab*	*Prep Date*	*Analysis Date*	*QCLot*
Physical Tests								
Volume, impinger	n/a	0.0440	0.0010	L	EF003.I/BU	-	12-Mar-2024	-
Inorganics								
Hydrogen chloride, average	7647-01-0	<0.021	0.021	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen chloride, replicate 1	7647-01-0	<0.021	0.021	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen chloride, replicate 2	7647-01-0	<0.021	0.021	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, average	7664-39-3	<0.0145	0.0145	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 1	7664-39-3	<0.0145	0.0145	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 2	7664-39-3	<0.0145	0.0145	mg/sample	EC252/BU	-	15-Mar-2024	-
Hydrogen fluoride, replicate 1	7664-39-3	<0.33	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen fluoride, replicate 2	7664-39-3	<0.33	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen fluoride, average	7664-39-3	<0.33	0.33	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, replicate 1	7647-01-0	<0.48	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, replicate 2	7647-01-0	<0.48	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924
Hydrogen chloride, average	7647-01-0	<0.48	0.48	mg/L	E252/BU	12-Mar-2024	12-Mar-2024	1362924

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	:**BU2400051**	Page	: 1 of 5
Client	:**ORTECH Environmental Inc.**	Laboratory	: ALS Environmental - Burlington
Contact	: Chris Belore	Account Manager	: Lynne Wrona
Address	: 804 Southdown Road Mississauga ON Canada L5J 2Y4	Address	: 1435 Norjohn Court, Unit 1 Burlington, Ontario Canada L7L 0E6
Telephone	: 905 822 4120	Telephone	: +1 905 331 3111
Project	: 22326 Clean Harbors	Date Samples Received	: 08-Mar-2024 10:20
PO	: 22326-J2958	Issue Date	: 20-Mar-2024 15:36
C-O-C number	: ----		
Sampler	: Client		
Site	: ----		
Quote number	: Stack SOA		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "—" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Air**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
Container / Client Sample ID(s)			*Preparation Date*	*Holding Times Rec*	*Holding Times Actual*	*Eval*	*Analysis Date*	*Holding Times Rec*	*Holding Times Actual*	*Eval*
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1N H2SO4) 24-22326-M26-3 Test#3	E252	07-Mar-2024	12-Mar-2024	28 days	5 days	✓	12-Mar-2024	28 days	5 days	✓
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1N H2SO4) 24-22326-M26-4 Blank	E252	07-Mar-2024	12-Mar-2024	28 days	5 days	✓	12-Mar-2024	28 days	5 days	✓
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1N H2SO4) 24-22326-M26-2 Test#2	E252	06-Mar-2024	12-Mar-2024	28 days	6 days	✓	12-Mar-2024	28 days	6 days	✓
Inorganics : Ion Chromatography Analysis (M26/26A Anions)										
M26/A: Amber Glass (0.1N H2SO4) 24-22326-M26-1 Test#1	E252	05-Mar-2024	12-Mar-2024	28 days	7 days	✓	12-Mar-2024	28 days	7 days	✓
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1N H2SO4) 24-22326-M26-3 Test#3	EF003.I	07-Mar-2024	----	----	----		12-Mar-2024	----	5 days	
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1N H2SO4) 24-22326-M26-4 Blank	EF003.I	07-Mar-2024	----	----	----		12-Mar-2024	----	5 days	
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1N H2SO4) 24-22326-M26-2 Test#2	EF003.I	06-Mar-2024	----	----	----		12-Mar-2024	----	6 days	

Matrix: **Air** Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Stack Emission Impinger volume (L)										
M26/A: Amber Glass (0.1N H2SO4) 24-22326-M26-1 Test#1	EF003.I	05-Mar-2024	----	----	----		12-Mar-2024	----	7 days	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ion Chromatography Analysis (M26/26A Anions)	E252 ALS Environmental - Burlington	Air	USEPA Methods 26 and 26A	Client supplied liquid samples are split and buffered (acidic media) then sub-sampled (or sub-sampled directly for basic media) for IC analysis. Results are reported as hydrogen halides (acidic media) or halogens (basic media).
Ion Chromatography Analysis (M26/26A Anions)	EC252 ALS Environmental - Burlington	Air	unit conversion	Convert mg/L to mg/sample
Stack Emission Impinger volume (L)	EF003.I ALS Environmental - Burlington	Air		Volume of impinger contents is measured in the laboratory for use in later calculations.

ALS Canada Ltd.

right solutions.
right partner.

QUALITY CONTROL REPORT

Work Order	: **BU2400051**	Page	: 1 of 2
Client	: ORTECH Environmental Inc.	Laboratory	: ALS Environmental - Burlington
Contact	: Chris Belore	Account Manager	: Lynne Wrona
Address	: 804 Southdown Road Mississauga ON Canada L5J 2Y4	Address	: 1435 Norjohn Court, Unit 1 Burlington, Ontario Canada L7L 0E6
Telephone	:	Telephone	: +1 905 331 3111
Project	: 22326 Clean Harbors	Date Samples Received	: 08-Mar-2024 10:20
PO	: 22326-J2958	Date Analysis Commenced	: 12-Mar-2024
C-O-C number	: ----	Issue Date	: 20-Mar-2024 15:37
Sampler	: Client 905 822 4120		
Site	: ----		
Quote number	: Stack SOA		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Gamini Nadu	Analyst	Burlington Inorganics, Burlington, Ontario
Philip Elder	Manager - Inorganics	Burlington Inorganics, Burlington, Ontario

Work Order :	BU2400051
Client :	ORTECH Environmental Inc.
Project :	22326 Clean Harbors

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

APPENDIX 13

Volatile Organic Compounds Analytical Report
(16 pages)

BUREAU VERITAS

Your P.O. #: 22326-J2959
Your Project #: 22326
Site Location: CLEAN HARBOR

Attention: CHRIS BELORE

ORTECH Environmental
804 Southdown Road
Mississauga, ON
CANADA L5J 2Y4

Report Date: 2024/03/22
Report #: R8077585
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C470515
Received: 2024/03/08, 12:35

Sample Matrix: Stack Sampling Train
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
VOST EPA5041A, 8260D for 0030, 0031	3	N/A	2024/03/18	BRL SOP-00302	EPA5041A, 8260D
VOST EPA5041A, 8260D for 0030, 0031	2	N/A	2024/03/19	BRL SOP-00302	EPA5041A, 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 22326-J2959
Your Project #: 22326
Site Location: CLEAN HARBOR

Attention: CHRIS BELORE

ORTECH Environmental
804 Southdown Road
Mississauga, ON
CANADA L5J 2Y4

Report Date: 2024/03/22
Report #: R8077585
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C470515
Received: 2024/03/08, 12:35

Encryption Key

Jade Browne
Project Manager Assistant - Air
22 Mar 2024 17:18:48

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: TMP-Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769
==

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C470515
Report Date: 2024/03/22

ORTECH Environmental
Client Project #: 22326
Site Location: CLEAN HARBOR
Your P.O. #: 22326-J2959

VOLATILE ORGANICS BY GC/MS (STACK SAMPLING TRAIN)

Bureau Veritas ID		YOR500	YOR501	YOR502			
Sampling Date		2024/03/07	2024/03/08	2024/03/05			
	UNITS	24-22326-VOST-FIELD BLANK 6A/B	24-22326-VOST-TRIP BLANK 3A/B	24-22326-VOST- T1 - 1A/B	RDL	MDL	QC Batch
Dichlorodifluoromethane (FREON 12)	ug	<0.050	<0.050	<0.050	0.050	0.020	9280433
Vinyl Chloride	ug	<0.050	<0.050	<0.050	0.050	0.013	9280433
Bromomethane	ug	<0.050	<0.050	1.29	0.050	0.015	9280433
Trichlorofluoromethane (FREON 11)	ug	<0.050	<0.050	<0.050	0.050	0.010	9280433
Acetone (2-Propanone)	ug	<0.050	<0.050	1.75	0.050	0.025	9280433
1,1-Dichloroethylene	ug	<0.050	<0.050	<0.050	0.050	0.011	9280433
Methylene Chloride(Dichloromethane)	ug	<0.050	<0.050	0.065	0.050	0.020	9280433
trans-1,2-Dichloroethylene	ug	<0.050	<0.050	<0.050	0.050	0.010	9280433
Chloroform	ug	<0.050	<0.050	<0.050	0.050	0.011	9280433
1,2-Dichloroethane	ug	<0.050	<0.050	<0.050	0.050	0.0070	9280433
Methyl Ethyl Ketone (2-Butanone)	ug	<0.050	<0.050	1.03	0.050	0.036	9280433
1,1,1-Trichloroethane	ug	<0.050	<0.050	<0.050	0.050	0.014	9280433
Carbon Tetrachloride	ug	<0.050	<0.050	<0.050	0.050	0.016	9280433
Benzene	ug	<0.050	<0.050	4.29	0.050	0.0010	9280433
1,2-Dichloropropane	ug	<0.050	<0.050	<0.050	0.050	0.011	9280433
Trichloroethylene	ug	<0.050	<0.050	<0.050	0.050	0.011	9280433
Bromodichloromethane	ug	<0.050	<0.050	0.086	0.050	0.011	9280433
Dibromochloromethane	ug	<0.050	<0.050	0.188	0.050	0.0090	9280433
Toluene	ug	<0.050	<0.050	2.15	0.050	0.014	9280433
Ethylene Dibromide	ug	<0.050	<0.050	<0.050	0.050	0.010	9280433
Tetrachloroethylene	ug	<0.050	<0.050	<0.050	0.050	0.018	9280433
Ethylbenzene	ug	<0.050	<0.050	0.092	0.050	0.014	9280433
m / p-Xylene	ug	<0.10	<0.10	0.14	0.10	0.015	9280433
Styrene	ug	<0.050	<0.050	0.375	0.050	0.012	9280433
o-Xylene	ug	<0.050	<0.050	0.057	0.050	0.015	9280433
Bromoform	ug	<0.050	<0.050	0.203	0.050	0.014	9280433
Surrogate Recovery (%)							
Bromofluorobenzene	%	90	90	107	N/A	N/A	9280433
D10-Ethylbenzene (FS)	%	104	107	99	N/A	N/A	9280433
D4-1,2-Dichloroethane	%	99	103	76	N/A	N/A	9280433
D8-Toluene	%	102	101	99	N/A	N/A	9280433

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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VOLATILE ORGANICS BY GC/MS (STACK SAMPLING TRAIN)

Bureau Veritas ID		YOR503	YOR505			
Sampling Date		2024/03/06	2024/03/07			
	UNITS	24-22326-VOST- T2 - 9A/B	24-22326-VOST- T4 - 7A/B	RDL	MDL	QC Batch
Dichlorodifluoromethane (FREON 12)	ug	<0.050	<0.050	0.050	0.020	9282960
Vinyl Chloride	ug	<0.050	<0.050	0.050	0.013	9282960
Bromomethane	ug	1.58	1.18	0.050	0.015	9282960
Trichlorofluoromethane (FREON 11)	ug	<0.050	<0.050	0.050	0.010	9282960
Acetone (2-Propanone)	ug	3.00	3.02	0.050	0.025	9282960
1,1-Dichloroethylene	ug	<0.050	<0.050	0.050	0.011	9282960
Methylene Chloride(Dichloromethane)	ug	0.061	<0.050	0.050	0.020	9282960
trans-1,2-Dichloroethylene	ug	<0.050	<0.050	0.050	0.010	9282960
Chloroform	ug	<0.050	<0.050	0.050	0.011	9282960
1,2-Dichloroethane	ug	<0.050	<0.050	0.050	0.0070	9282960
Methyl Ethyl Ketone (2-Butanone)	ug	1.65	1.40	0.050	0.036	9282960
1,1,1-Trichloroethane	ug	<0.050	<0.050	0.050	0.014	9282960
Carbon Tetrachloride	ug	<0.050	<0.050	0.050	0.016	9282960
Benzene	ug	4.39	4.25	0.050	0.0010	9282960
1,2-Dichloropropane	ug	<0.050	<0.050	0.050	0.011	9282960
Trichloroethylene	ug	<0.050	<0.050	0.050	0.011	9282960
Bromodichloromethane	ug	0.081	0.084	0.050	0.011	9282960
Dibromochloromethane	ug	0.205	0.213	0.050	0.0090	9282960
Toluene	ug	2.63	2.36	0.050	0.014	9282960
Ethylene Dibromide	ug	<0.050	<0.050	0.050	0.010	9282960
Tetrachloroethylene	ug	<0.050	<0.050	0.050	0.018	9282960
Ethylbenzene	ug	0.100	0.079	0.050	0.014	9282960
m / p-Xylene	ug	0.14	0.12	0.10	0.015	9282960
Styrene	ug	0.469	0.387	0.050	0.012	9282960
o-Xylene	ug	0.055	<0.050	0.050	0.015	9282960
Bromoform	ug	0.250	0.247	0.050	0.014	9282960
Surrogate Recovery (%)						
Bromofluorobenzene	%	105	106	N/A	N/A	9282960
D10-Ethylbenzene (FS)	%	92	105	N/A	N/A	9282960
D4-1,2-Dichloroethane	%	82	83	N/A	N/A	9282960
D8-Toluene	%	98	98	N/A	N/A	9282960

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

BUREAU VERITAS

Bureau Veritas Job #: C470515
Report Date: 2024/03/22

ORTECH Environmental
Client Project #: 22326
Site Location: CLEAN HARBOR
Your P.O. #: 22326-J2959

TEST SUMMARY

Bureau Veritas ID: YOR500
Sample ID: 24-22326-VOST-FIELD BLANK 6A/B
Matrix: Stack Sampling Train

Collected: 2024/03/07
Shipped:
Received: 2024/03/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VOST EPA5041A, 8260D for 0030, 0031	GC/MS	9280433	N/A	2024/03/18	Yujie Yan

Bureau Veritas ID: YOR501
Sample ID: 24-22326-VOST-TRIP BLANK 3A/B
Matrix: Stack Sampling Train

Collected: 2024/03/08
Shipped:
Received: 2024/03/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VOST EPA5041A, 8260D for 0030, 0031	GC/MS	9280433	N/A	2024/03/18	Yujie Yan

Bureau Veritas ID: YOR502
Sample ID: 24-22326-VOST- T1 - 1A/B
Matrix: Stack Sampling Train

Collected: 2024/03/05
Shipped:
Received: 2024/03/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VOST EPA5041A, 8260D for 0030, 0031	GC/MS	9280433	N/A	2024/03/18	Yujie Yan

Bureau Veritas ID: YOR503
Sample ID: 24-22326-VOST- T2 - 9A/B
Matrix: Stack Sampling Train

Collected: 2024/03/06
Shipped:
Received: 2024/03/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VOST EPA5041A, 8260D for 0030, 0031	GC/MS	9282960	N/A	2024/03/19	Yujie Yan

Bureau Veritas ID: YOR505
Sample ID: 24-22326-VOST- T4 - 7A/B
Matrix: Stack Sampling Train

Collected: 2024/03/07
Shipped:
Received: 2024/03/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VOST EPA5041A, 8260D for 0030, 0031	GC/MS	9282960	N/A	2024/03/19	Yujie Yan

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GENERAL COMMENTS

Sample YOR502 [24-22326-VOST- T1 - 1A/B] : Bromomethane, acetone, 2-Butanone, benzene and toluene exceed calibration range in this sample, results for these analytes are estimates only.

Sample YOR503 [24-22326-VOST- T2 - 9A/B] : Bromomethane, acetone, 2-Butanone, benzene and toluene exceed calibration range in this sample, results for these analytes are estimates only.

Sample YOR505 [24-22326-VOST- T4 - 7A/B] : Bromomethane, acetone, 2-Butanone, benzene and toluene exceed calibration range in this sample, results for these analytes are estimates only.

Results relate only to the items tested.

Bureau Veritas Job #: C470515
Report Date: 2024/03/22

ORTECH Environmental
Client Project #: 22326
Site Location: CLEAN HARBOR
Your P.O. #: 22326-J2959

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
9280433	YYA	Spiked Blank	Bromofluorobenzene	2024/03/18		102	%	43 - 131
			D10-Ethylbenzene (FS)	2024/03/18		92	%	47 - 157
			D4-1,2-Dichloroethane	2024/03/18		101	%	64 - 133
			D8-Toluene	2024/03/18		101	%	68 - 121
			Dichlorodifluoromethane (FREON 12)	2024/03/18		117	%	50 - 150
			Vinyl Chloride	2024/03/18		102	%	50 - 150
			Bromomethane	2024/03/18		117	%	50 - 150
			Trichlorofluoromethane (FREON 11)	2024/03/18		96	%	50 - 150
			Acetone (2-Propanone)	2024/03/18		92	%	50 - 150
			1,1-Dichloroethylene	2024/03/18		98	%	50 - 150
			Methylene Chloride(Dichloromethane)	2024/03/18		96	%	50 - 150
			trans-1,2-Dichloroethylene	2024/03/18		97	%	50 - 150
			Chloroform	2024/03/18		93	%	50 - 150
			1,2-Dichloroethane	2024/03/18		95	%	50 - 150
			Methyl Ethyl Ketone (2-Butanone)	2024/03/18		88	%	50 - 150
			1,1,1-Trichloroethane	2024/03/18		95	%	50 - 150
			Carbon Tetrachloride	2024/03/18		93	%	50 - 150
			Benzene	2024/03/18		95	%	50 - 150
			1,2-Dichloropropane	2024/03/18		97	%	50 - 150
			Trichloroethylene	2024/03/18		94	%	50 - 150
			Bromodichloromethane	2024/03/18		95	%	50 - 150
			Dibromochloromethane	2024/03/18		97	%	50 - 150
			Toluene	2024/03/18		96	%	50 - 150
			Ethylene Dibromide	2024/03/18		96	%	50 - 150
			Tetrachloroethylene	2024/03/18		92	%	50 - 150
			Ethylbenzene	2024/03/18		94	%	50 - 150
			m / p-Xylene	2024/03/18		94	%	50 - 150
			Styrene	2024/03/18		94	%	50 - 150
			o-Xylene	2024/03/18		94	%	50 - 150
			Bromoform	2024/03/18		95	%	50 - 150
9280433	YYA	Method Blank	Bromofluorobenzene	2024/03/18		94	%	43 - 131
			D10-Ethylbenzene (FS)	2024/03/18		76	%	47 - 157
			D4-1,2-Dichloroethane	2024/03/18		102	%	64 - 133
			D8-Toluene	2024/03/18		106	%	68 - 121
			Dichlorodifluoromethane (FREON 12)	2024/03/18	<0.050		ug	
			Vinyl Chloride	2024/03/18	<0.050		ug	
			Bromomethane	2024/03/18	<0.050		ug	
			Trichlorofluoromethane (FREON 11)	2024/03/18	<0.050		ug	
			Acetone (2-Propanone)	2024/03/18	<0.050		ug	
			1,1-Dichloroethylene	2024/03/18	<0.050		ug	
			Methylene Chloride(Dichloromethane)	2024/03/18	<0.050		ug	
			trans-1,2-Dichloroethylene	2024/03/18	<0.050		ug	
			Chloroform	2024/03/18	<0.050		ug	
			1,2-Dichloroethane	2024/03/18	<0.050		ug	
			Methyl Ethyl Ketone (2-Butanone)	2024/03/18	<0.050		ug	
			1,1,1-Trichloroethane	2024/03/18	<0.050		ug	
			Carbon Tetrachloride	2024/03/18	<0.050		ug	
			Benzene	2024/03/18	<0.050		ug	
			1,2-Dichloropropane	2024/03/18	<0.050		ug	
			Trichloroethylene	2024/03/18	<0.050		ug	
			Bromodichloromethane	2024/03/18	<0.050		ug	

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Bureau Veritas Job #: C470515
Report Date: 2024/03/22

ORTECH Environmental
Client Project #: 22326
Site Location: CLEAN HARBOR
Your P.O. #: 22326-J2959

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Dibromochloromethane	2024/03/18	<0.050		ug	
			Toluene	2024/03/18	<0.050		ug	
			Ethylene Dibromide	2024/03/18	<0.050		ug	
			Tetrachloroethylene	2024/03/18	<0.050		ug	
			Ethylbenzene	2024/03/18	<0.050		ug	
			m / p-Xylene	2024/03/18	<0.10		ug	
			Styrene	2024/03/18	<0.050		ug	
			o-Xylene	2024/03/18	<0.050		ug	
			Bromoform	2024/03/18	<0.050		ug	
9282960	YYA	Spiked Blank	Bromofluorobenzene	2024/03/19		101	%	43 - 131
			D10-Ethylbenzene (FS)	2024/03/19		102	%	47 - 157
			D4-1,2-Dichloroethane	2024/03/19		103	%	64 - 133
			D8-Toluene	2024/03/19		100	%	68 - 121
			Dichlorodifluoromethane (FREON 12)	2024/03/19		124	%	50 - 150
			Vinyl Chloride	2024/03/19		120	%	50 - 150
			Bromomethane	2024/03/19		136	%	50 - 150
			Trichlorofluoromethane (FREON 11)	2024/03/19		111	%	50 - 150
			Acetone (2-Propanone)	2024/03/19		83	%	50 - 150
			1,1-Dichloroethylene	2024/03/19		116	%	50 - 150
			Methylene Chloride(Dichloromethane)	2024/03/19		113	%	50 - 150
			trans-1,2-Dichloroethylene	2024/03/19		115	%	50 - 150
			Chloroform	2024/03/19		100	%	50 - 150
			1,2-Dichloroethane	2024/03/19		104	%	50 - 150
			Methyl Ethyl Ketone (2-Butanone)	2024/03/19		80	%	50 - 150
			1,1,1-Trichloroethane	2024/03/19		103	%	50 - 150
			Carbon Tetrachloride	2024/03/19		102	%	50 - 150
			Benzene	2024/03/19		104	%	50 - 150
			1,2-Dichloropropane	2024/03/19		105	%	50 - 150
			Trichloroethylene	2024/03/19		101	%	50 - 150
			Bromodichloromethane	2024/03/19		101	%	50 - 150
			Dibromochloromethane	2024/03/19		101	%	50 - 150
			Toluene	2024/03/19		103	%	50 - 150
			Ethylene Dibromide	2024/03/19		99	%	50 - 150
			Tetrachloroethylene	2024/03/19		95	%	50 - 150
			Ethylbenzene	2024/03/19		104	%	50 - 150
			m / p-Xylene	2024/03/19		104	%	50 - 150
			Styrene	2024/03/19		104	%	50 - 150
			o-Xylene	2024/03/19		103	%	50 - 150
			Bromoform	2024/03/19		94	%	50 - 150
9282960	YYA	Method Blank	Bromofluorobenzene	2024/03/19		91	%	43 - 131
			D10-Ethylbenzene (FS)	2024/03/19		88	%	47 - 157
			D4-1,2-Dichloroethane	2024/03/19		104	%	64 - 133
			D8-Toluene	2024/03/19		105	%	68 - 121
			Dichlorodifluoromethane (FREON 12)	2024/03/19	<0.050		ug	
			Vinyl Chloride	2024/03/19	<0.050		ug	
			Bromomethane	2024/03/19	<0.050		ug	
			Trichlorofluoromethane (FREON 11)	2024/03/19	<0.050		ug	
			Acetone (2-Propanone)	2024/03/19	<0.050		ug	
			1,1-Dichloroethylene	2024/03/19	<0.050		ug	
			Methylene Chloride(Dichloromethane)	2024/03/19	<0.050		ug	
			trans-1,2-Dichloroethylene	2024/03/19	<0.050		ug	

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Chloroform	2024/03/19	<0.050		ug	
			1,2-Dichloroethane	2024/03/19	<0.050		ug	
			Methyl Ethyl Ketone (2-Butanone)	2024/03/19	<0.050		ug	
			1,1,1-Trichloroethane	2024/03/19	<0.050		ug	
			Carbon Tetrachloride	2024/03/19	<0.050		ug	
			Benzene	2024/03/19	<0.050		ug	
			1,2-Dichloropropane	2024/03/19	<0.050		ug	
			Trichloroethylene	2024/03/19	<0.050		ug	
			Bromodichloromethane	2024/03/19	<0.050		ug	
			Dibromochloromethane	2024/03/19	<0.050		ug	
			Toluene	2024/03/19	<0.050		ug	
			Ethylene Dibromide	2024/03/19	<0.050		ug	
			Tetrachloroethylene	2024/03/19	<0.050		ug	
			Ethylbenzene	2024/03/19	<0.050		ug	
			m / p-Xylene	2024/03/19	<0.10		ug	
			Styrene	2024/03/19	<0.050		ug	
			o-Xylene	2024/03/19	<0.050		ug	
			Bromoform	2024/03/19	<0.050		ug	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

AMacfarl

Anke Macfarlane, Laboratory Manager, VOC

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#: Method Blank

Field ID#: Method Blank

Number of TICs found:_____NA_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		Cumene < 0.05ug			
2.		1,3,5-Trimethylbenzene < 0.05 ug			
3.		Trichlorotrifluoroethane < 0.05ug			
4.					

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#: YOR500

Field ID#: 24-22326-VOST-FIELD BLANK 6A/B

Number of TICs found:_____NA_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		Cumene < 0.05ug			
2.		1,3,5-Trimethylbenzene < 0.05 ug			
3.		Trichlorotrifluoroethane < 0.05ug			
4.					

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#: YOR501

Field ID#: 24-22326-VOST-TRIP BLANK 3A/B

Number of TICs found:_____NA_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		Cumene < 0.05ug			
2.		1,3,5-Trimethylbenzene < 0.05 ug			
3.		Trichlorotrifluoroethane < 0.05ug			
4.					

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#: YOR502

Field ID#: 24-22326-VOST-T1 1A/B

Number of TICs found:_____NA_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		Cumene < 0.05ug			
2.		1,3,5-Trimethylbenzene < 0.05 ug			
3.		Trichlorotrifluoroethane < 0.05ug			
4.					

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#: YOR503

Field ID#: 24-22326-VOST-T2 9A/B

Number of TICs found:_____NA_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		Cumene < 0.05ug			
2.		1,3,5-Trimethylbenzene < 0.05 ug			
3.		Trichlorotrifluoroethane < 0.05ug			
4.					

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#: YOR505

Field ID#: 24-22326-VOST-T4 7A/B

Number of TICs found:_____NA_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		Cumene < 0.05ug			
2.		1,3,5-Trimethylbenzene < 0.05 ug			
3.		Trichlorotrifluoroethane < 0.05ug			
4.					

APPENDIX 14

Pre-Test Plan Acceptance Letter
(2 pages)

Ministry of the Environment, Conservation and Parks
Technical Assessment and Standards Development Branch
40 St. Clair Avenue West
7th Floor
Toronto ON M4V 1M2
Phone: 416.327.5519
Fax: 416.327.2936

Ministère de l'Environnement, de la Protection de la nature et des Parcs
Direction des évaluations techniques et de l'élaboration des normes
40, avenue St. Clair Ouest
7e étage
Toronto, ON M4V 1M2
Tél: 416 .327.5519
Téléc: 416. 327.2936

Ontario

Via email: cbelore@ortech.ca

TSS File No.: SR:SA: 110241:24

2024/02/15

Mr. Chris Belore
ORTECH

Dear Mr. Belore:

Re.: Pre-test Plan for source testing to be conducted at Clean Harbors Canada Inc.

We received your pre-test plan letter (Project #22326), dated February 5, 2024, prepared on behalf of Clean Harbors Canada Inc. (Clean Harbors) and referring to source testing to be conducted at their facility in Corunna, Ontario.

Testing is a requirement under amended Environmental Compliance Approval No. 8295-CGGLZ3 issued September 1, 2023.

The test plan for the 2024 sampling program will follow the format used for the 2023 program approved by the source testing group on October 11, 2023.

The testing program in 2023 was conducted prior to the Leachate Pretreatment System being commissioned. For the 2024 testing, the Leachate Pretreatment System is operational, and this will be the first source test after commissioning.

The use of the 2023 testing plan is approved for the 2024 source testing program.

We noted the testing schedule for the week of March 4, 2024. If changes in the sampling schedule occur, please notify both the Sarnia District Office and the Source Testing Group.

Just a reminder that the source testing report is required to be submitted only in electronic format to the District Office and the Source Testing Group.

If you have any questions with regards to this assessment, I can be reached by phone at 437-995-2835 or by email at sourcetesting@ontario.ca

Sincerely,

Caitlyn Ruddy
Source Assessment Specialist
Technology Standards Section

cc: M. Costello- Clean Harbors (Costello.mackenzie@cleanharbors.com)
E. Carabott- Clean Harbors (erica.carabott@cleanharbors.com)
E. Wearing- Sarnia District Office (esther.wearing@ontario.ca)
J. McKerrall – MECP TASDB TSS (jeffrey.mckerrall@ontario.ca)
B. Fullerton- TSS (bill.fullerton@ontario.ca)

File AQ-02 (Clean Harbors Canada Inc. - Corunna)

Doc.Mgmt # 5AH020019

APPENDIX 15

Equipment Calibration Data
(14 pages)

ORTECH

Dry Gas Meter Calibration Using Calibrated Critical Orifice

Meter Console Information	
Meter Number	Team 1
Meter MII Number	COE 20094
Orifice Set ID	COE20999
Barometer ID	COE 20028

Calibration Conditions		
Barometric Pressure	29.65	in Hg
Theoretical Critical Vacuum	14.0	in Hg
System Leak Check	<0.001 in 15"Hg	
Calibration Date	September 11, 2023	
Calibration Technician	Brayden Pacheco	
Reviewed and Accepted By		

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

Calibration Data										
Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice DH	Volume Initial	Volume Final	Avg. DGM Temp Initial	Avg. DGM Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Q)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F			°F	°F	in Hg
10.0	0.28	0.040	3.225	73.0	73.0	UR-40	0.2352	74.3	74.3	22.5
13.0	0.58	3.225	9.060	73.0	73.5	UR-48	0.3308	74.3	74.3	21.0
11.0	1.10	9.060	15.810	73.5	74.0	UR-55	0.4520	74.3	74.3	19.5
10.0	1.90	15.810	23.780	74.0	74.0	UR-63	0.5874	74.3	74.3	17.5
10.0	3.70	23.780	34.670	74.5	75.0	UR-73	0.8107	74.3	74.3	14.5

Results								
Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	DH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(DY)	($Q_{m(std)(corr)}$)	(DH@)	(DDH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
3.129	0.313	3.017	0.302	0.964	0.001	0.302	1.730	-0.086
5.734	0.441	5.516	0.424	0.962	-0.001	0.424	1.812	-0.004
6.635	0.603	6.378	0.580	0.961	-0.002	0.580	1.841	0.024
7.846	0.785	7.535	0.753	0.960	-0.003	0.753	1.883	0.066
10.753	1.075	10.399	1.040	0.967	0.004	1.040	1.925	0.108
			DGMCF	0.963			1.816	DH@ Average

Individual values of DGM calibration factor (Y) must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value (Y) must be 1.00 ± 0.05,
otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

ORTECH

Trendicator Calibration

Calibration Procedure	03 - J005
Trendicator Type	Omega DP118
MII	COE 20094
Date	September 11, 2023
Calibrated By	Brayden Pacheco
Reviewed and Accepted By	

Fluke Calibrator Output (COE 20024) (°F)	Tredicator Display Value		Percent Difference
	Before Adjustment (°F)	After Adjustment (°F)	(%)
32	32	NA	0.0
70	69		1.4
100	99		1.0
200	201		-0.5
250	252		-0.8
300	301		-0.3
400	400		0.0
500	499		0.2
600	600		0.0
700	700		0.0
800	799		0.1
900	900		0.0
1000	1001		-0.1
1100	1101		-0.1
1200	1200		0.0
1250	1251		-0.1

$$\% \text{ Difference} = \frac{\text{(calibrator - after adjustment reading)}}{\text{calibrator}} \times 100$$

Acceptance Criteria:

'Trendicator display must read within ± 1.5%, and ± 3 degrees F of the standard value at each output. Otherwise, the Trendicator must be repaired and/or adjusted as necessary, and recalibrated prior to use.

(Ontario Source Testing Code, June 2010, Part C: Method ON-2, 7.5 Appendix 2E)

ORTECH

Manometer Calibration Data

Date	September 11, 2023	Calibrated By	Brayden Pacheco
Manometer Number	Team 1	Signature	Brayden Pacheco
Manometer MII Number	COE 20094	Reviewed/Accepted By	
Calibrated Against	Dual 3		
MII Number	COE 20008		
Calibration Procedure	03 - J010		

Front Leg

Manometer Scale "H_2O	Manometer Reading "H_2O		Reference Manometer Reading "H_2O	Percent Difference %
	Before Adjustment	After Adjustment		
	0.160	N/A	0.161	0.6
0-1.0	0.510		0.508	-0.4
	0.970		0.965	-0.5
	1.50		1.54	2.6
1.0-10.0	5.00		4.97	-0.6
	9.10		8.94	-1.8

$$\text{Percent Difference} = \frac{(\text{Ref. Manometer} - \text{Instrument Reading})}{\text{Ref. Manometer}} \times 100$$

Acceptance Criteria:
The manometer being calibrated must be within ± 5.0% of the Standard value at each reading. Otherwise, the manometer must be repaired and/or adjusted as necessary and recalibrated prior to use. Manometers must be capable of measuring velocity pressure to within 0.005 "H_2O on the 0 to 1 inch scale, and 0.05 "H_2O on the 1 to 10 inch scales.
(Environment Canada Reference Method 1/RM/8, Section 2)

ORTECH

Dry Gas Meter Calibration Using Calibrated Critical Orifice

Meter Console Information	
Meter Number	Team # 3
Meter MII Number	COE 20093
Orifice Set ID	COE20999
Barometer ID	COE 20028

Calibration Conditions		
Barometric Pressure	29.65	in Hg
Theoretical Critical Vacuum	14.0	in Hg
System Leak Check	<0.001@ 17"Hg	
Calibration Date	September 11, 2023	
Calibration Technician	Brayden Pacheco	
Reviewed and Accepted By		

Factors/Conversions		
Std Temp	528	^oR
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

Calibration Data										
Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice DH	Volume Initial	Volume Final	Avg. DGM Temp Initial	Avg. DGM Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Q)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	^oF	^oF			^oF	^oF	in Hg
10.0	0.32	80.790	83.880	74.0	75.0	UR-40	0.2352	75.2	75.2	22.0
10.0	0.64	83.880	88.230	75.0	76.0	UR-48	0.3308	75.2	75.2	20.5
10.0	1.20	88.230	94.220	76.0	76.0	UR-55	0.4520	75.2	75.2	19.5
10.0	2.10	94.220	102.005	76.0	77.0	UR-63	0.5874	75.2	75.2	17.0
10.0	3.80	2.005	12.660	77.0	79.0	UR-73	0.8107	75.2	75.2	14.0

Results								
Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	DH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
$(V_{m(std)})$	$(Q_{m(std)})$	$(Vcr_{(std)})$	$(Q_{cr(std)})$	(Y)	(DY)	$(Q_{m(std)(corr)})$	(DH@)	(DDH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
3.027	0.303	3.014	0.301	0.996	0.004	0.301	1.981	-0.039
4.257	0.426	4.240	0.424	0.996	0.004	0.424	2.003	-0.017
5.865	0.586	5.793	0.579	0.988	-0.004	0.579	2.011	-0.008
7.632	0.763	7.528	0.753	0.986	-0.005	0.753	2.084	0.064
10.460	1.046	10.390	1.039	0.993	0.001	1.039	1.980	-0.040
			DGMCF	0.992			2.020	DH@ Average

Individual values of DGM calibration factor (Y) must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value (Y) must be 1.00 ± 0.05,
otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

ORTECH

Trendicator Calibration

Calibration Procedure	03 - J005
Trendicator Type	Omega DP116
MII	A12007
Date	September 11, 2023
Calibrated By	Brayden Pacheco
Reviewed and Accepted By	

Fluke Calibrator Output (COE 20024) (°F)	Tredicator Display Value		Percent Difference
	Before Adjustment (°F)	After Adjustment (°F)	(%)
32	31	32	0.0
70		69	1.4
100		99	1.0
200		200	0.0
250		251	-0.4
300		301	-0.3
400		399	0.3
500		498	0.4
600		599	0.2
700		701	-0.1
800		800	0.0
900		900	0.0
1000		1001	-0.1
1100		1101	-0.1
1200		1200	0.0
1250		1251	-0.1

$$\% \text{ Difference} = \frac{(\text{calibrator - after adjustment reading})}{\text{calibrator}} \times 100$$

Acceptance Criteria:

'Trendicator display must read within ± 1.5%, and ± 3 degrees F of the standard value at each output. Otherwise, the Trendicator must be repaired and/or adjusted as necessary, and recalibrated prior to use.

(Ontario Source Testing Code, June 2010, Part C: Method ON-2, 7.5 Appendix 2E)

ORTECH Environmental
Manometer Calibration Data

Date	9-11-2023	Calibrated By	Brayden Pacheco
Manometer Number	Team 3	Signature	Brayden Pacheco
Manometer MII Numbe	COE 20093	Reviewed/Accepted By	
Calibrated Against	Omega HHP		
MII Number	B02679		
Calibration Procedure	03 - J010		

Back Leg

Manometer Scale "H_20	Manometer Reading "H_2O Before Adjustment	Manometer Reading "H_2O After Adjustment	Reference Manometer Reading "H_2O	Percent Difference %
	0.260	NA	0.258	-0.8
0-1.0	0.560		0.561	0.2
	0.950		0.950	0.0
	1.60		1.57	-1.9
1.0-10.0	5.10		5.08	-0.4
	9.50		9.45	-0.5

$$\text{Percent Difference} = \frac{(\text{Ref. Manometer - Instrument Reading})}{\text{Ref. Manometer}} \times 100$$

Acceptance Criteria:
The manometer being calibrated must be within ± 5.0% of the Standard value at each reading. Otherwise, the manometer must be repaired and/or adjusted as necessary and recalibrated prior to use. Manometers must be capable of measuring velocity pressure to within 0.005 "H_2O on the 0 to 1 inch scale, and 0.05 "H_2O on the 1 to 10 inch scales.
(Environment Canada Reference Method 1/RM/8, Section 2)

ORTECH

Dry Gas Meter Calibration Using Calibrated Critical Orifice

Meter Console Information	
Meter Number	Team 4
Meter MII Number	COE 20090
Orifice Set ID	COE20999
Barometer ID	COE 20028

Calibration Conditions		
Barometric Pressure	29.47	in Hg
Theoretical Critical Vacuum	13.9	in Hg
System Leak Check	<0.01 in 15"Hg	
Calibration Date	October 12/2023	
Calibration Technician	Brayden Pacheco	
Reviewed and Accepted By		

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

Calibration Data										
Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice DH	Volume Initial	Volume Final	Avg. DGM Temp Initial	Avg. DGM Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Q)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F			°F	°F	in Hg
10.0	0.27	13.820	16.780	71.0	71.0	UR-40	0.2352	70.7	70.7	25.0
10.0	0.54	16.780	20.950	71.0	71.0	UR-48	0.3308	70.7	70.7	23.0
10.0	1.00	90.580	96.265	70.0	70.0	UR-55	0.4520	69.8	70.7	23.0
10.0	1.70	96.265	103.650	70.0	71.0	UR-63	0.5874	70.7	70.7	21.0
10.0	3.20	3.650	13.820	71.0	71.0	UR-73	0.8107	70.7	70.7	18.0

Results								
Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	DH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(DY)	($Q_{m(std)(corr)}$)	(DH@)	(DDH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
2.901	0.290	3.009	0.301	1.037	0.003	0.301	1.678	-0.009
4.090	0.409	4.232	0.423	1.035	0.000	0.423	1.696	0.009
5.592	0.559	5.785	0.578	1.034	0.000	0.578	1.681	-0.006
7.270	0.727	7.514	0.751	1.034	-0.001	0.751	1.694	0.006
10.040	1.004	10.371	1.037	1.033	-0.002	1.037	1.674	-0.014
			DGMCF	1.035			1.687	DH@ Average

Individual values of DGM calibration factor (Y) must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value (Y) must be 1.00 ± 0.05,
otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

ORTECH

Trendicator Calibration

Calibration Procedure	03 - J005
Trendicator Type	Omega DP118
MII	COE 20094
Date	October 12, 2023
Calibrated By	Brayden Pachedo
Reviewed and Accepted By	JG

Fluke Calibrator Output (COE 20024) (°F)	Tredicator Display Value		Percent Difference
	Before Adjustment (°F)	After Adjustment (°F)	(%)
32	32	NA	0.0
70	69		1.4
100	99		1.0
200	201		-0.5
250	251		-0.4
300	301		-0.3
400	399		0.3
500	498		0.4
600	599		0.2
700	700		0.0
800	800		0.0
900	900		0.0
1000	1000		0.0
1100	1100		0.0
1200	1200		0.0
1250	1249		0.1

$$\% \text{ Difference} = \frac{(\text{calibrator - after adjustment reading})}{\text{calibrator}} \times 100$$

Acceptance Criteria:

'Trendicator display must read within ± 1.5%, and ± 3 degrees F of the standard value at each output. Otherwise, the Trendicator must be repaired and/or adjusted as necessary, and recalibrated prior to use.
(Ontario Source Testing Code, June 2010, Part C: Method ON-2, 7.5 Appendix 2E)

ORTECH

Manometer Calibration Data

Date	October 12, 2023	Calibrated By	Brayden Pacheco
Manometer Number	Team 4	Signature	Brayden Pacheco
Manometer MII Number	COE 20094	Reviewed/Accepted By	
Calibrated Against	Dual 3		
MII Number	COE 20008		
Calibration Procedure	03 - J010		

Front Leg

Manometer Scale "H_2O	Manometer Reading "H_2O		Reference Manometer Reading "H_2O	Percent Difference %
	Before Adjustment	After Adjustment		
	0.350	NA	0.352	0.6
0-1.0	0.650		0.651	0.2
	0.950		0.948	-0.2
	3.50		3.56	1.7
1.0-10.0	6.50		6.52	0.3
	9.50		9.51	0.1

$$\text{Percent Difference} = \frac{(\text{Ref. Manometer} - \text{Instrument Reading})}{\text{Ref. Manometer}} \times 100$$

Acceptance Criteria:
The manometer being calibrated must be within ± 5.0% of the Standard value at each reading. Otherwise, the manometer must be repaired and/or adjusted as necessary and recalibrated prior to use. Manometers must be capable of measuring velocity pressure to within 0.005 "H_2O on the 0 to 1 inch scale, and 0.05 "H_2O on the 1 to 10 inch scales.
(Environment Canada Reference Method 1/RM/8, Section 2)

ORTECH Consulting Inc.
Pitot Tube Calibration

Date	January 25, 2024
Probe/Pitot ID	15D
MII Number	B03778
Calibrated Against	B02911
Cp standard	0.99777
Calibration Procedure	03-SOP-007

Calibration Facility	ORTECH Consulting Inc.
Calibrated By	Dan Turton
Signature	
Reviewed/Accepted By	

$$Cp = Cpstd * \sqrt{\frac{Pstd}{Ps}}$$

Configuration	Wind Tunnel Velocity m/s	Velocity Head Standard Pitot in. H_2O Pstd	Velocity Head S-Type Pitot in. H_2O Ps	S-Type Pitot Coefficient Cp_s	Deviation From The Mean
With Nozzle	7.88	0.150	0.210	0.845	0.0021
(0.25")	9.75	0.230	0.325	0.841	0.0018
	11.32	0.310	0.435	0.844	0.0012
	13.79	0.460	0.650	0.841	0.0018
	16.27	0.640	0.900	0.843	0.0003
			Mean	0.843	0.0014

Without Nozzle	7.88	0.150	0.210	0.845	0.0023
	9.75	0.230	0.320	0.847	0.0049
	11.14	0.300	0.420	0.845	0.0023
	13.49	0.440	0.630	0.835	0.0072
	16.39	0.650	0.920	0.840	0.0023
			Mean	0.842	0.0038

Note: Pitots must always be used in the orientation that they are calibrated in (marked F for front and B for back).

Acceptance Criteria:
The Cp of Standard Pitots must be in the range of 0.99 ±0.01.
For Stausscheibe (S-Type) Pitots refer to the measurement criteria as specified in Method 2 of the Ontario Source Testing Code. If the pitot meets these measurement requirements it is assigned a Cp of 0.84. Otherwise, calculate the absolute differences between the average pitot tube coefficient and the coefficient obtained for each of the wind tunnel settings. The average of these differences must not exceed 0.01. Otherwise, the calibration must be repeated. (Environment Canada Reference Method EPS 1/RM/8, Section 6).

ORTECH Consulting Inc.
Pitot Tube Calibration

Date	January 25, 2024
Probe/Pitot ID	15E
MII Number	COE 20113
Calibrated Against	B02911
Cp standard	0.99777
Calibration Procedure	03-SOP-007

Calibration Facility	ORTECH Consulting Inc.
Calibrated By	Dan Turton
Signature	
Reviewed/Accepted By	

$$Cp = Cpstd \; * \; \sqrt{\frac{Pstd}{Ps}}$$

Configuration	Wind Tunnel Velocity m/s	Velocity Head Standard Pitot in. H_2O Pstd	Velocity Head S-Type Pitot in. H_2O Ps	S-Type Pitot Coefficient Cp_s	Deviation From The Mean
With Nozzle	7.88	0.150	0.210	0.845	0.0007
(0.25")	9.86	0.235	0.330	0.843	0.0006
	11.50	0.320	0.450	0.843	0.0012
	13.79	0.460	0.640	0.847	0.0033
	16.52	0.660	0.930	0.842	0.0021
			Mean	0.844	0.0016

Without Nozzle	8.01	0.155	0.220	0.839	0.0041
	9.75	0.230	0.320	0.847	0.0043
	11.14	0.300	0.420	0.845	0.0016
	13.94	0.470	0.660	0.843	0.0004
	16.14	0.630	0.890	0.841	0.0022
			Mean	0.843	0.0025

Note: Pitots must always be used in the orientation that they are calibrated in (marked F for front and B for back).

Acceptance Criteria:
The Cp of Standard Pitots must be in the range of 0.99 ±0.01.
For Stausscheibe (S-Type) Pitots refer to the measurement criteria as specified in Method 2 of the Ontario Source Testing Code. If the pitot meets these measurement requirements it is assigned a Cp of 0.84. Otherwise, calculate the absolute differences between the average pitot tube coefficient and the coefficient obtained for each of the wind tunnel settings. The average of these differences must not exceed 0.01. Otherwise, the calibration must be repeated.
(Environment Canada Reference Method EPS 1/RM/8, Section 6).

ORTECH Consulting Inc.
Pitot Tube Calibration

Date	January 25, 2024
Probe/Pitot ID	SP2
MII Number	B04009
Calibrated Against	B02911
Cp standard	0.99777
Calibration Procedure	**03-SOP-007**

Calibration Facility	ORTECH Consulting Inc.
Calibrated By	Dan Horton
Signature	
Reviewed/Accepted By	

$$Cp = Cpstd * \sqrt{\frac{Pstd}{Ps}}$$

Configuration	Wind Tunnel Velocity m/s	Velocity Head Standard Pitot in. H_2O **Pstd**	Velocity Head S-Type Pitot in. H_2O **Ps**	S-Type Pitot Coefficient **Cp_s**	Deviation From The Mean
With Nozzle	7.88	0.150	0.210	0.845	0.0025
(0.25")	9.96	0.240	0.330	0.852	0.0051
	11.32	0.310	0.430	0.849	0.0014
	13.64	0.450	0.630	0.845	0.0025
	16.14	0.630	0.880	0.846	0.0015
			Mean	0.847	0.0026

Without Nozzle	7.88	0.150	0.210	0.845	0.0071
	9.75	0.230	0.330	0.834	0.0032
	11.68	0.330	0.470	0.837	0.0001
	13.49	0.440	0.630	0.835	0.0023
	16.14	0.630	0.900	0.836	0.0014
			Mean	0.838	0.0028

Note: Pitots must always be used in the orientation that they are calibrated in (marked F for front and B for back).

Acceptance Criteria:
The Cp of Standard Pitots must be in the range of 0.99 ±0.01.
For Stausscheibe (S-Type) Pitots refer to the measurement criteria as specified in Method 2 of the MOE Source Testing Code. If the pitot meets these measurement requirements it is assigned a Cp of 0.84. Otherwise, calculate the absolute differences between the average pitot tube coefficient and the coefficient obtained for each of the wind tunnel settings. The average of these differences must not exceed 0.01. Otherwise, the calibration must be repeated. (Environment Canada Reference Method EPS 1/RM/8, Section 6).

ORTECH

Dry Gas Meter Calibration Data

Calibration Procedure	03-J004
Meter Number	Vost 3
Date	Feb. 29, 2024
Barometric Pressure	30.03
System Leak Check	NDL @ " Hg 16

MII NUMBERS	
DGM	A12010
Gasometer	A01463
Barometer	COE 20028

Calibrated By	Tyler Curtis
Reviewed and Accepted By	

ft^3= cm* 1.332 litres per cm/28.3168 litres per ft^3

$$DGMCF = \frac{V_{std}\ ft^3}{V_{dgm}\ ft^3} \quad \frac{T_{dgm}\ ^\circ F+460}{T_{std}\ ^\circ F+460} \quad \frac{P_{bar}\ (in.\ Hg)}{(P_{bar}\ in.\ Hg + DGMPressure/13.6)}$$

Gasometer Reading cm			Gasometer Volume	Gasometer Temperature	DGM Reading L		DGM Volume	DGM Average Temperature	DGM Pressure	DGM Outlet	DGM Calibration	Time	Flow Rate
Initial	Final	cm	ft^3	°C	Initial	Final	ft^3	°C	in. H_2O	°C	Factor	min.	lpm
83.60	61.00	22.60	1.063	20.0	187.23	217.95	1.085	24.0	2.0	18.0	0.988	15	2.0
60.90	39.60	21.30	1.002	20.0	217.95	246.71	1.016	26.0	2.0	24.0	1.002	15	1.9
83.60	61.80	21.80	1.025	20.0	246.71	276.49	1.052	27.0	2.0	25.0	0.993	15	2.0
		0.00	0.000				0.000				#DIV/0!		#DIV/0!
		0.00	0.000				0.000				#DIV/0!		#DIV/0!
		0.00	0.000				0.000				#DIV/0!		#DIV/0!
83.70	75.80	7.90	0.372	20.0	305.56	316.55	0.388	26.0	0.5	24.0	0.976	20	0.5
75.80	67.70	8.10	0.381	20.0	316.550	327.750	0.396	27.0	0.5	25.0	0.985	20.5	0.5
67.60	59.50	8.10	0.381	20.0	327.750	338.870	0.393	28.0	0.5	27.0	0.995	20	0.6

Acceptance Criteria:
Individual values of DGM calibration factor must be within ± 1.5% of the average value.
If not the calibration must be repeated. Also, the DGMCF average value must be 1.00 ± 0.05, otherwise the meter must be repaired and/or adjusted as necessary and recalibrated prior to use.
(Environment Canada Reference Method EPS 1/RM/8, Section 6)

DGMCF AVERAGE

2Lpm	0.995
1Lpm	#DIV/0!
0.5Lpm	0.985

ORTECH
Trendicator Calibration

Calibration Procedure	**03-J005**
Trendicator Type	**Nutech**
MII	**A12010**
Date	**Feb. 29, 2024**
Calibrated By	**Tyler Curtis**
Reviewed and Accepted By	

Fluke Calibrator Output (COE 20024) (°C)	**Tredicator Display Value**		**Percent Difference**
	Before Adjustment (°C)	**After Adjustment (°C)**	**(%)**
0	0	NA	0.0
20	20		0.0
50	50		0.0
100	100		0.0
150	150		0.0
200	200		0.0
300	300		0.0
400	400		0.0
500	500		0.0
600	600		0.0

$$\% \text{ Difference} = \frac{(\text{micromite - after adjustment reading})}{\text{micromite}} \times 100$$

Acceptance Criteria:
Trendicator display must read within ± 1.5% of the micromite value at each output. Otherwise, the Trendicator must be repaired and/or adjusted as necessary, and recalibrated prior to use. (MOE Source Testing Code, Version #2, Method 5)

APPENDIX 16

ORTECH CEM Calibration Data
(12 pages)

Clean Harbors
Mobile Source Monitoring Laboratory # 1
Daily Analyzer Calibration Evaluation

March 5, 2024
Test 1 Final Calculations

		O2	CO2	SO2	CO	NO	NOx
MII Number/Serial Number		COE 20116	COE 20116	COE 20099 Teledyne	COE 20116 Siemens	COE 20061	COE 20061
Model		Siemens Ultramat 23	Siemens Ultramat 23	API-T100H	Ultramat 23	Teledyne 200 EH	Teledyne 200 EH
Range		25	25	250	1000	500	500
Actual Cylinder Value	High	23.13	22.85	227.5	973.2	453.2	453.2
	Mid.	12.56	12.04	91.32	441.7	230.4	230.4
	Zero	0.00	0.00	0	0	0	0

Analyzer Initial Calibration	Zero	0.00	0.00	0	0.0	0.4	0.3
	Mid	12.14	11.92	89.6	427.5	232.3	232.9
	High	23.17	22.95	227.6	973.8	453.3	457.6
System Initial Calibration	Zero	0.31	0.00	0	0.0	0.8	0.8
	Upscale	12.27	12.02	95	438.7	220.4	220.8
System Final Calibration	Zero	0.11	0.11	1	0.0	0.8	0.6
	Upscale	12.51	11.95	91.1	441.6	226.7	230.8

Calibration Error Results

Analyzer Calibration Error = (Measured Concentration of Cal Gas in Direct Mode - Manufacturer Certified Cal Gas Concentration)/Analyzer Range)*100

			O2	CO2	SO2	CO	NO	NOx
Analyzer			O2	CO2	SO2	CO	NO	NOx
Analyzer Span Range			25.00	25.00	250	1000	500	500
Calibration Error	Zero	%	0.00	0.00	0.00	0.00	0.08	0.06
	Mid	%	1.68	0.48	0.69	1.42	0.38	0.50
	High	%	0.16	0.40	0.04	0.06	0.02	0.88
Acceptable Limits	**of Span**		**+-2%**	**+-2%**	**+-2%**	**+-2%**	**+-2%**	**+-2%**
Error Results			**PASS**	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**

System Drift

Drift Calculation = | System Bias $_{final}$ - System Bias $_{initial}$ |

	Analyzer	O2	CO2	SO2	CO	NO	NOx
	Span	**25.00**	**25.00**	**250**	**1000**	**500**	**500**
Initial System Bias	Zero	1.24	0.00	0.00	0.00	0.08	0.10
	Upscale	0.52	0.40	2.16	1.1	-2.4	-2.4
Final System Bias	Zero	0.11	0.11	1.00	0.0	0.7	0.5
	Upscale	1.48	0.12	0.60	1.4	-1.1	-0.4
System Zero Drift	%	1.13	0.11	1.00	0.00	0.64	0.44
System Cal Drift	%	0.96	0.28	1.56	0.29	1.26	2.00
Acceptable Limits	**of Span**	**+ - 3 %**	**+ - 3 %**	**+ - 3 %**	**+ - 3 %**	**+ - 3 %**	**+ - 3 %**
Drift Result		**PASS**	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**

System Calibration Bias

System Bias Calculation = ((Measured Concentration of Cal Gas in System Calibration Mode - Measured Concentration of Cal Gas in Direct Mode)/Analyzer Range))* 100

Analyzer			O2	CO2	SO2	CO	NO	Nox
Analyzer Full Scale Span			**25**	**25**	**250**	**1000**	**500**	**500**
Analyzer Initial	Zero		0.00	0.00	0.00	0.0	0.4	0.3
	Upscale		12.14	11.92	89.60	427.5	232.3	232.9
System Initial	Zero		0.31	0.00	0.00	0.0	0.8	0.8
	Upscale		12.27	12.02	95.00	438.7	220.4	220.8
System Final	Zero		0.11	0.11	1.00	0.0	0.8	0.6
	Upscale		12.51	11.95	91.10	441.6	226.7	230.8
Initial System Bias	Zero	%	1.24	0.00	0.00	0.00	0.08	0.10
	Upscale	%	0.52	0.40	2.16	1.12	-2.38	-2.42
Final System Bias	Zero	%	0.11	0.11	1.00	0.00	0.72	0.54
	Upscale	%	1.48	0.12	0.60	1.41	-1.12	-0.42
Acceptable Limits	**of Span**		**+ - 5 %**	**+ - 5 %**	**+ - 5 %**	**+ - 5 %**	**+ - 5 %**	**+ - 5 %**
Bias Results			**PASS**	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**

Total Hydrocarbon Reference Method 25A Calibration Data Sheet
Method 25A:SOP Number 95-T62-SP001

Project Number:	0	Date:	March 5, 2024
Company:	Clean Harbors	Operator:	T, Timar
Location:	Sarnia, ON	Analyzer ID	VIG 20
Test Location:	Incinerator Stack	Test 1	

THC Full Scale Setting	**100**
Zero Gas (ppm)	<0.1 ppm
Low Gas Value (ppm)	20-35 % full scale setting
Mid Gas Value (ppm)	45-55 % full scale setting
High Gas Value (ppm)	80-90 % full scale setting

Perform analyzer calibration as per manufacturers instructions.
Calculate the linearity factor "C" based on the zero and high gas values. Based on the calculated linearity, predict the analyzer response for low and mid values (D3 and D4). Calculate calibration error with the low and mid (B3 and B4) gasses.

	Cal.Gas Value (A)	Initial Analyzer Response (B)	Linearity (B2-B1)/(A2-A1)	Predicted Response (A X C)	Calibration Error % ((B)-(D)/AX100
Zero	0 A1	0 B1	0.995 C		
High	91.5 A2	91 B2			
Mid	51.9 A4	50.87 B4		51.6 D4	-1.4 E4
Low	30 A3	29.8 B3		29.8 D3	-0.1 E3

Criteria +/-5%

Note: If the calibration Error (E3 and E4) are greater than 5%, repeat the procedure until values are acceptable.

Perform test. At the completion of the test or hourly; Calculate the calibration drift as a percent of full scale value.
Introduce the zero and mid level gases at the probe and record data as the system final response.

	System Initial Response (F)	System Final Response (G)	Calibration Drift (G-F)/span*100
Zero	0	0	0
Mid	50.87	49.9	1.0

Criteria 3%

Calculate systen response time by introducing zero gas to the probe, record time to reach 95% of calibration gas value.
Repeat with upscale gas. Perform three runs and calculate average of the runs.

	Zero Response Time (seconds)		Upscale Response Time (seconds)
Run 1	30		43
Run 2	30		45
Run 3	30		41
Average	**30**		**43**

Clean Harbors
Mobile Source Monitoring Laboratory # 1
Daily Analyzer Calibration Evaluation

March 6, 2024
Test 2 Final Calculations

		O2	CO2	SO2	CO	NO	NOx
MII Number/Serial Number		COE 20116	COE 20116	COE 20099 Teledyne	COE 20116 Siemens	COE 20061	COE 20061
Model		Siemens Ultramat 23	Siemens Ultramat 23	API-T100H	Ultramat 23	Teledyne 200 EH	Teledyne 200 EH
Range		25	25	250	1000	500	500
Actual Cylinder Value	High	23.13	22.85	227.5	973.2	453.2	453.2
	Mid.	12.56	12.04	91.32	441.7	230.4	230.4
	Zero	0.00	0.00	0	0	0	0

Analyzer Initial Calibration	Zero	0.00	0.00	0.3	0.0	0.0	0.0
	Mid	12.75	11.92	89.8	441.5	230.3	231.6
	High	23.20	22.97	227.7	972.8	454.0	454.3
System Initial Calibration	Zero	0.33	0.00	0.5	0.0	0.0	0.9
	Upscale	12.53	11.67	84.6	431.0	224.8	225.6
System Final Calibration	Zero	0.13	0.17	0.94	0.0	0.8	1.0
	Upscale	12.37	11.67	89.3	424.9	218.7	220.4

Calibration Error Results

Analyzer Calibration Error = (Measured Concentration of Cal Gas in Direct Mode - Manufacturer Certified Cal Gas Concentration)/Analyzer Range)*100

Analyzer			O2	CO2	SO2	CO	NO	NOx
Analyzer Span Range			25.00	25.00	250	1000	500	500
Calibration Error	Zero	%	0.00	0.00	0.12	0.00	0.00	0.00
	Mid	%	0.76	0.48	0.61	0.02	0.02	0.24
	High	%	0.28	0.48	0.08	0.04	0.16	0.22
Acceptable Limits	**of Span**		**+-2%**	**+-2%**	**+-2%**	**+-2%**	**+-2%**	**+-2%**

Error Results	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**

System Drift

Drift Calculation = | System Bias $_{final}$ - System Bias $_{initial}$ |

	Analyzer	O2	CO2	SO2	CO	NO	NOx
	Span	**25.00**	**25.00**	**250**	**1000**	**500**	**500**
Initial System Bias	Zero	1.32	0.00	0.08	0.00	0.00	0.18
	Upscale	-0.88	-1.00	-2.08	-1.1	-1.1	-1.2
Final System Bias	Zero	0.13	0.17	0.82	0.0	0.8	1.0
	Upscale	-1.52	-1.00	-0.20	-1.7	-2.3	-2.2

System Zero Drift	%	1.19	0.17	0.74	0.00	0.80	0.82
System Cal Drift	%	0.64	0.00	1.88	0.61	1.22	1.04
Acceptable Limits	**of Span**	**+ - 3 %**	**+ - 3 %**	**+ - 3 %**	**+ - 3 %**	**+ - 3 %**	**+ - 3 %**

Drift Result	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**

System Calibration Bias

System Bias Calculation = ((Measured Concentration of Cal Gas in System Calibration Mode - Measured Concentration of Cal Gas in Direct Mode)/Analyzer Range))* 100

Analyzer		O2	CO2	SO2	CO	NO	Nox
Analyzer Full Scale Span		**25**	**25**	**250**	**1000**	**500**	**500**
Analyzer Initial	Zero	0.00	0.00	0.30	0.0	0.0	0.0
	Upscale	12.75	11.92	89.80	441.5	230.3	231.6
System Initial	Zero	0.33	0.00	0.50	0.0	0.0	0.9
	Upscale	12.53	11.67	84.60	431.0	224.8	225.6
System Final	Zero	0.13	0.17	0.94	0.0	0.8	1.0
	Upscale	12.37	11.67	89.30	424.9	218.7	220.4

Initial System Bias	Zero	%	1.32	0.00	0.08	0.00	0.00	0.18
	Upscale	%	-0.88	-1.00	-2.08	-1.05	-1.10	-1.20
Final System Bias	Zero	%	0.13	0.17	0.82	0.00	0.80	1.00
	Upscale	%	-1.52	-1.00	-0.20	-1.66	-2.32	-2.24
Acceptable Limits	**of Span**		**+ - 5 %**	**+ - 5 %**	**+ - 5 %**	**+ - 5 %**	**+ - 5 %**	**+ - 5 %**

Bias Results	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**	**PASS**

Total Hydrocarbon Reference Method 25A Calibration Data Sheet
Method 25A:SOP Number 95-T62-SP001

Project Number:	0	Date:	March 6, 2024
Company:	Clean Harbors	Operator:	T, Timar
Location:	Sarnia, ON	Analyzer ID	VIG 20
Test Location:	Incinerator Stack	Test 2	

THC Full Scale Setting	**100**
Zero Gas (ppm)	<0.1 ppm
Low Gas Value (ppm)	20-35 % full scale setting
Mid Gas Value (ppm)	45-55 % full scale setting
High Gas Value (ppm)	80-90 % full scale setting

Perform analyzer calibration as per manufacturers instructions.
Calculate the linearity factor "C" based on the zero and high gas values. Based on the calculated linearity, predict the analyzer response for low and mid values (D3 and D4). Calculate calibration error with the low and mid (B3 and B4) gasses.

	Cal.Gas Value (A)	Initial Analyzer Response (B)	Linearity (B2-B1)/(A2-A1)	Predicted Response (A X C)	Calibration Error % ((B)-(D)/AX100
Zero	0 A1	0 B1	0.990 C		
High	91.5 A2	90.6 B2			
Mid	51.9 A4	51.7 B4		51.4 D4	0.6 E4
Low	30 A3	29.8 B3		29.7 D3	0.3 E3

Criteria +/-5%

Note: If the calibration Error (E3 and E4) are greater than 5%, repeat the procedure until values are acceptable.

Perform test. At the completion of the test or hourly; Calculate the calibration drift as a percent of full scale value.
Introduce the zero and mid level gases at the probe and record data as the system final response.

	System Initial Response (F)	System Final Response (G)	Calibration Drift (G-F)/span*100
Zero	0	0	0
Mid	51.7	49.1	2.6

Criteria 3%

Calculate systen response time by introducing zero gas to the probe, record time to reach 95% of calibration gas value.
Repeat with upscale gas. Perform three runs and calculate average of the runs.

	Zero Response Time (seconds)		Upscale Response Time (seconds)
Run 1	30		43
Run 2	30		45
Run 3	30		41
Average	**30**		**43**

Clean Harbors
Mobile Source Monitoring Laboratory # 1
Daily Analyzer Calibration Evaluation

March 7, 2024
Test 3 Final Calculations

		O2	CO2	SO2	CO	NO	NOx
MII Number/Serial Number Model		COE 20116 Siemens Ultramat 23	COE 20116 Siemens Ultramat 23	COE 20099 Teledyne API-T100H	COE 20116 Siemens Ultramat 23	COE 20061 Teledyne 200 EH	COE 20061 Teledyne 200 EH
Range		25	25	250	1000	500	500
Actual Cylinder Value	High	23.13	22.85	227.5	973.2	453.2	453.2
	Mid.	12.56	12.04	91.32	441.7	230.4	230.4
	Zero	0.00	0.00	0	0	0	0

Analyzer Initial Calibration	Zero	0.00	0.00	0	0.0	0.0	0.0
	Mid	12.48	11.99	90.8	441.2	230.1	231.1
	High	23.19	22.95	227.8	972.5	452.8	453.9
System Initial Calibration	Zero	0.00	0.00	0	0.0	0.0	0.8
	Upscale	12.49	12.00	85.1	432.0	227.4	228.9
System Final Calibration	Zero	0.11	0.12	0.6	0.0	0.4	0.9
	Upscale	12.58	11.93	86.4	426.0	229.1	230.8

Calibration Error Results

Analyzer Calibration Error = (Measured Concentration of Cal Gas in Direct Mode - Manufacturer Certified Cal Gas Concentration)/Analyzer Range)*100

			O2	CO2	SO2	CO	NO	NOx
Analyzer			O2	CO2	SO2	CO	NO	NOx
Analyzer Span Range			25.00	25.00	250	1000	500	500
Calibration Error	Zero	%	0.00	0.00	0.00	0.00	0.00	0.00
	Mid	%	0.32	0.20	0.21	0.05	0.06	0.14
	High	%	0.24	0.40	0.12	0.07	0.08	0.14
Acceptable Limits	of Span		+-2%	+-2%	+-2%	+-2%	+-2%	+-2%

	O2	CO2	SO2	CO	NO	NOx
Error Results	PASS	PASS	PASS	PASS	PASS	PASS

System Drift

Drift Calculation = | System Bias $_{final}$ - System Bias $_{initial}$ |

	Analyzer	O2	CO2	SO2	CO	NO	NOx
	Span	25.00	25.00	250	1000	500	500
Initial System Bias	Zero	0.00	0.00	0.00	0.00	0.00	0.16
	Upscale	0.04	0.04	-2.28	-0.9	-0.5	-0.4
Final System Bias	Zero	0.11	0.12	0.60	0.0	0.4	0.9
	Upscale	0.40	-0.24	-1.76	-1.5	-0.2	-0.1
System Zero Drift	%	0.11	0.12	0.60	0.00	0.40	0.74
System Cal Drift	%	0.36	0.28	0.52	0.60	0.34	0.38
Acceptable Limits	of Span	+ - 3 %	+ - 3 %	+ - 3 %	+ - 3 %	+ - 3 %	+ - 3 %

	O2	CO2	SO2	CO	NO	NOx
Drift Result	PASS	PASS	PASS	PASS	PASS	PASS

System Calibration Bias

System Bias Calculation = ((Measured Concentration of Cal Gas in System Calibration Mode - Measured Concentration of Cal Gas in Direct Mode)/Analyzer Range))* 100

Analyzer			O2	CO2	SO2	CO	NO	Nox
Analyzer Full Scale Span			25	25	250	1000	500	500
Analyzer Initial	Zero		0.00	0.00	0.00	0.0	0.0	0.0
	Upscale		12.48	11.99	90.80	441.2	230.1	231.1
System Initial	Zero		0.00	0.00	0.00	0.0	0.0	0.8
	Upscale		12.49	12.00	85.10	432.0	227.4	228.9
System Final	Zero		0.11	0.12	0.60	0.0	0.4	0.9
	Upscale		12.58	11.93	86.40	426.0	229.1	230.8
Initial System Bias	Zero	%	0.00	0.00	0.00	0.00	0.00	0.16
	Upscale	%	0.04	0.04	-2.28	-0.92	-0.54	-0.44
Final System Bias	Zero	%	0.11	0.12	0.60	0.00	0.40	0.90
	Upscale	%	0.40	-0.24	-1.76	-1.52	-0.20	-0.06
Acceptable Limits	of Span		+ - 5 %	+ - 5 %	+ - 5 %	+ - 5 %	+ - 5 %	+ - 5 %

	O2	CO2	SO2	CO	NO	NOx
Bias Results	PASS	PASS	PASS	PASS	PASS	PASS

Total Hydrocarbon Reference Method 25A Calibration Data Sheet
Method 25A:SOP Number 95-T62-SP001

Project Number:	0	Date:	March 7, 2024
Company:	Clean Harbors	Operator:	T, Timar
Location:	Sarnia, ON	Analyzer ID	VIG 20
Test Location:	Incinerator Stack	Test 3	

THC Full Scale Setting	**100**
Zero Gas (ppm)	<0.1 ppm
Low Gas Value (ppm)	20-35 % full scale setting
Mid Gas Value (ppm)	45-55 % full scale setting
High Gas Value (ppm)	80-90 % full scale setting

Perform analyzer calibration as per manufacturers instructions.
Calculate the linearity factor "C" based on the zero and high gas values. Based on the calculated linearity, predict the analyzer response for low and mid values (D3 and D4). Calculate calibration error with the low and mid (B3 and B4) gasses.

	Cal.Gas Value (A)	Initial Analyzer Response (B)	Linearity (B2-B1)/(A2-A1)	Predicted Response (A X C)	Calibration Error % ((B)-(D)/AX100
Zero	0 A1	0 B1	1.004 C		
High	91.5 A2	91.9 B2			
Mid	51.9 A4	52.3 B4		52.1 D4	0.3 E4
Low	30 A3	30.9 B3		30.1 D3	2.6 E3

Criteria +/-5%

Note: If the calibration Error (E3 and E4) are greater than 5%, repeat the procedure until values are acceptable.

Perform test. At the completion of the test or hourly; Calculate the calibration drift as a percent of full scale value.
Introduce the zero and mid level gases at the probe and record data as the system final response.

	System Initial Response (F)	System Final Response (G)	Calibration Drift (G-F)/span*100
Zero	0	0	0
Mid	52.3	53.1	-0.8

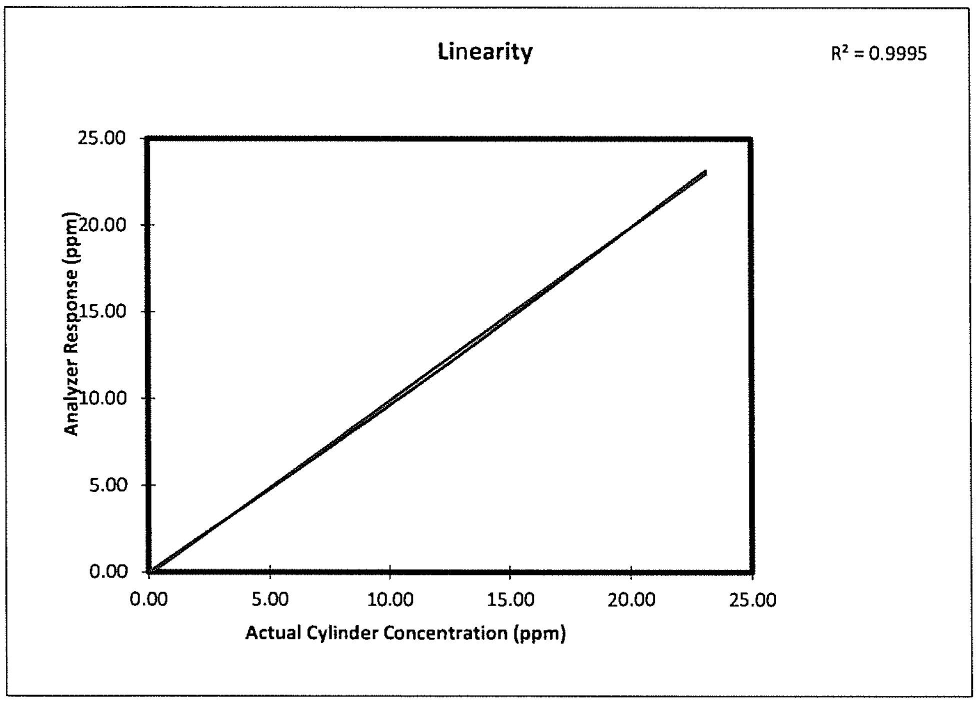
Criteria 3%

Calculate systen response time by introducing zero gas to the probe, record time to reach 95% of calibration gas value.
Repeat with upscale gas. Perform three runs and calculate average of the runs.

	Zero Response Time (seconds)		Upscale Response Time (seconds)
Run 1	30		43
Run 2	30		45
Run 3	30		41
Average	**30**		**43**

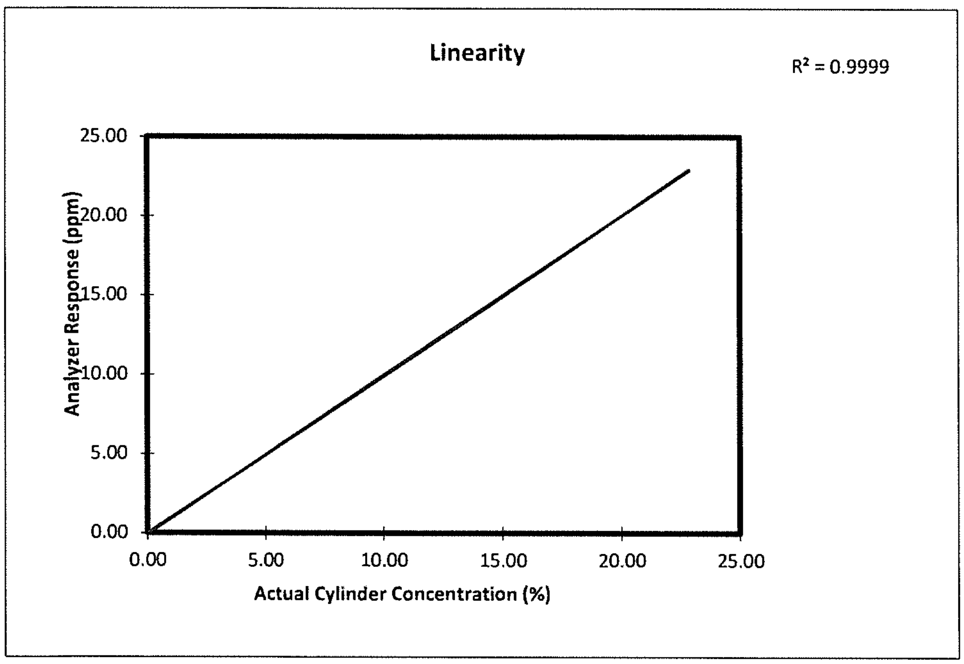
Clean Harbors
March 5, 2024
Analyzer Linearity Determination
Oxygen Analyzer

Range	Analyzer I.D.	Actual Concentration	Instrument Response	Calibration Error (as % of span)
25	COE 20116 Siemens Ultramat 23	0.00	0.00	0.0
		12.56	12.14	-1.7
		23.13	23.17	0.2



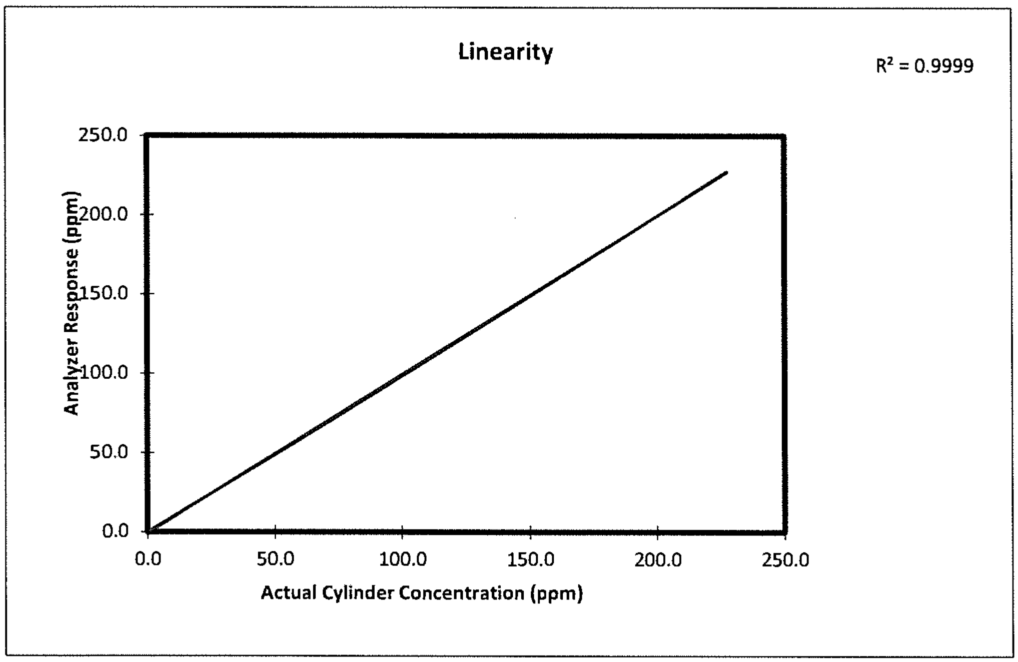
Clean Harbors
March 5, 2024
Analyzer Linearity Determination
Carbon Dioxide Analyzer

Range	Analyzer I.D.	Actual Concentration	Instrument Response	Calibration Error (as % of span)
25	COE 20116 Siemens Ultramat 23	0.00	0.00	0.0
		12.04	11.92	-0.5
		22.85	22.95	0.4



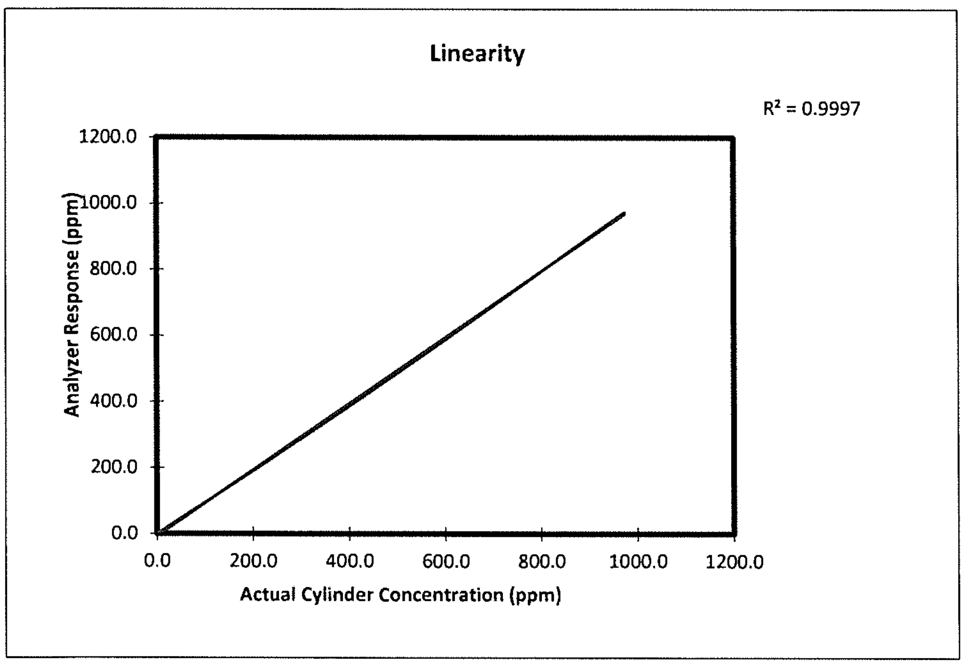
Clean Harbors
March 5, 2024
Analyzer Linearity Determination
Sulphur Dioxide Analyzer

Range	Analyzer I.D.	Actual Concentration	Instrument Response	Calibration Error (as % of span)
250	COE 20099 Teledyne API-T100H	0.0	0.0	0.0
		91.3	89.6	-0.7
		227.5	227.6	0.0



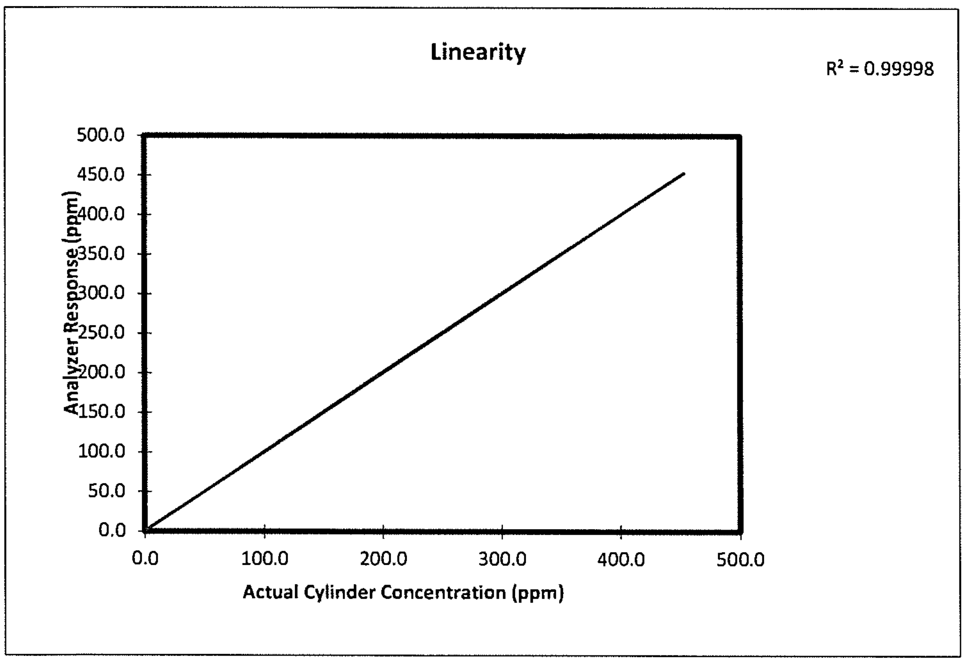
Clean Harbors
March 5, 2024
Analyzer Linearity Determination
Carbon Monoxide Analyzer

Range	Analyzer I.D.	Actual Concentration	Instrument Response	Calibration Error (as % of span)
1000	COE 20116 Siemens Ultramat 23	0.0	0.0	0.0
		441.7	427.5	-1.4
		973.2	973.8	0.1



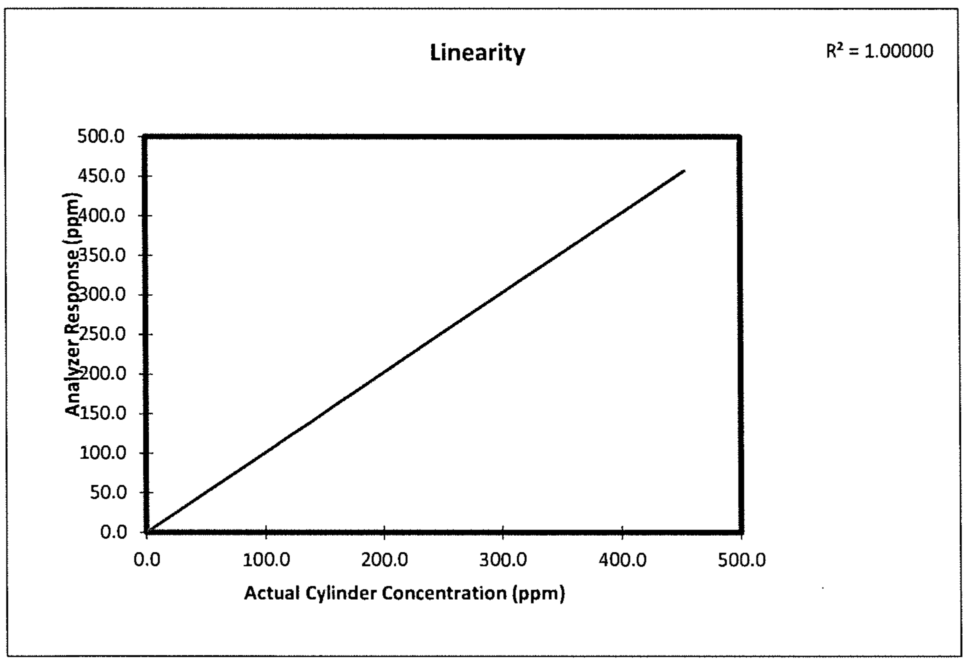
Clean Harbors
March 5, 2024
Analyzer Linearity Determination
Nitric Oxide Analyzer

Range	Analyzer I.D.	Actual Concentration	Instrument Response	Calibration Error (as % of span)
500	COE 20061 Teledyne 200 EH	0.0	0.4	0.1
		230.4	232.3	0.4
		453.2	453.3	0.0



Clean Harbors
March 5, 2024
Analyzer Linearity Determination
Nitrogen Oxides Analyzer

Range	Analyzer I.D.	Actual Concentration	Instrument Response	Calibration Error (as % of span)
500	COE 20061 Teledyne 200 EH	0.0	0.3	0.1
		230.4	232.9	0.5
		453.2	457.6	0.9



APPENDIX 17

Metals and Particulate Emission Calculation Outputs
(12 pages)

ORTECH Consulting Inc.

Plant:	Clean Harbors
Plant Location:	Corunna, ON
Test Location:	Incinerator Exhaust Stack
Test No.:	1 - Particulate & Metals
Date:	March 5, 2024

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.844	
DGM CORRECTION FACTOR	1.035	
NOZZLE DIAMETER	6.32	mm
DRY REF GAS VOLUME SAMPLED	4.696	m^3
AVGERGE ISOKINETICITY	101.2	%
STACK DIAMETER	1.47	m
LENGTH	0.00	m
WIDTH	0.00	m
AREA OF STACK or DUCT	1.70	m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	191.7	^oC
AVERAGE GAS MOISTURE BY VOLUME	49.0	%
AVERAGE GAS VELOCITY	32.00	m/s
BAROMETRIC PRESSURE (Station)	99.187	Kpa
STATIC PRESSURE	0.164	Kpa
ABSOLUTE GAS PRESSURE	99.352	Kpa
OXYGEN CONCENTRATION	8.96	%
CARBON DIOXIDE CONCENTRATION	9.05	%
CARBON MONOXIDE CONCENTRATION	67.9	ppm

FLOWRATE

ACTUAL GAS FLOWRATE	54.55	m^3/s
DRY REF GAS FLOWRATE	17.51	Rm^3/s
DRY ADJ GAS FLOWRATE	21.11	Rm^3/s
WET REF GAS FLOWRATE	34.31	Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	3.5	mg
	-FILTER	2.7	mg
	-TOTAL	6.2	mg
DRY REF GAS VOLUME SAMPLED		4.696	m^3
PARTICULATE CONC. - ACTUAL		0.424	mg/m^3
PARTICULATE CONC. - DRY REF		1.320	mg/m^3
PARTICULATE CONC. - DRY ADJ		1.095	mg/m^3
PARTICULATE CONC. - WET REF		0.674	mg/m^3
PARTICULATE EMISSION RATE		0.023113	g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)
Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	1 - Particulate & Metals	**Test Location:**	Incinerator Exhaust Stack
Date:	March 5, 2024	**Operator:**	DU

Pitot Factor	0.844	**Filter (mg)**	2.7
DGMCF	1.035	**Probe (mg)**	3.5
Barometric Pressure	29.29 "Hg	**CWTR (g)**	3268.5
Static Pressure	0.660 "H_2O	**WCBDA (g)**	43.3
Nozzle	0.2488 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.52 ft^3
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.96
CO2%	9.05
COppm	67.9

Measured H2O
49.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	16.10	1.4	372	60	63	64	1.3	5.0		28.18	
	3	17.84	1.4	374	50	64	62	1.3	5.0		28.22	**100.0**
	6	19.61	1.35	374	49	64	62	1.3	5.0		27.71	**101.9**
	9	21.35	1.4	374	48	64	62	1.3	5.0		28.22	**102.0**
2	12	23.09	1.4	373	48	64	62	1.3	5.0		28.20	**100.2**
	15	24.81	1.45	373	48	64	62	1.3	5.0		28.70	**99.0**
	18	26.52	1.4	375	51	65	63	1.3	5.0		28.24	**96.7**
	21	28.22	1.4	380	52	65	63	1.3	5.0		28.32	**97.8**
3	24	29.95	1.55	374	53	65	63	1.4	5.0		29.69	**99.8**
	27	31.82	1.5	376	55	65	64	1.4	5.0		29.24	**102.2**
	30	33.65	1.5	374	53	65	64	1.4	5.0		29.21	**101.7**
	33	35.46	1.45	376	56	65	64	1.4	5.0		28.75	**100.4**
4	36	37.27	1.85	372	52	65	64	1.6	6.0		32.40	**102.3**
	39	39.22	1.7	375	52	65	64	1.6	6.0		31.11	**97.4**
	42	41.17	1.8	375	51	65	64	1.6	6.0		32.02	**101.7**
	45	43.16	1.75	373	51	66	64	1.6	6.0		31.53	**100.9**
5	48	45.18	1.8	375	51	66	64	1.6	6.0		32.02	**103.7**
	51	47.10	2	371	50	66	64	1.6	6.0		33.67	**97.3**
	54	49.06	2.05	373	54	66	64	1.6	6.0		34.13	**94.0**
	57	51.02	2.15	370	50	66	64	1.8	6.0		34.89	**92.9**
6	60	53.12	2.15	373	50	66	64	1.8	6.0		34.95	**97.1**
	63	55.20	2.2	374	52	66	64	1.8	6.0		35.37	**96.3**
	66	57.30	2.2	377	56	66	64	1.8	6.0		35.44	**96.2**
	69	59.49	2.1	377	56	66	64	1.8	6.0		34.62	**100.5**
7	72	61.46	2	373	56	66	64	1.8	6.0		33.71	**92.6**
	75	63.54	2.1	374	53	67	63	1.8	6.0		34.56	**99.9**
	78	65.61	2.1	374	53	67	63	1.8	6.0		34.56	**97.1**
	81	67.75	2.1	375	53	67	63	1.8	6.0		34.58	**100.4**
8	84	69.86	2.1	374	53	67	63	1.8	6.0		34.56	**99.0**
	87	72.00	1.9	372	53	67	63	1.8	6.0		32.83	**100.4**
	90	74.11	1.8	373	61	66	62	1.8	6.0		31.98	**103.9**
	93	76.23	1.9	373	64	66	62	1.8	6.0		32.85	**107.5**
9	96	78.26	1.9	372	67	66	62	1.8	6.0		32.83	**100.2**
	99	80.46	2.1	372	68	66	62	1.8	6.0		34.52	**108.5**

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	1 - Particulate & Metals	**Test Location:**	Incinerator Exhaust Stack
Date:	March 5, 2024	**Operator:**	DU

Pitot Factor	0.844	**Filter (mg)**	2.7
DGMCF	1.035	**Probe (mg)**	3.5
Barometric Pressure	29.29 "Hg	**CWTR (g)**	3268.5
Static Pressure	0.660 "H_2O	**WCBDA (g)**	43.3
Nozzle	0.2488 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.52 ft³
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.96
CO2%	9.05
COppm	67.9

Measured H2O
49.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	102	82.58	2	359	47	67	67	1.8	6.0		33.42	**99.5**
	105	84.77	2	359	47	67	63	1.8	6.0		33.42	**103.9**
10	108	86.96	1.4	360	59	67	62	1.3	6.0		27.98	**104.3**
	111	88.89	1.3	360	57	67	61	1.3	6.0		26.96	**109.9**
	114	90.71	1.3	360	57	67	61	1.3	6.0		26.96	**107.6**
	117	92.46	1.35	360	58	67	61	1.3	6.0		27.48	**103.5**
	120	94.23								0.52		**102.7**
1	0	94.75	2.2	379	54	71	70	1.9	7.0		35.48	
	3	96.90	2.1	378	54	71	67	1.9	7.0		34.64	**97.8**
	6	99.07	2.1	378	51	71	68	1.9	7.0		34.64	**101.3**
	9	101.10	2.15	376	51	71	66	1.9	7.0		35.01	**94.6**
2	12	103.35	2.1	375	51	71	66	1.9	7.0		34.58	**103.7**
	15	105.50	2.2	375	51	71	66	1.9	7.0		35.40	**100.2**
	18	107.68	2.1	377	56	72	67	1.9	7.0		34.62	**99.3**
	21	109.77	2.1	379	56	72	67	1.9	7.0		34.66	**97.4**
3	24	111.91	2.15	378	63	73	68	1.9	7.0		35.05	**99.8**
	27	114.01	2.25	382	60	73	68	2	7.0		35.94	**96.6**
	30	116.22	2.1	381	57	73	67	2	7.0		34.71	**99.6**
	33	118.47	2.1	382	54	72	67	2	7.0		34.73	**105.0**
4	36	120.71	2.15	383	54	72	66	2	7.0		35.16	**104.7**
	39	122.95	2.15	383	53	71	66	2	7.0		35.16	**103.6**
	42	125.17	2.1	383	51	71	66	2	7.0		34.75	**102.8**
	45	127.40	2.2	383	49	71	66	2	7.0		35.56	**104.5**
5	48	129.64	2.3	385	49	71	66	2	7.0		36.41	**102.6**
	51	131.86	2.2	386	52	71	66	2	7.0		35.63	**99.5**
	54	134.08	2.15	387	55	71	66	2	7.0		35.24	**101.8**
	57	136.30	2.2	386	57	71	66	2	7.0		35.63	**103.1**
6	60	138.52	2.1	386	58	71	66	2	7.0		34.81	**101.8**
	63	140.73	2	389	55	71	66	2	7.0		34.03	**103.7**
	66	142.91	2	386	55	71	66	2	7.0		33.97	**105.1**
	69	145.16	2	386	53	71	66	2	7.0		33.97	**108.2**
7	72	147.37	1.75	385	53	71	66	1.6	7.0		31.76	**106.3**
	75	149.42	1.7	385	55	71	66	1.6	7.0		31.30	**105.3**
	78	151.36	1.85	385	55	71	66	1.6	7.0		32.65	**101.1**

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	1 - Particulate & Metals	**Test Location:**	Incinerator Exhaust Stack
Date:	March 5, 2024	**Operator:**	DU

Pitot Factor	0.844	**Filter (mg)**	2.7
DGMCF	1.035	**Probe (mg)**	3.5
Barometric Pressure	29.29 "Hg	**CWTR (g)**	3268.5
Static Pressure	0.660 "H_2O	**WCBDA (g)**	43.3
Nozzle	0.2488 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.52 ft³
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.96
CO2%	9.05
COppm	67.9

Measured H2O
49.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	81	153.32	1.7	384	61	71	66	1.6	7.0		31.28	**97.9**
8	84	155.27	1.6	384	60	71	66	1.6	7.0		30.35	**101.5**
	87	157.22	1.6	383	58	71	67	1.6	7.0		30.33	**104.6**
	90	159.16	1.6	383	58	71	67	1.6	7.0		30.33	**103.9**
	93	161.12	1.6	383	57	71	67	1.6	7.0		30.33	**105.0**
9	96	163.07	1.6	383	57	71	67	1.6	7.0		30.33	**104.5**
	99	165.01	1.2	383	57	71	67	1.1	6.0		26.27	**103.9**
	102	166.70	1.2	383	57	71	67	1.1	6.0		26.27	**104.4**
	105	168.31	1.2	383	57	71	67	1.1	6.0		26.27	**99.5**
10	108	169.92	1.2	383	57	71	67	1.1	6.0		26.27	**99.5**
	111	171.51	1.2	383	56	71	67	1.1	6.0		26.27	**98.3**
	114	173.15	1.2	383	56	71	67	1.1	6.0		26.27	**101.3**
	117	174.76	1.2	383	56	71	67	1.1	6.0		26.27	**99.5**
	120	176.37										**99.5**

ORTECH Consulting Inc.

Plant:	Clean Harbors
Plant Location:	Corunna, ON
Test Location:	Incinerator Exhaust Stack
Test No.:	2 - Particulate & Metals
Date:	March 6, 2024

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.844	
DGM CORRECTION FACTOR	1.035	
NOZZLE DIAMETER	6.32	mm
DRY REF GAS VOLUME SAMPLED	4.618	m^3
AVGERGE ISOKINETICITY	102.4	%
STACK DIAMETER	1.47	m
LENGTH	0.00	m
WIDTH	0.00	m
AREA OF STACK or DUCT	1.70	m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	194.9	°C
AVERAGE GAS MOISTURE BY VOLUME	49.4	%
AVERAGE GAS VELOCITY	31.52	m/s
BAROMETRIC PRESSURE (Station)	99.628	Kpa
STATIC PRESSURE	0.164	Kpa
ABSOLUTE GAS PRESSURE	99.792	Kpa
OXYGEN CONCENTRATION	8.48	%
CARBON DIOXIDE CONCENTRATION	9.64	%
CARBON MONOXIDE CONCENTRATION	42.8	ppm

FLOWRATE

ACTUAL GAS FLOWRATE	53.72	m^3/s
DRY REF GAS FLOWRATE	17.06	Rm^3/s
DRY ADJ GAS FLOWRATE	21.40	Rm^3/s
WET REF GAS FLOWRATE	33.71	Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	2.2	mg
	-FILTER	2.4	mg
	-TOTAL	4.6	mg
DRY REF GAS VOLUME SAMPLED		4.618	m^3
PARTICULATE CONC. - ACTUAL		0.316	mg/m^3
PARTICULATE CONC. - DRY REF		0.996	mg/m^3
PARTICULATE CONC. - DRY ADJ		0.794	mg/m^3
PARTICULATE CONC. - WET REF		0.504	mg/m^3
PARTICULATE EMISSION RATE		0.016991	g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	2 - Particulate & Metals	**Test Location:**	Incinerator Exhaust Stack
Date:	March 6, 2024	**Operator:**	DU

Pitot Factor	0.844	**Filter (mg)**	2.4
DGMCF	1.035	**Probe (mg)**	2.2
Barometric Pressure	29.42 "Hg	**CWTR (g)**	3275.1
Static Pressure	0.660 "H_2O	**WCBDA (g)**	37.5
Nozzle	0.2488 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.56 ft^3
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.48
CO2%	9.64
COppm	42.8

Measured H2O
49.4 %

				Temperatures								
Point	Time	DGM Reading	ΔP "H2O	Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	77.02	2.15	381	44	65	63	1.8	5.0		35.05	
	3	79.09	2.1	384	47	67	64	1.8	5.0		34.70	**97.5**
	6	81.17	2.1	383	48	67	62	1.8	5.0		34.68	**99.0**
	9	83.28	2.1	382	49	68	62	1.8	5.0		34.66	**100.6**
2	12	85.40	2.1	382	50	68	62	1.8	5.0		34.66	**100.9**
	15	87.49	2.05	383	50	68	62	1.8	5.0		34.26	**99.5**
	18	89.58	2.05	381	51	69	63	1.8	5.0		34.22	**100.8**
	21	91.67	2.1	382	51	69	63	1.8	5.0		34.66	**100.5**
3	24	93.77	2.05	381	53	70	65	1.8	5.0		34.22	**99.8**
	27	95.86	2	381	54	71	65	1.8	5.0		33.80	**100.2**
	30	97.92	2.05	381	54	71	65	1.8	5.0		34.22	**99.9**
	33	99.98	2.1	382	54	71	66	1.9	6.0		34.66	**98.6**
4	36	102.10	2.1	382	53	72	67	1.9	6.0		34.66	**100.3**
	39	104.25	2.15	380	53	72	67	1.9	6.0		35.03	**101.5**
	42	106.37	2.3	381	53	72	67	1.9	6.0		36.25	**98.8**
	45	108.55	2.15	382	53	73	68	1.9	6.0		35.07	**98.3**
5	48	110.73	2.1	382	53	73	68	1.9	6.0		34.66	**101.5**
	51	112.91	2.2	382	53	73	68	1.9	6.0		35.47	**102.7**
	54	114.98	2.15	382	53	73	68	1.9	6.0		35.07	**95.3**
	57	117.26	2.15	384	51	74	68	1.9	6.0		35.11	**106.2**
6	60	119.42	2.15	382	52	74	68	1.9	6.0		35.07	**100.6**
	63	121.57	2.15	382	52	74	69	1.9	6.0		35.07	**100.0**
	66	123.72	1.9	382	52	75	69	1.9	6.0		32.97	**99.9**
	69	125.88	1.9	382	52	75	69	1.9	6.0		32.97	**106.7**
7	72	128.03	1.8	382	53	75	69	1.7	6.0		32.09	**106.2**
	75	130.08	1.7	383	53	75	69	1.6	5.5		31.20	**104.0**
	78	132.00	1.8	384	53	75	69	1.6	5.5		32.13	**100.3**
	81	133.98	1.8	382	55	75	70	1.6	5.5		32.09	**100.5**
8	84	135.96	1.9	383	56	76	70	1.6	5.5		32.99	**100.3**
	87	137.94	1.7	384	59	76	70	1.6	5.5		31.22	**97.6**
	90	139.92	1.6	383	59	76	70	1.6	5.5		30.27	**103.3**
	93	141.89	1.7	383	63	76	70	1.6	5.5		31.20	**105.8**
9	96	143.87	1.1	382	63	76	70	1.2	5.0		25.08	**103.2**
	99	145.63	1.1	382	59	76	70	1.2	5.0		25.08	113.9

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	2 - Particulate & Metals	**Test Location:**	Incinerator Exhaust Stack
Date:	March 6, 2024	**Operator:**	DU

Pitot Factor	0.844	**Filter (mg)**	2.4
DGMCF	1.035	**Probe (mg)**	2.2
Barometric Pressure	29.42 "Hg	**CWTR (g)**	3275.1
Static Pressure	0.660 "H_2O	**WCBDA (g)**	37.5
Nozzle	0.2488 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.56 ft³
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.48
CO2%	9.64
COppm	42.8

Measured H2O
49.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	102	147.36	1.1	380	56	77	71	1.2	5.0		25.05	**111.9**
	105	149.06	1.2	380	56	77	71	1.1	5.0		26.17	**109.6**
10	108	150.72	1.1	380	52	77	71	1.1	5.0		25.05	**102.5**
	111	152.37	1.1	380	52	77	71	1	5.0		25.05	**106.4**
	114	154.00	1.2	380	50	77	71	1	5.0		26.17	**105.1**
	117	155.61	1.1	380	51	77	71	1	5.0		25.05	**99.4**
	120	157.21								0.56		**103.1**
1	0	157.77	1.6	384	45	77	76	1.4	5.5		30.29	
	3	159.77	1.5	384	44	77	71	1.4	5.5		29.33	**106.8**
	6	161.47	1.55	384	43	77	68	1.4	5.5		29.81	**94.2**
	9	163.18	1.6	383	43	76	68	1.4	5.5		30.27	**93.4**
2	12	165.01	1.8	385	44	77	68	1.6	6.0		32.14	**98.5**
	15	166.97	1.7	382	44	76	68	1.6	6.0		31.18	**99.5**
	18	168.95	1.6	382	47	75	68	1.6	6.0		30.25	**103.3**
	21	170.91	1.6	385	46	76	69	1.6	6.0		30.31	**105.5**
3	24	172.90	1.6	383	46	75	69	1.6	6.0		30.27	**107.1**
	27	174.85	1.6	383	45	76	69	1.6	6.0		30.27	**105.0**
	30	176.81	1.6	382	46	76	69	1.6	6.0		30.25	**105.4**
	33	178.76	1.6	384	46	76	69	1.6	6.0		30.29	**104.8**
4	36	180.72	1.7	385	49	75	70	1.6	6.0		31.24	**105.5**
	39	182.67	1.7	384	48	76	70	1.6	6.0		31.22	**101.9**
	42	184.63	1.7	384	48	75	70	1.6	6.0		31.22	**102.2**
	45	186.56	1.7	384	50	76	70	1.6	6.0		31.22	**100.8**
5	48	188.51	1.9	386	52	76	71	1.7	6.0		33.04	**101.7**
	51	190.55	1.9	384	52	76	71	1.7	6.0		33.01	**100.7**
	54	192.60	1.9	384	52	76	71	1.7	6.0		33.01	**101.1**
	57	194.64	1.9	386	54	76	71	1.7	6.0		33.04	**100.6**
6	60	196.71	2.15	385	53	76	71	1.9	6.0		35.13	**102.2**
	63	198.90	2.2	385	53	77	71	1.9	6.0		35.54	**101.6**
	66	201.07	2.15	386	53	77	71	1.9	6.0		35.15	**99.4**
	69	203.27	2.2	386	58	77	71	1.9	6.0		35.56	**102.0**
7	72	205.47	2.2	387	60	77	71	1.9	6.0		35.58	**100.9**
	75	207.65	2.15	387	60	77	71	1.9	6.0		35.17	**100.0**
	78	209.83	2.1	386	56	77	71	1.9	6.0		34.74	**101.2**

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	2 - Particulate & Metals	**Test Location:**	Incinerator Exhaust Stack
Date:	March 6, 2024	**Operator:**	DU

Pitot Factor	0.844	**Filter (mg)**	2.4
DGMCF	1.035	**Probe (mg)**	2.2
Barometric Pressure	29.42 "Hg	**CWTR (g)**	3275.1
Static Pressure	0.660 "H_2O	**WCBDA (g)**	37.5
Nozzle	0.2488 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.56 ft^3
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.48
CO2%	9.64
COppm	42.8

Measured H2O
49.4 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	81	212.02	2	386	55	77	71	1.9	6.0		33.90	**102.8**
8	84	214.20	1.85	386	55	77	71	1.7	6.0		32.61	**104.8**
	87	216.27	1.9	386	53	77	71	1.7	6.0		33.04	**103.4**
	90	218.30	1.8	387	51	77	71	1.7	6.0		32.18	**100.1**
	93	220.34	1.8	386	51	77	71	1.7	6.0		32.16	**103.4**
9	96	222.38	1.2	380	50	77	72	1.1	5.0		26.17	**103.4**
	99	224.09	1.1	380	50	77	72	1.1	5.0		25.05	**105.5**
	102	225.75	1.05	380	50	77	72	1.1	5.0		24.48	**106.9**
	105	227.40	1.2	380	52	77	72	1.1	5.0		26.17	**108.8**
10	108	229.06	1.1	380	53	77	72	1.1	5.0		25.05	**102.4**
	111	230.72	1	379	54	77	72	0.9	5.0		23.87	**106.9**
	114	232.27	1.1	379	56	77	72	1	5.0		25.04	**104.6**
	117	233.89	1.2	379	59	77	72	1.1	5.0		26.15	**104.3**
	120	235.56										**102.9**

ORTECH Consulting Inc.

Plant:	Clean Harbors
Plant Location:	Corunna, ON
Test Location:	Incinerator Exhaust Stack
Test No.:	3 - Particulate & Metals
Date:	March 7, 2024

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.844	
DGM CORRECTION FACTOR	1.035	
NOZZLE DIAMETER	6.32	mm
DRY REF GAS VOLUME SAMPLED	4.762	m^3
AVGERGE ISOKINETICITY	101.7	%
STACK DIAMETER	1.47	m
LENGTH	0.00	m
WIDTH	0.00	m
AREA OF STACK or DUCT	1.70	m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	192.4	°C
AVERAGE GAS MOISTURE BY VOLUME	49.1	%
AVERAGE GAS VELOCITY	32.14	m/s
BAROMETRIC PRESSURE (Station)	99.966	Kpa
STATIC PRESSURE	0.164	Kpa
ABSOLUTE GAS PRESSURE	100.131	Kpa
OXYGEN CONCENTRATION	8.59	%
CARBON DIOXIDE CONCENTRATION	9.04	%
CARBON MONOXIDE CONCENTRATION	68.4	ppm

FLOWRATE

ACTUAL GAS FLOWRATE	54.78	m^3/s
DRY REF GAS FLOWRATE	17.66	Rm^3/s
DRY ADJ GAS FLOWRATE	21.95	Rm^3/s
WET REF GAS FLOWRATE	34.68	Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	1.2	mg
	-FILTER	1.9	mg
	-TOTAL	3.1	mg
DRY REF GAS VOLUME SAMPLED		4.762	m^3
PARTICULATE CONC. - ACTUAL		0.210	mg/m^3
PARTICULATE CONC. - DRY REF		0.651	mg/m^3
PARTICULATE CONC. - DRY ADJ		0.524	mg/m^3
PARTICULATE CONC. - WET REF		0.332	mg/m^3
PARTICULATE EMISSION RATE		0.011494	g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	3 - Particulate & Metals	**Test Location:**	Incinerator Exhaust Stack
Date:	March 7, 2024	**Operator:**	DU

Pitot Factor	0.844	**Filter (mg)**	1.9
DGMCF	1.035	**Probe (mg)**	1.2
Barometric Pressure	29.52 "Hg	**CWTR (g)**	3340.5
Static Pressure	0.660 "H_2O	**WCBDA (g)**	32.4
Nozzle	0.2488 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.6 ft^3
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.59
CO2%	9.04
COppm	68.4

Measured H2O
49.1 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	36.60	1.7	388	44	55	54	1.4	4.0		31.25	
	3	38.41	1.7	387	44	58	58	1.4	4.0		31.23	**97.5**
	6	40.20	1.6	386	44	59	57	1.4	4.5		30.28	**95.7**
	9	42.05	1.7	385	43	59	57	1.5	5.0		31.19	**101.9**
2	12	43.95	1.7	386	42	60	58	1.5	5.0		31.21	**101.5**
	15	45.81	1.6	386	42	61	59	1.5	5.0		30.28	**99.3**
	18	47.68	1.6	384	43	61	59	1.5	5.0		30.24	**102.7**
	21	49.53	1.7	384	43	62	60	1.5	5.0		31.17	**101.4**
3	24	51.39	1.6	383	43	63	61	1.5	5.0		30.22	**98.8**
	27	53.22	1.6	383	43	63	62	1.5	5.0		30.22	**99.9**
	30	55.04	1.7	383	42	64	62	1.5	5.0		31.15	**99.3**
	33	56.87	1.8	383	42	65	63	1.6	5.0		32.06	**96.7**
4	36	58.79	1.8	387	43	65	63	1.6	5.0		32.13	**98.5**
	39	60.78	1.8	383	41	66	64	1.6	5.0		32.06	**102.3**
	42	62.75	1.9	383	41	66	64	1.6	5.0		32.94	**100.8**
	45	64.74	1.8	383	43	67	64	1.6	5.0		32.06	**99.1**
5	48	66.71	1.95	383	43	67	64	1.7	5.0		33.37	**100.7**
	51	68.74	2	383	44	68	65	1.8	5.5		33.79	**99.8**
	54	70.84	1.95	383	46	68	65	1.8	5.5		33.37	**101.7**
	57	72.96	1.95	383	48	69	65	1.8	5.5		33.37	**104.0**
6	60	75.06	2.15	380	48	69	66	1.9	5.5		34.97	**102.9**
	63	77.21	2.25	382	49	69	66	2	5.5		35.82	**100.1**
	66	79.45	2.15	382	52	69	66	2	5.5		35.02	**102.1**
	69	81.70	2.15	381	51	70	66	2	5.5		34.99	**104.9**
7	72	83.93	2.15	381	50	70	67	2	5.5		34.99	**103.8**
	75	86.15	2.1	380	49	71	67	2	5.5		34.56	**103.3**
	78	88.37	2.1	380	49	71	67	2	5.5		34.56	**104.3**
	81	90.58	2.1	377	48	71	68	2	5.5		34.50	**103.9**
8	84	92.81	2.1	377	50	71	68	2	5.5		34.50	**104.5**
	87	95.03	1.8	377	50	71	68	1.7	5.0		31.94	**104.0**
	90	97.12	1.85	378	48	72	69	1.7	5.0		32.40	**105.7**
	93	99.17	1.9	378	47	73	69	1.7	5.0		32.84	**102.2**
9	96	101.23	1.3	370	47	73	70	1.2	5.0		27.03	**101.2**
	99	103.00	1.2	370	47	73	70	1.2	5.0		25.97	**104.4**

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	3 - Particulate & Metals	**Test Location:**	Incinerator Exhaust Stack
Date:	March 7, 2024	**Operator:**	DU

Pitot Factor	0.844	**Filter (mg)**	1.9
DGMCF	1.035	**Probe (mg)**	1.2
Barometric Pressure	29.52 "Hg	**CWTR (g)**	3340.5
Static Pressure	0.660 "H_2O	**WCBDA (g)**	32.4
Nozzle	0.2488 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.6 ft^3
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.59
CO2%	9.04
COppm	68.4

Measured H2O
49.1 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	102	104.70	1.25	371	45	73	70	1.2	5.0		26.52	**104.4**
	105	106.41	1.3	371	47	73	70	1.2	5.0		27.05	**102.9**
10	108	108.11	1.25	371	45	73	70	1.2	5.0		26.52	**100.3**
	111	109.83	1.25	370	43	73	70	1.2	5.0		26.51	**103.5**
	114	111.53	1.25	370	43	73	70	1.2	5.0		26.51	**102.2**
	117	113.23	1.25	370	43	73	70	1.2	5.0		26.51	**102.2**
	120	114.89								0.6		**99.8**
1	0	115.49	2.1	373	50	74	74	1.8	5.5		34.42	
	3	117.60	2.15	373	42	75	74	1.8	5.5		34.83	**97.8**
	6	119.69	2.15	373	41	74	73	1.8	5.5		34.83	**95.6**
	9	121.79	2.15	373	41	74	74	1.8	5.5		34.83	**96.3**
2	12	123.88	2.1	374	41	74	74	1.9	5.5		34.44	**95.7**
	15	126.03	2.15	376	41	74	74	1.9	5.5		34.89	**99.7**
	18	128.18	2.3	378	48	74	74	1.9	5.5		36.13	**98.7**
	21	130.33	2.15	378	51	74	74	1.9	5.5		34.93	**95.5**
3	24	132.45	2.15	378	50	74	74	1.9	5.5		34.93	**97.4**
	27	134.72	2.15	383	49	74	74	1.9	5.5		35.04	**104.3**
	30	136.92	2.15	379	52	73	74	1.9	5.5		34.95	**101.4**
	33	139.11	2.15	379	52	74	74	1.9	5.5		34.95	**100.8**
4	36	141.30	2.2	376	52	74	75	1.9	5.5		35.29	**100.7**
	39	143.48	2.3	377	52	74	73	2	6.0		36.11	**98.8**
	42	145.72	2.2	377	53	74	74	2	6.0		35.31	**99.6**
	45	147.96	2.15	376	55	74	74	2	6.0		34.89	**101.7**
5	48	150.22	2.15	376	55	74	74	2	6.0		34.89	**103.7**
	51	152.45	2.15	376	55	73	72	2	6.0		34.89	**102.4**
	54	154.67	2.15	376	55	74	73	2	6.0		34.89	**102.2**
	57	156.89	2.15	376	55	73	73	2	6.0		34.89	**102.0**
6	60	159.11	2.2	376	55	73	73	2	6.0		35.29	**102.1**
	63	161.33	1.8	377	49	73	73	1.7	5.5		31.94	**100.9**
	66	163.42	1.8	377	48	73	72	1.7	5.5		31.94	**105.0**
	69	165.48	1.9	377	47	73	73	1.7	5.5		32.82	**103.6**
7	72	167.55	1.8	377	46	73	71	1.7	5.5		31.94	**101.2**
	75	169.61	1.7	378	45	73	71	1.7	5.5		31.06	**103.7**
	78	171.67	1.7	376	44	73	71	1.7	5.5		31.02	**106.8**

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	3 - Particulate & Metals	**Test Location:**	Incinerator Exhaust Stack
Date:	March 7, 2024	**Operator:**	DU

Pitot Factor	0.844	**Filter (mg)**	1.9
DGMCF	1.035	**Probe (mg)**	1.2
Barometric Pressure	29.52 "Hg	**CWTR (g)**	3340.5
Static Pressure	0.660 "H_2O	**WCBDA (g)**	32.4
Nozzle	0.2488 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.6 ft^3
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.59
CO2%	9.04
COppm	68.4

Measured H2O
49.1 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	81	173.73	1.7	378	44	73	71	1.7	5.5		31.06	**106.7**
8	84	175.78	1.6	376	44	73	70	1.5	5.0		30.10	**106.3**
	87	177.72	1.6	376	47	72	70	1.5	5.0		30.10	**103.6**
	90	179.65	1.55	376	50	72	70	1.5	5.0		29.62	**103.1**
	93	181.57	1.65	378	51	72	70	1.5	5.0		30.60	**104.2**
9	96	183.49	1.55	378	51	72	70	1.5	5.5		29.66	**101.2**
	99	185.43	1.55	377	50	72	70	1.4	5.5		29.64	**105.5**
	102	187.30	1.65	379	52	72	70	1.5	5.0		30.62	**101.6**
	105	189.21	1.55	379	52	72	70	1.5	5.0		29.68	**100.7**
10	108	191.12	1.5	375	56	72	70	1.5	5.0		29.13	**103.9**
	111	193.02	1.5	375	55	72	70	1.5	5.0		29.13	**104.8**
	114	194.91	1.5	375	53	72	70	1.5	5.0		29.13	**104.3**
	117	196.83	1.5	375	53	72	70	1.5	5.0		29.13	**105.9**
	120	198.76										**106.5**

APPENDIX 18

Semi-Volatile Organic Compound Emission Calculation Outputs
(12 pages)

ORTECH Consulting Inc.

Plant:	Clean Harbors
Plant Location:	Corunna, ON
Test Location:	Incinerator Exhaust Stack
Test No.:	1 - SVOC
Date:	March 5, 2024

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.843	
DGM CORRECTION FACTOR	0.992	
NOZZLE DIAMETER	6.43	mm
DRY REF GAS VOLUME SAMPLED	4.706	m^3
AVGERGE ISOKINETICITY	98.3	%
STACK DIAMETER	1.47	m
LENGTH	0.00	m
WIDTH	0.00	m
AREA OF STACK or DUCT	1.70	m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	192.9	^{o}C
AVERAGE GAS MOISTURE BY VOLUME	48.3	%
AVERAGE GAS VELOCITY	31.59	m/s
BAROMETRIC PRESSURE (Station)	99.187	Kpa
STATIC PRESSURE	0.164	Kpa
ABSOLUTE GAS PRESSURE	99.352	Kpa
OXYGEN CONCENTRATION	8.96	%
CARBON DIOXIDE CONCENTRATION	9.05	%
CARBON MONOXIDE CONCENTRATION	67.9	ppm

FLOWRATE

ACTUAL GAS FLOWRATE	53.84	m^3/s
DRY REF GAS FLOWRATE	17.46	Rm^3/s
DRY ADJ GAS FLOWRATE	21.05	Rm^3/s
WET REF GAS FLOWRATE	33.79	Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0	mg
	-FILTER	0	mg
	-TOTAL	0	mg
DRY REF GAS VOLUME SAMPLED		4.706	m^3
PARTICULATE CONC. - ACTUAL		0.000	mg/m^3
PARTICULATE CONC. - DRY REF		0.000	mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000	mg/m^3
PARTICULATE CONC. - WET REF		0.000	mg/m^3
PARTICULATE EMISSION RATE		0.000000	g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	1 - SVOC	**Test Location:**	Incinerator Exhaust Stack
Date:	March 5, 2024	**Operator:**	JG

Pitot Factor	0.843	**Filter (mg)**	0
DGMCF	0.992	**Probe (mg)**	0
Barometric Pressure	29.29 "Hg	**CWTR (g)**	3221.1
Static Pressure	0.660 "H_2O	**WCBDA (g)**	13.1
Nozzle	0.253 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.18 ft³
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.96
CO2%	9.05
COppm	67.9

Measured H2O
48.3 %

				Temperatures								
Point	Time	DGM Reading	ΔP "H2O	Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	63.34	1.5	375	62	66	67	1.5	2.0		29.15	
	3	65.17	1.5	376	52	66	67	1.5	3.0		29.16	**92.9**
	6	67.04	1.5	377	50	66	66	1.5	4.0		29.18	**95.0**
	9	68.94	1.5	377	49	66	67	1.5	4.5		29.18	**96.7**
2	12	70.87	1.5	376	47	66	67	1.5	4.5		29.16	**98.1**
	15	72.81	1.5	377	46	66	67	1.5	4.5		29.18	**98.6**
	18	74.75	1.5	380	50	66	67	1.5	4.5		29.23	**98.6**
	21	76.69	1.5	380	50	66	67	1.5	4.5		29.23	**98.8**
3	24	78.62	1.7	379	49	66	67	1.7	5.0		31.10	**98.3**
	27	80.68	1.7	378	48	66	67	1.7	5.0		31.08	**98.5**
	30	82.73	1.7	378	49	66	67	1.7	5.0		31.08	**98.0**
	33	84.80	1.7	378	49	67	68	1.7	5.0		31.08	**99.0**
4	36	86.85	1.7	377	49	67	68	1.7	5.0		31.06	**97.8**
	39	88.90	1.7	376	48	67	67	1.7	5.0		31.05	**97.8**
	42	90.98	1.7	378	50	67	69	1.7	5.0		31.08	**99.2**
	45	93.03	1.7	375	47	67	69	1.7	5.0		31.03	**97.7**
5	48	95.05	1.9	375	47	67	69	2	5.5		32.80	**96.1**
	51	97.20	1.9	378	47	68	70	2	5.5		32.86	**96.8**
	54	99.40	1.9	374	46	68	70	2	5.5		32.78	**99.1**
	57	101.61	1.9	379	51	68	70	2	5.5		32.88	**99.3**
6	60	103.82	2	376	50	68	70	2	5.5		33.67	**99.6**
	63	106.03	2	375	46	68	70	2	6.0		33.65	**96.9**
	66	108.25	2	377	47	68	70	2.05	6.0		33.69	**97.3**
	69	110.50	2	378	49	68	70	2.05	6.0		33.71	**98.7**
7	72	112.68	2	381	49	69	70	2.05	6.0		33.77	**95.7**
	75	114.98	2	377	44	69	70	2.05	6.0		33.69	**101.1**
	78	117.22	2	377	48	69	70	2.05	6.0		33.69	**98.2**
	81	119.45	2	375	43	69	70	2.05	6.0		33.65	**97.8**
8	84	121.73	2	375	43	69	70	2.05	6.0		33.65	**99.8**
	87	123.98	2	375	42	69	70	2.05	6.0		33.65	**98.5**
	90	126.18	2.2	375	42	69	70	2.2	6.0		35.30	**96.3**
	93	128.53	2.2	372	42	69	70	2.2	6.0		35.23	**98.1**
9	96	130.90	2.2	374	43	69	70	2.2	6.0		35.28	**98.8**
	99	133.27	2.2	375	43	69	70	2.2	6.0		35.30	**98.9**

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	1 - SVOC	**Test Location:**	Incinerator Exhaust Stack
Date:	March 5, 2024	**Operator:**	JG

Pitot Factor	0.843	**Filter (mg)**	0
DGMCF	0.992	**Probe (mg)**	0
Barometric Pressure	29.29 "Hg	**CWTR (g)**	3221.1
Static Pressure	0.660 "H_2O	**WCBDA (g)**	13.1
Nozzle	0.253 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.18 ft³
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.96
CO2%	9.05
COppm	67.9

Measured H2O
48.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	102	135.64	2.2	358	44	70	70	2.2	6.0		34.94	99.0
	105	138.12	1.8	358	45	70	70	1.9	6.0		31.60	102.4
10	108	140.31	1.8	360	42	70	70	1.9	6.0		31.64	99.9
	111	142.54	1.8	360	42	70	70	1.9	6.0		31.64	101.9
	114	144.70	1.8	366	42	70	69	1.9	6.0		31.75	98.7
	117	146.97	1.8	367	42	70	70	1.9	6.0		31.77	104.2
	120	149.80								0.18		129.8
1	0	149.98	1.7	376	49	70	71	1.8	5.0		31.05	
	3	152.13	1.7	380	43	70	71	1.8	5.0		31.12	101.9
	6	154.15	1.7	380	41	70	71	1.8	5.0		31.12	96.0
	9	156.25	1.7	380	41	70	71	1.8	5.0		31.12	99.8
2	12	158.25	1.8	379	42	71	71	1.8	5.0		32.00	95.0
	15	159.73	1.8	384	42	71	71	1.8	5.0		32.10	68.2
	18	161.80	1.8	385	42	71	71	1.8	5.0		32.12	95.7
	21	163.90	1.8	385	41	71	70	1.8	5.0		32.12	97.2
3	24	166.00	1.8	387	41	70	70	1.8	5.0		32.16	97.3
	27	168.10	1.8	387	41	70	70	1.8	5.0		32.16	97.5
	30	170.21	1.8	387	41	70	70	1.8	5.0		32.16	97.9
	33	172.33	1.8	386	41	70	70	1.8	5.0		32.14	98.4
4	36	174.42	2	388	43	70	71	2	6.0		33.92	96.9
	39	176.62	2	387	44	70	71	2	6.0		33.90	96.9
	42	178.85	2	387	42	70	71	2	6.0		33.90	98.1
	45	181.10	2	388	42	70	71	2	6.0		33.92	99.0
5	48	183.34	2	388	43	70	71	2	6.0		33.92	98.6
	51	185.60	2	386	42	70	71	2	6.0		33.88	99.5
	54	187.80	2	387	45	71	71	2	6.0		33.90	96.8
	57	190.04	2	385	43	71	72	2	6.0		33.86	98.5
6	60	192.27	2	386	44	71	72	2	6.0		33.88	97.8
	63	194.50	1.8	385	46	71	72	1.8	6.0		32.12	97.9
	66	196.67	1.8	385	48	71	72	1.8	6.0		32.12	100.3
	69	198.80	1.8	385	45	71	72	1.8	6.0		32.12	98.5
7	72	200.91	1.5	387	45	71	72	1.5	6.0		29.35	97.5
	75	202.91	1.5	388	50	71	72	1.5	6.0		29.37	101.3
	78	204.85	1.5	386	48	71	72	1.5	6.0		29.34	98.3

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	1 - SVOC	**Test Location:**	Incinerator Exhaust Stack
Date:	March 5, 2024	**Operator:**	JG

Pitot Factor	0.843	**Filter (mg)**	0
DGMCF	0.992	**Probe (mg)**	0
Barometric Pressure	29.29 "Hg	**CWTR (g)**	3221.1
Static Pressure	0.660 "H_2O	**WCBDA (g)**	13.1
Nozzle	0.253 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.18 ft³
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.96
CO2%	9.05
COppm	67.9

Measured H2O
48.3 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	81	206.80	1.5	388	51	71	72	1.5	6.0		29.37	**98.7**
8	84	208.75	1.5	385	48	71	72	1.5	6.0		29.32	**98.8**
	87	210.67	1.5	382	47	71	72	1.5	6.0		29.27	**97.2**
	90	212.66	1.5	383	48	71	72	1.5	6.0		29.28	**100.5**
	93	214.61	1.4	382	48	71	72	1.4	5.0		28.27	**98.6**
9	96	216.50	1.4	384	48	71	72	1.4	5.0		28.31	**98.8**
	99	218.40	1.4	380	50	71	72	1.4	5.0		28.24	**99.4**
	102	220.21	1.4	381	48	71	72	1.4	5.0		28.26	**94.5**
	105	222.08	1.4	380	47	71	73	1.4	5.0		28.24	**97.7**
10	108	223.95	1.4	381	48	71	73	1.4	5.0		28.26	**97.5**
	111	225.83	1.4	380	50	71	73	1.4	5.0		28.24	**98.1**
	114	227.70	1.4	381	49	71	72	1.4	5.0		28.26	**97.5**
	117	229.60	1.4	381	50	71	73	1.4	5.0		28.26	**99.3**
	120	231.46										**97.1**

ORTECH Consulting Inc.

Plant:	Clean Harbors
Plant Location:	Corunna, ON
Test Location:	Incinerator Exhaust Stack
Test No.:	2 - SVOC
Date:	March 6, 2024

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.847	
DGM CORRECTION FACTOR	0.963	
NOZZLE DIAMETER	6.40	mm
DRY REF GAS VOLUME SAMPLED	4.981	m^3
AVGERGE ISOKINETICITY	101.8	%
STACK DIAMETER	1.47	m
LENGTH	0.00	m
WIDTH	0.00	m
AREA OF STACK or DUCT	1.70	m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	192.3	^oC
AVERAGE GAS MOISTURE BY VOLUME	48.7	%
AVERAGE GAS VELOCITY	32.60	m/s
BAROMETRIC PRESSURE (Station)	99.628	Kpa
STATIC PRESSURE	0.164	Kpa
ABSOLUTE GAS PRESSURE	99.792	Kpa
OXYGEN CONCENTRATION	8.48	%
CARBON DIOXIDE CONCENTRATION	9.64	%
CARBON MONOXIDE CONCENTRATION	42.8	ppm

FLOWRATE

ACTUAL GAS FLOWRATE	55.57	m^3/s
DRY REF GAS FLOWRATE	17.97	Rm^3/s
DRY ADJ GAS FLOWRATE	22.55	Rm^3/s
WET REF GAS FLOWRATE	35.06	Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0	mg
	-FILTER	0	mg
	-TOTAL	0	mg
DRY REF GAS VOLUME SAMPLED		4.981	m^3
PARTICULATE CONC. - ACTUAL		0.000	mg/m^3
PARTICULATE CONC. - DRY REF		0.000	mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000	mg/m^3
PARTICULATE CONC. - WET REF		0.000	mg/m^3
PARTICULATE EMISSION RATE		0.000000	g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	2 - SVOC	**Test Location:**	Incinerator Exhaust Stack
Date:	March 6, 2024	**Operator:**	JG

Pitot Factor	0.847	**Filter (mg)**	0
DGMCF	0.963	**Probe (mg)**	0
Barometric Pressure	29.42 "Hg	**CWTR (g)**	3467.4
Static Pressure	0.660 "H_2O	**WCBDA (g)**	12.9
Nozzle	0.2521 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.54 ft^3
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.48
CO2%	9.64
COppm	42.8

Measured H2O
48.7 %

				Temperatures								
Point	Time	DGM Reading	ΔP "H2O	Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	32.32	1.7	352	18	28	87	1.6	3.0		30.68	
	3	34.43	1.7	354	23	38	36	1.7	4.0		30.72	**99.3**
	6	36.54	1.7	355	21	38	35	1.6	4.0		30.74	**103.5**
	9	38.63	1.7	362	25	47	44	1.6	4.0		30.87	**102.7**
2	12	40.72	1.9	364	29	49	46	1.8	5.5		32.67	**101.3**
	15	43.00	1.9	364	29	49	46	1.8	5.5		32.67	**104.3**
	18	45.27	1.9	372	37	58	55	1.8	5.5		32.83	**103.8**
	21	47.55	1.9	375	38	61	58	1.8	5.5		32.89	**103.0**
3	24	49.80	1.9	375	38	61	58	1.8	5.5		32.89	**101.2**
	27	52.05	1.9	377	40	66	61	1.8	5.5		32.93	**101.2**
	30	54.35	1.9	376	40	66	62	1.8	5.5		32.91	**102.8**
	33	56.77	1.9	376	40	66	62	1.8	5.5		32.91	**108.0**
4	36	58.93	1.9	378	40	66	63	1.8	5.5		32.95	**96.4**
	39	61.23	1.9	377	40	68	64	1.8	5.5		32.93	**102.6**
	42	63.44	2	377	40	68	64	1.9	5.5		33.79	**98.3**
	45	65.76	2	377	40	70	66	1.9	5.5		33.79	**100.6**
5	48	68.08	2	378	40	70	67	1.9	5.5		33.81	**100.2**
	51	70.35	2	379	41	71	67	2	5.5		33.83	**98.0**
	54	72.70	2	378	41	71	70	2	5.5		33.81	**101.5**
	57	75.05	2	380	41	72	70	2	5.5		33.85	**101.1**
6	60	77.36	2.2	380	41	72	70	2.1	6.0		35.50	**99.4**
	63	79.80	2.2	379	41	73	69	2.1	6.0		35.48	**100.1**
	66	82.25	2.2	379	41	73	69	2.1	6.0		35.48	**100.5**
	69	84.69	2.2	378	40	73	70	2.1	6.0		35.46	**100.1**
7	72	87.14	2.1	380	41	74	70	2.1	6.0		34.68	**100.3**
	75	89.63	2.1	378	41	74	71	2.1	6.0		34.64	**104.4**
	78	92.01	2.1	379	41	74	72	2.1	6.0		34.66	**99.6**
	81	94.46	2.1	379	41	74	72	2.1	6.0		34.66	**102.5**
8	84	96.90	2.1	379	40	75	73	2.1	6.0		34.66	**102.1**
	87	99.34	1.7	379	41	74	72	1.7	5.0		31.19	**101.9**
	90	101.62	1.7	379	41	74	72	1.7	5.0		31.19	**105.9**
	93	103.85	1.7	380	42	75	73	1.7	5.0		31.21	**103.6**
9	96	106.11	1.5	380	44	76	74	1.5	4.5		29.31	**104.8**
	99	108.23	1.5	380	44	76	74	1.5	4.5		29.31	**104.4**

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	2 - SVOC	**Test Location:**	Incinerator Exhaust Stack
Date:	March 6, 2024	**Operator:**	JG

Pitot Factor	0.847	**Filter (mg)**	0
DGMCF	0.963	**Probe (mg)**	0
Barometric Pressure	29.42 "Hg	**CWTR (g)**	3467.4
Static Pressure	0.660 "H_2O	**WCBDA (g)**	12.9
Nozzle	0.2521 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.54 ft³
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.48
CO2%	9.64
COppm	42.8

Measured H2O
48.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	102	110.35	1.5	380	44	76	74	1.5	4.5		29.31	**104.4**
	105	112.47	1.5	380	45	76	75	1.5	4.5		29.31	**104.4**
10	108	114.60	1.5	380	43	77	75	1.5	4.5		29.31	**104.8**
	111	116.76	1.5	380	43	77	75	1.4	4.5		29.31	**106.2**
	114	118.81	1.5	381	43	77	75	1.4	4.5		29.33	**100.8**
	117	120.90	1.5	380	44	77	76	1.4	4.5		29.31	**102.8**
	120	122.94								0.54		**100.2**
1	0	123.48	1.5	379	41	78	77	1.4	3.0		29.30	
	3	125.46	1.5	380	40	78	77	1.5	4.0		29.31	**97.0**
	6	127.45	1.5	380	40	78	77	1.5	4.0		29.31	**97.6**
	9	129.52	1.5	380	40	76	76	1.5	4.0		29.31	**101.5**
2	12	131.55	1.5	379	39	76	76	1.5	4.0		29.30	**99.8**
	15	133.63	1.6	383	40	76	76	1.6	4.0		30.33	**102.2**
	18	135.75	1.6	377	40	75	76	1.6	4.0		30.22	**101.1**
	21	137.89	1.6	379	39	75	76	1.6	4.0		30.26	**101.8**
3	24	140.04	1.6	377	39	75	76	1.6	4.0		30.22	**102.4**
	27	142.18	1.6	378	38	75	76	1.6	4.0		30.24	**101.8**
	30	144.31	1.6	378	39	75	76	1.6	4.0		30.24	**101.4**
	33	146.45	1.6	378	39	76	76	1.6	4.0		30.24	**101.9**
4	36	148.60	1.6	378	39	76	76	1.6	4.0		30.24	**102.3**
	39	150.74	1.8	380	39	76	76	1.8	5.0		32.11	**101.8**
	42	152.97	1.8	380	39	76	76	1.8	5.0		32.11	**100.2**
	45	155.23	1.8	380	39	76	76	1.8	5.0		32.11	**101.5**
5	48	157.48	1.8	380	39	76	76	1.8	5.0		32.11	**101.1**
	51	159.76	1.8	380	39	76	76	1.8	5.0		32.11	**102.4**
	54	162.00	1.8	380	40	77	77	1.8	5.0		32.11	**100.6**
	57	164.25	1.8	381	39	77	77	1.8	5.0		32.13	**100.9**
6	60	166.54	1.8	381	38	77	77	1.8	5.0		32.13	**102.7**
	63	168.78	2.1	385	41	78	77	2.1	6.0		34.79	**100.5**
	66	171.24	2.1	380	41	77	77	2.1	6.0		34.68	**102.4**
	69	173.70	2.1	381	39	77	77	2.1	6.0		34.70	**102.2**
7	72	176.18	2.1	381	39	77	77	2.1	6.0		34.70	**103.1**
	75	178.68	2.4	381	40	77	77	2.3	6.0		37.10	**103.9**
	78	181.20	2.4	381	40	77	77	2.3	6.0		37.10	**98.0**

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	2 - SVOC	**Test Location:**	Incinerator Exhaust Stack
Date:	March 6, 2024	**Operator:**	JG

Pitot Factor	0.847	**Filter (mg)**	0
DGMCF	0.963	**Probe (mg)**	0
Barometric Pressure	29.42 "Hg	**CWTR (g)**	3467.4
Static Pressure	0.660 "H_2O	**WCBDA (g)**	12.9
Nozzle	0.2521 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	0.54 ft³
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.48
CO2%	9.64
COppm	42.8

Measured H2O
48.7 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	81	183.80	2.1	381	39	77	77	2.1	6.0		34.70	**101.1**
8	84	186.31	2.1	383	39	77	77	2.1	6.0		34.75	**104.3**
	87	188.84	2.1	382	38	78	78	2.1	6.0		34.72	**105.3**
	90	191.33	2.1	383	39	78	78	2.1	6.0		34.75	**103.4**
	93	193.84	2.1	382	39	78	78	2.1	6.0		34.72	**104.3**
9	96	196.32	2.1	383	39	78	78	2.1	6.0		34.75	**103.0**
	99	198.77	2.1	385	39	78	78	2.1	6.0		34.79	**101.8**
	102	201.20	2.1	385	39	78	78	2.1	6.0		34.79	**101.1**
	105	203.66	2.1	385	39	78	78	2.1	6.0		34.79	**102.3**
10	108	206.02	2.1	383	39	78	78	2.1	6.0		34.75	**98.1**
	111	208.50	2.1	383	38	79	79	2.1	6.0		34.75	**103.0**
	114	210.94	2.1	383	38	79	79	2.1	6.0		34.75	**101.2**
	117	213.37	2.1	383	38	79	79	2.1	6.0		34.75	**100.7**
	120	215.83										**102.0**

ORTECH Consulting Inc.

Plant:	Clean Harbors
Plant Location:	Corunna, ON
Test Location:	Incinerator Exhaust Stack
Test No.:	3 - SVOC
Date:	March 7, 2024

STACK GAS SAMPLING PARAMETERS

PITOT TUBE COEFFICIENT	0.847	
DGM CORRECTION FACTOR	0.963	
NOZZLE DIAMETER	6.40	mm
DRY REF GAS VOLUME SAMPLED	5.079	m^3
AVGERGE ISOKINETICITY	100.2	%
STACK DIAMETER	1.47	m
LENGTH	0.00	m
WIDTH	0.00	m
AREA OF STACK or DUCT	1.70	m^3

STACK GAS PHYSICAL PARAMETERS

AVERAGE GAS TEMPERATURE	190.9	°C
AVERAGE GAS MOISTURE BY VOLUME	48.0	%
AVERAGE GAS VELOCITY	33.09	m/s
BAROMETRIC PRESSURE (Station)	99.966	Kpa
STATIC PRESSURE	0.164	Kpa
ABSOLUTE GAS PRESSURE	100.131	Kpa
OXYGEN CONCENTRATION	8.59	%
CARBON DIOXIDE CONCENTRATION	9.04	%
CARBON MONOXIDE CONCENTRATION	68.4	ppm

FLOWRATE

ACTUAL GAS FLOWRATE	56.40	m^3/s
DRY REF GAS FLOWRATE	18.61	Rm^3/s
DRY ADJ GAS FLOWRATE	23.14	Rm^3/s
WET REF GAS FLOWRATE	35.81	Rm^3/s

PARTICULATE EMISSION DATA

PARTICULATE COLLECTED	-PROBE	0	mg
	-FILTER	0	mg
	-TOTAL	0	mg
DRY REF GAS VOLUME SAMPLED		5.079	m^3
PARTICULATE CONC. - ACTUAL		0.000	mg/m^3
PARTICULATE CONC. - DRY REF		0.000	mg/m^3
PARTICULATE CONC. - DRY ADJ		0.000	mg/m^3
PARTICULATE CONC. - WET REF		0.000	mg/m^3
PARTICULATE EMISSION RATE		0.000000	g/s

Note: * Reference conditions refers to 25 deg C (77 deg F) and 101.325 kPa (29.92 in. Hg)

Note: Dry Adj condition refers to 25 deg C (77 deg F)and 1 atmosphere, adjusted to 11% oxygen by volume

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	3 - SVOC	**Test Location:**	Incinerator Exhaust Stack
Date:	March 7, 2024	**Operator:**	JG

Pitot Factor	0.847	**Filter (mg)**	0
DGMCF	0.963	**Probe (mg)**	0
Barometric Pressure	29.52 "Hg	**CWTR (g)**	3433.3
Static Pressure	0.660 "H_2O	**WCBDA (g)**	16.6
Nozzle	0.2521 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	2.1 ft^3
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.59
CO2%	9.04
COppm	68.4

Measured H2O
48.0 %

Point	Time	DGM Reading	ΔP "H2O	Temperatures Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
1	0	16.46	1.6	387	48	56	55	1.5	3.0		30.33	
	3	18.60	1.6	385	48	59	57	1.5	3.0		30.29	**105.2**
	6	20.65	1.6	383	48	60	58	1.5	3.0		30.25	**100.2**
	9	22.70	1.6	384	48	61	59	1.5	3.0		30.27	**99.8**
2	12	24.76	1.6	383	47	61	59	1.5	3.0		30.25	**100.2**
	15	26.81	1.6	382	47	61	59	1.5	3.0		30.24	**99.7**
	18	28.86	1.6	382	47	63	60	1.5	3.0		30.24	**99.6**
	21	30.91	1.6	381	48	63	61	1.5	3.0		30.22	**99.3**
3	24	32.96	1.6	381	42	64	61	1.5	3.0		30.22	**99.2**
	27	35.02	1.6	379	42	64	62	1.5	3.0		30.18	**99.5**
	30	37.07	1.6	381	42	64	63	1.5	3.0		30.22	**98.8**
	33	39.14	1.6	380	42	66	63	1.5	3.0		30.20	**99.8**
4	36	41.19	1.8	380	42	67	64	1.7	4.0		32.03	**98.6**
	39	43.34	1.8	380	42	67	64	1.7	4.0		32.03	**97.4**
	42	45.53	2	381	42	67	64	2	5.0		33.78	**99.2**
	45	47.90	2	380	43	68	65	2	5.0		33.76	**102.0**
5	48	50.25	2	380	44	69	66	2	5.0		33.76	**100.9**
	51	52.60	2	380	42	69	66	2	5.0		33.76	**100.7**
	54	54.95	2	379	43	69	66	2	5.0		33.74	**100.7**
	57	57.31	2	379	44	70	67	2	5.0		33.74	**101.0**
6	60	59.66	2	377	45	71	68	2	5.0		33.70	**100.4**
	63	62.02	2.2	380	45	71	68	2.2	5.0		35.41	**100.5**
	66	64.47	2.2	377	44	71	68	2.2	5.0		35.35	**99.7**
	69	66.94	2.2	377	43	72	69	2.2	5.0		35.35	**100.4**
7	72	69.42	2.2	378	43	72	69	2.2	5.0		35.37	**100.6**
	75	71.90	2.2	376	45	73	70	2.2	5.0		35.33	**100.7**
	78	74.38	2.2	377	45	73	70	2.2	5.0		35.35	**100.3**
	81	76.85	2.2	376	44	73	71	2.2	5.0		35.33	**100.0**
8	84	79.32	2.2	376	44	74	71	2.2	5.0		35.33	**99.8**
	87	81.80	2.2	375	44	74	71	2.2	5.0		35.31	**100.2**
	90	84.29	2.2	375	44	74	72	2.2	5.0		35.31	**100.5**
	93	86.77	2.2	377	44	75	72	2.2	5.0		35.35	**100.0**
9	96	89.26	2.2	375	44	75	73	2.2	5.0		35.31	**100.4**
	99	91.74	2.2	376	45	75	73	2.2	5.0		35.33	**99.8**

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	3 - SVOC	**Test Location:**	Incinerator Exhaust Stack
Date:	March 7, 2024	**Operator:**	JG

Pitot Factor	0.847	**Filter (mg)**	0
DGMCF	0.963	**Probe (mg)**	0
Barometric Pressure	29.52 "Hg	**CWTR (g)**	3433.3
Static Pressure	0.660 "H_2O	**WCBDA (g)**	16.6
Nozzle	0.2521 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	2.1 ft³
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.59
CO2%	9.04
COppm	68.4

Measured H2O
48.0 %

				Temperatures								
Point	Time	DGM Reading	ΔP "H2O	Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	102	94.24	2.2	376	45	76	74	2.2	5.0		35.33	**100.7**
	105	96.70	2.2	377	45	76	74	2.2	5.0		35.35	**98.9**
10	108	99.18	2.2	378	44	76	74	2.2	5.0		35.37	**99.7**
	111	101.67	2.2	376	45	77	74	2.2	5.0		35.33	**100.2**
	114	104.15	2.2	376	45	77	75	2.2	5.0		35.33	**99.6**
	117	106.66	2.2	375	46	77	75	2.2	5.0		35.31	**100.7**
	120	109.18								2.1		**101.0**
1	0	111.28	1.8	371	50	78	77	1.8	4.0		31.86	
	3	113.68	1.8	371	48	78	77	1.8	4.0		31.86	**105.7**
	6	115.95	1.8	371	46	78	77	1.8	4.0		31.86	**100.0**
	9	118.26	1.8	370	46	78	77	1.8	4.0		31.84	**101.8**
2	12	120.55	1.8	370	44	77	77	1.8	4.0		31.84	**100.8**
	15	122.83	1.8	370	42	77	77	1.8	4.0		31.84	**100.5**
	18	125.10	2	370	42	77	77	2	5.0		33.56	**100.0**
	21	127.50	2	371	43	77	77	2	5.0		33.58	**100.4**
3	24	129.90	2	370	42	77	77	2	5.0		33.56	**100.5**
	27	132.21	2	371	43	77	75	2	5.0		33.58	**96.6**
	30	134.57	2	370	42	78	77	2	5.0		33.56	**99.0**
	33	136.95	2	371	42	78	77	2	5.0		33.58	**99.5**
4	36	139.33	2	370	41	78	77	2	5.0		33.56	**99.5**
	39	141.70	2	371	41	78	76	2	5.0		33.58	**99.0**
	42	144.05	2	372	41	78	76	2	5.0		33.60	**98.4**
	45	146.45	2	371	41	78	77	2	5.0		33.58	**100.5**
5	48	148.84	2	372	43	78	77	2	5.0		33.60	**99.9**
	51	151.23	2	370	43	79	77	2	5.0		33.56	**100.0**
	54	153.62	2	371	42	79	77	2	5.0		33.58	**99.8**
	57	156.02	2	372	42	79	77	2	5.0		33.60	**100.3**
6	60	158.40	2.2	373	42	79	77	2.2	6.0		35.26	**99.5**
	63	160.90	2.2	373	50	79	77	2.2	6.0		35.26	**99.8**
	66	163.43	2.2	373	42	79	77	2.2	6.0		35.26	**100.9**
	69	165.97	2.2	373	41	79	77	2.2	6.0		35.26	**101.3**
7	72	168.51	2	373	41	79	77	2	2.0		33.62	**101.3**
	75	170.92	2	373	41	79	77	2	2.0		33.62	**100.8**
	78	173.33	2	373	44	79	77	2	2.0		33.62	**100.8**

ORTECH Consulting Inc.

Plant:	Clean Harbors	**Plant Location:**	Corunna, ON
Test No.:	3 - SVOC	**Test Location:**	Incinerator Exhaust Stack
Date:	March 7, 2024	**Operator:**	JG

Pitot Factor	0.847	**Filter (mg)**	0
DGMCF	0.963	**Probe (mg)**	0
Barometric Pressure	29.52 "Hg	**CWTR (g)**	3433.3
Static Pressure	0.660 "H_2O	**WCBDA (g)**	16.6
Nozzle	0.2521 inches		
Stack Diameter	4.833 ft	**Leak Check Volume**	2.1 ft^3
Length	0.000 ft	**Reading Interval**	3 minutes
Width	0.000 ft	**Number of Ports**	2
		Number of points / Port	10

Combustion Gases	
O2%	8.59
CO2%	9.04
COppm	68.4

Measured H2O
48.0 %

				Temperatures								
Point	Time	DGM Reading	ΔP "H2O	Stack °F	Imp. Out °F	DGM Out °F	DGM In °F	ΔH "H2O	Vacuum "Hg	Leak Check Volume	Velocity m/s	Isokinetic %
	81	175.75	2	373	46	78	77	2	2.0		33.62	**101.2**
8	84	178.15	2	373	46	78	77	2	2.0		33.62	**100.5**
	87	180.55	2	374	50	78	77	2	6.0		33.64	**100.5**
	90	182.94	2	375	50	78	77	2	6.0		33.66	**100.1**
	93	185.34	2	373	52	78	77	2	6.0		33.62	**100.6**
9	96	187.74	1.6	374	51	78	77	1.6	5.0		30.09	**100.5**
	99	189.94	1.6	375	52	77	76	1.6	5.0		30.11	**102.9**
	102	192.05	1.6	375	52	77	76	1.6	5.0		30.11	**99.0**
	105	194.23	1.6	376	53	78	77	1.6	5.0		30.13	**102.3**
10	108	196.33	1.6	376	53	78	76	1.6	5.0		30.13	**98.4**
	111	198.46	1.6	376	53	78	76	1.6	5.0		30.13	**99.9**
	114	200.58	1.6	375	54	78	76	1.6	5.0		30.11	**99.4**
	117	202.70	1.6	376	54	77	77	1.6	5.0		30.13	**99.3**
	120	204.82										**99.4**

APPENDIX 19

ORTECH CEM Data
(29 pages)

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 1 - March 5, 2024

Time	O2 %	CO2 %	SO2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
09:36	9.97	7.68	137	54.6	44.2		66.4	67.3
09:37	9.78	7.84	141	85.6	37.8		57.5	59.7
09:38	9.85	7.79	140	117.7	31.6		65.6	65.6
09:39	10.05	7.61	164	79.2	40.2		61.3	64.0
09:40	10.00	7.69	198	68.7	37.0		67.0	68.2
09:41	10.24	8.90	196	66.4	37.9		72.6	65.0
09:42	10.05	9.16	194	59.4	37.1		85.8	84.7
09:43	10.02	9.17	198	81.0	37.0		82.3	83.2
09:44	9.81	9.36	212	131.6	36.5		69.9	72.1
09:45	9.94	9.25	210	124.7	35.8	37.5	83.6	84.2
09:46	10.17	8.99	205	92.1	35.9	36.7	76.8	79.7
09:47	10.04	9.17	196	81.0	35.2	36.4	82.8	85.0
09:48	10.29	8.87	195	93.6	34.4	36.7	79.5	78.6
09:49	10.13	9.09	191	74.6	33.0	36.0	83.1	84.6
09:50	10.13	9.06	191	73.2	32.9	35.6	84.6	85.3
09:51	9.99	9.20	196	103.8	32.4	35.0	72.2	74.9
09:52	10.06	9.15	194	113.6	31.7	34.5	81.9	80.6
09:53	10.22	8.96	196	79.3	31.8	34.0	82.3	84.0
09:54	10.07	9.15	194	64.7	32.0	33.5	86.9	88.0
09:55	10.32	8.87	196	73.2	30.7	33.0	82.2	83.5
09:56	10.16	9.06	192	60.1	30.7	32.5	86.4	88.8
09:57	10.14	9.07	191	72.7	30.1	32.0	82.8	83.1
09:58	9.90	9.30	202	117.9	29.5	31.5	68.7	69.7
09:59	10.04	9.18	200	128.5	29.0	31.1	78.6	78.9
10:00	10.21	8.99	198	98.5	26.3	30.4	76.2	78.0
10:01	9.93	9.11	192	88.1	26.3	29.8	82.4	83.6
10:02	9.74	8.87	192	87.2	26.2	29.3	77.5	79.3
10:03	9.56	9.05	192	72.2	27.4	28.8	87.2	87.9
10:04	9.56	9.03	192	75.2	27.1	28.3	82.2	83.4
10:05	9.44	9.17	198	117.5	26.7	27.9	68.5	71.0
10:06	9.50	9.10	196	132.3	26.5	27.5	76.6	77.0
10:07	9.74	8.82	193	105.9	26.2	27.1	72.8	75.1
10:08	9.58	9.03	190	95.0	26.5	26.8	76.1	77.8
10:09	9.79	8.78	193	101.7	23.4	26.3	72.4	73.9
10:10	9.69	8.93	187	89.6	19.6	25.6	74.6	76.0
10:11	9.69	8.93	185	92.6	18.0	24.8	76.0	75.2
10:12	9.50	9.11	191	150.7	17.6	23.9	65.0	68.0
10:13	9.58	9.04	190	156.2	29.4	24.1	72.7	73.0
10:14	9.73	8.85	192	115.4	33.7	24.8	74.1	75.4
10:15	9.69	8.95	186	97.0	33.8	25.5	79.3	80.0
10:16	9.90	8.68	183	100.7	32.1	26.0	74.1	73.7
10:17	9.74	8.89	180	95.5	32.0	26.6	77.2	77.4
10:18	9.72	8.86	181	97.9	31.8	27.1	75.8	76.2
10:19	9.58	9.05	186	123.8	31.7	28.0	67.1	68.5
10:20	9.68	8.93	184	131.8	31.5	29.2	77.2	78.0
10:21	9.84	8.76	183	98.5	30.7	30.4	76.3	77.5
10:22	9.69	8.92	178	85.1	30.6	31.7	79.6	82.5
10:23	9.92	8.63	178	112.6	30.1	31.8	70.3	69.9
10:24	9.77	8.82	172	94.6	30.6	31.5	76.1	76.2
10:25	9.72	8.87	172	94.9	30.5	31.1	75.0	76.0
10:26	9.53	9.06	182	126.1	30.2	31.0	69.3	70.5
10:27	9.61	8.98	184	138.2	29.9	30.7	72.8	74.2
10:28	9.80	8.75	182	128.1	29.2	30.5	68.8	70.3
10:29	9.72	8.89	176	115.1	28.8	30.2	74.4	77.8
10:30	9.94	8.63	174	126.4	28.2	29.9	70.3	70.8
10:31	9.80	8.81	170	102.6	27.8	29.6	75.1	76.3
10:32	9.80	8.78	169	105.2	27.0	29.2	76.4	76.8
10:33	9.63	8.97	176	133.8	26.6	28.9	66.2	68.8

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 1 - March 5, 2024

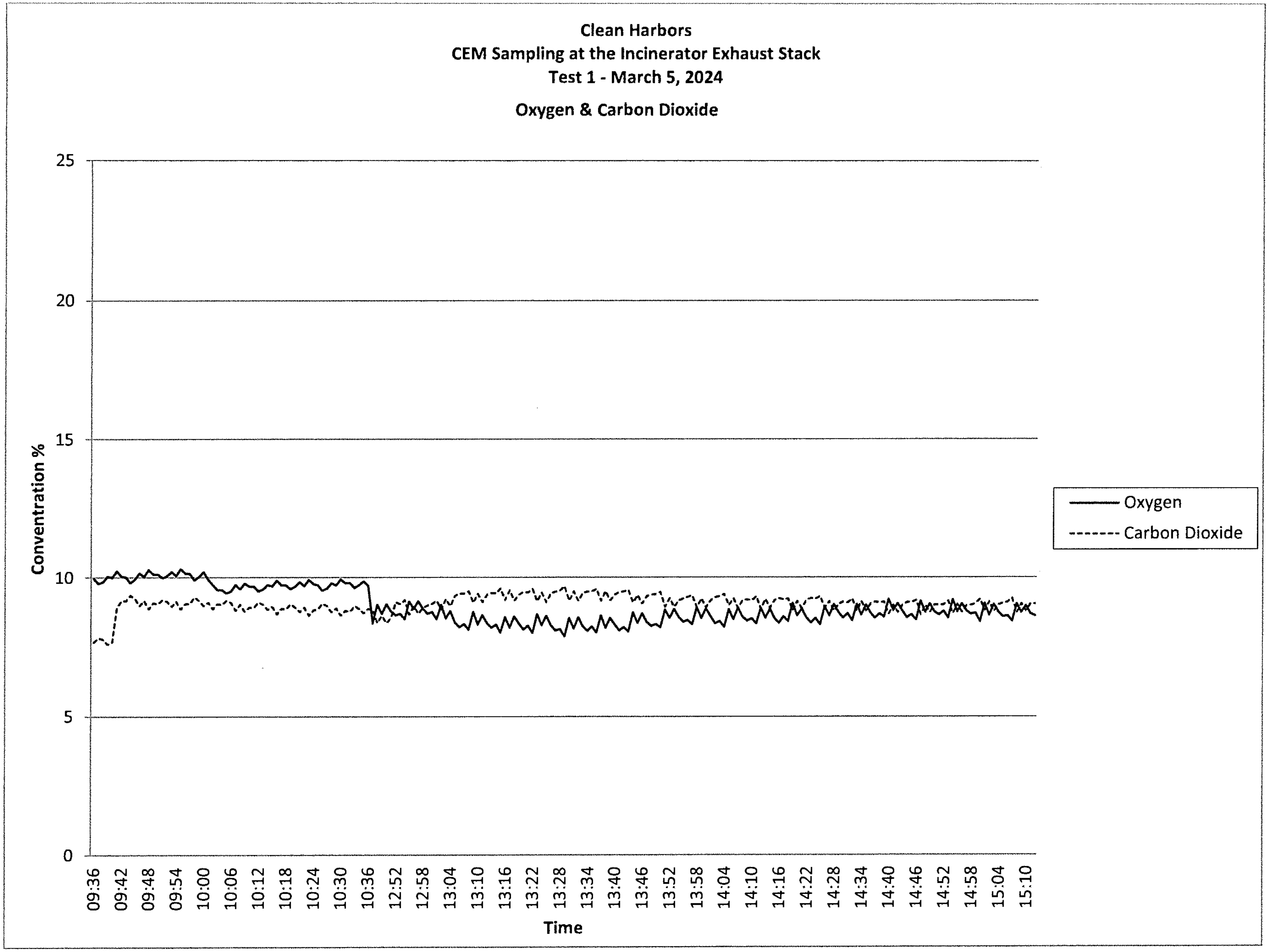
Time	O2 %	CO2 %	SO2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
10:34	9.73	8.88	173	150.6	26.2	28.4	77.4	78.0
10:35	9.86	8.71	171	119.7	25.6	27.9	71.4	72.5
10:36	9.70	8.88	167	101.9	25.6	27.5	74.7	75.4
12:47	8.35	8.84	210	51.6	33.8		110.2	112.9
12:48	9.02	8.37	197	42.0	33.2		108.5	111.8
12:49	8.69	8.63	193	42.2	38.5		110.0	116.4
12:50	9.03	8.36	187	43.8	36.1		105.5	109.7
12:51	8.78	8.55	189	42.8	32.5		108.1	112.1
12:52	8.64	9.11	194	45.6	30.7		106.0	109.8
12:53	8.69	9.04	189	83.6	31.6		87.1	92.1
12:54	8.50	9.20	200	63.0	29.9		98.8	104.8
12:55	9.14	8.66	196	62.8	30.2		86.9	92.5
12:56	8.87	8.97	185	72.0	29.9	32.6	84.2	88.3
12:57	9.14	8.70	178	72.9	30.2	32.3	80.9	83.9
12:58	8.88	8.91	174	84.8	32.7	32.2	81.4	85.1
12:59	8.70	9.00	175	86.8	30.6	31.4	83.3	84.5
13:00	8.75	9.05	186	128.6	32.3	31.1	71.0	73.3
13:01	8.50	9.17	181	83.3	28.9	30.7	86.7	89.4
13:02	9.01	8.85	180	86.2	29.0	30.5	79.6	83.9
13:03	8.53	9.23	185	74.2	31.7	30.5	85.5	88.9
13:04	8.79	8.97	190	61.0	29.1	30.5	87.2	88.5
13:05	8.38	9.34	201	58.0	28.5	30.3	91.6	95.6
13:06	8.21	9.42	209	57.3	29.5	30.2	95.7	99.1
13:07	8.32	9.42	227	98.5	32.5	30.5	79.8	83.2
13:08	8.13	9.51	217	57.9	32.6	30.5	97.0	101.1
13:09	8.76	9.10	210	66.1	32.6	30.7	88.1	92.6
13:10	8.31	9.41	210	53.4	32.6	30.7	92.5	97.1
13:11	8.64	9.11	213	55.0	29.3	30.7	90.2	93.6
13:12	8.36	9.38	212	46.8	28.5	30.7	96.0	100.1
13:13	8.19	9.44	215	49.4	29.3	30.4	102.2	104.1
13:14	8.31	9.44	231	97.0	32.4	30.8	78.8	82.7
13:15	8.01	9.61	224	58.9	28.0	30.7	94.6	101.4
13:16	8.57	9.19	230	54.3	28.6	30.6	92.2	94.7
13:17	8.20	9.53	236	42.8	30.2	30.4	95.7	101.5
13:18	8.59	9.17	230	46.4	29.3	30.1	91.0	92.2
13:19	8.34	9.38	224	38.2	31.5	30.0	100.5	104.6
13:20	8.13	9.47	224	42.2	28.4	29.5	99.6	106.2
13:21	8.27	9.46	244	66.8	30.1	29.6	88.9	94.6
13:22	8.00	9.59	232	45.4	27.6	29.5	101.6	105.1
13:23	8.67	9.14	230	38.1	27.8	29.4	99.1	100.2
13:24	8.28	9.45	226	35.3	28.2	29.0	103.6	108.8
13:25	8.62	9.11	222	35.9	27.1	28.9	101.2	103.7
13:26	8.28	9.44	223	34.5	29.6	29.0	104.3	109.2
13:27	8.10	9.49	228	37.4	29.0	28.9	101.7	108.2
13:28	8.14	9.54	250	66.4	29.3	28.9	86.6	90.0
13:29	7.88	9.68	244	42.7	27.4	28.4	103.4	109.2
13:30	8.54	9.16	241	40.0	26.3	28.2	96.6	102.0
13:31	8.15	9.49	236	31.8	26.8	27.9	105.3	110.8
13:32	8.56	9.16	226	35.5	33.5	28.5	101.6	103.7
13:33	8.24	9.45	223	34.0	36.8	29.4	103.5	109.1
13:34	8.08	9.49	227	41.5	37.2	30.3	103.1	109.3
13:35	8.23	9.49	248	71.6	35.2	31.1	88.9	91.7
13:36	8.02	9.58	235	44.2	34.2	31.5	99.0	103.0
13:37	8.63	9.16	232	56.3	33.6	32.0	88.1	95.7
13:38	8.18	9.50	235	34.8	34.5	32.5	101.0	107.9
13:39	8.54	9.17	235	30.4	34.0	33.2	102.8	104.9
13:40	8.30	9.38	230	25.6	34.6	34.0	111.0	113.8
13:41	8.09	9.47	231	31.2	35.8	34.9	109.1	113.7

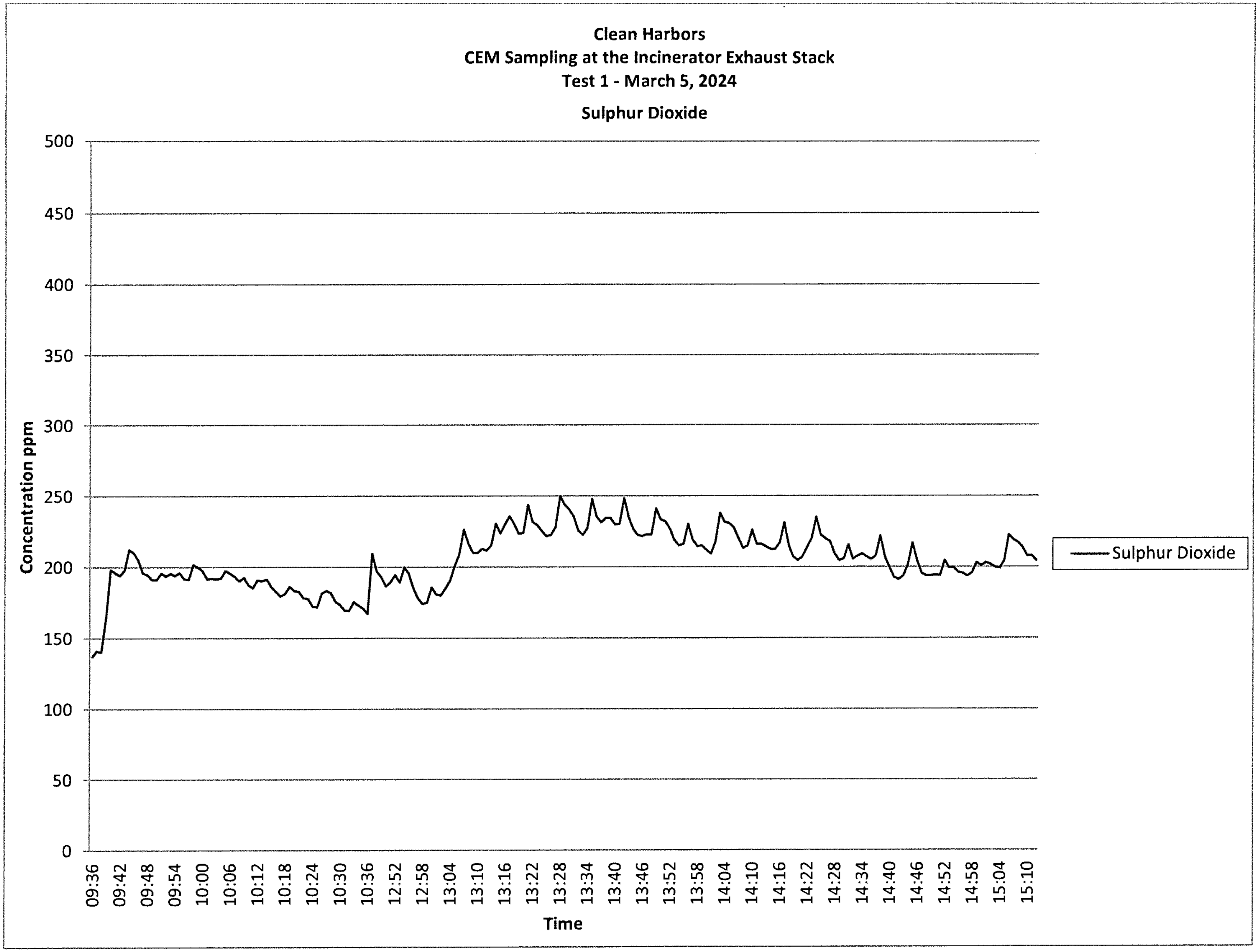
Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 1 - March 5, 2024

Time	O2 %	CO2 %	SO2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
13:42	8.20	9.49	249	60.0	36.2	35.2	87.9	93.2
13:43	8.05	9.54	235	38.0	33.2	34.8	109.2	113.9
13:44	8.73	9.10	227	35.5	36.1	34.7	98.3	103.9
13:45	8.35	9.37	223	30.7	32.4	34.4	106.8	112.6
13:46	8.70	9.05	222	33.3	32.5	34.3	104.1	107.6
13:47	8.40	9.32	223	29.8	33.8	34.3	106.3	110.4
13:48	8.25	9.38	223	40.7	35.3	34.4	105.1	108.8
13:49	8.31	9.40	241	72.4	36.8	34.7	85.2	90.1
13:50	8.20	9.47	234	42.3	35.4	34.7	103.3	105.8
13:51	8.83	8.94	232	35.8	32.9	34.5	102.0	103.2
13:52	8.54	9.25	227	31.7	31.1	34.0	103.8	108.6
13:53	8.86	8.93	219	31.8	31.5	33.8	101.5	106.0
13:54	8.57	9.18	215	29.1	31.6	33.3	108.8	112.1
13:55	8.40	9.24	216	34.7	32.3	33.3	103.6	108.4
13:56	8.46	9.30	230	72.8	34.8	33.6	82.3	88.8
13:57	8.31	9.35	219	52.8	33.0	33.5	100.8	103.1
13:58	8.92	8.91	215	40.7	31.9	33.1	93.7	99.4
13:59	8.53	9.24	215	38.9	35.0	33.0	97.3	103.5
14:00	8.87	8.91	212	36.9	33.4	32.7	101.1	103.5
14:01	8.60	9.17	209	32.6	32.2	32.7	103.2	107.8
14:02	8.34	9.28	218	38.7	32.0	32.8	101.7	105.5
14:03	8.42	9.32	238	63.6	33.2	32.9	88.0	91.2
14:04	8.21	9.40	232	47.1	31.6	32.9	103.5	107.4
14:05	8.85	8.99	231	44.9	31.8	32.9	96.0	100.8
14:06	8.48	9.24	228	37.6	32.0	32.6	101.3	104.4
14:07	8.90	8.89	220	32.4	31.2	32.4	101.9	104.7
14:08	8.57	9.18	213	29.6	31.4	32.4	104.8	109.4
14:09	8.43	9.20	215	39.2	33.2	32.2	99.3	105.1
14:10	8.52	9.18	226	73.5	35.6	32.4	86.1	89.0
14:11	8.34	9.31	216	49.2	35.2	32.7	99.4	102.9
14:12	8.89	8.86	216	44.4	31.6	32.7	93.6	96.6
14:13	8.54	9.21	214	40.4	31.5	32.5	97.8	101.8
14:14	8.87	8.90	212	40.0	30.5	32.4	99.4	100.9
14:15	8.52	9.18	212	40.4	31.5	32.4	98.4	102.6
14:16	8.36	9.25	217	50.5	33.4	32.5	99.4	101.7
14:17	8.58	9.20	231	84.5	33.5	32.7	80.7	83.2
14:18	8.42	9.23	215	53.8	32.4	32.8	95.3	99.4
14:19	9.07	8.79	207	56.7	35.6	33.1	87.5	90.7
14:20	8.62	9.14	205	51.3	33.4	32.8	92.4	96.1
14:21	8.86	8.88	207	51.7	31.3	32.5	92.1	95.5
14:22	8.55	9.18	214	46.6	31.9	32.5	97.2	101.2
14:23	8.36	9.25	220	48.1	33.5	32.7	98.0	103.5
14:24	8.53	9.23	235	84.8	33.6	33.0	80.3	85.4
14:25	8.30	9.31	223	52.9	32.0	33.1	97.5	102.1
14:26	8.95	8.91	220	52.7	31.4	32.9	93.2	95.8
14:27	8.61	9.14	218	43.6	32.7	32.8	99.3	102.5
14:28	9.02	8.78	209	43.7	31.2	32.7	96.1	98.9
14:29	8.74	9.02	205	44.7	32.2	32.3	95.6	100.7
14:30	8.54	9.11	206	54.0	35.0	32.5	92.0	96.3
14:31	8.70	9.08	216	99.2	35.5	32.9	76.8	79.3
14:32	8.44	9.22	206	61.1	34.5	33.2	88.7	93.8
14:33	9.03	8.79	208	67.5	33.3	33.1	85.4	89.7
14:34	8.64	9.13	209	51.0	34.6	33.2	94.4	97.6
14:35	9.00	8.79	207	48.5	33.3	33.4	94.6	97.3
14:36	8.72	9.04	205	43.6	35.0	33.7	97.2	101.6
14:37	8.53	9.12	208	50.4	35.1	34.0	95.6	99.2
14:38	8.69	9.09	222	87.0	36.8	34.5	78.5	83.1
14:39	8.56	9.12	207	53.8	35.6	34.9	94.0	96.7

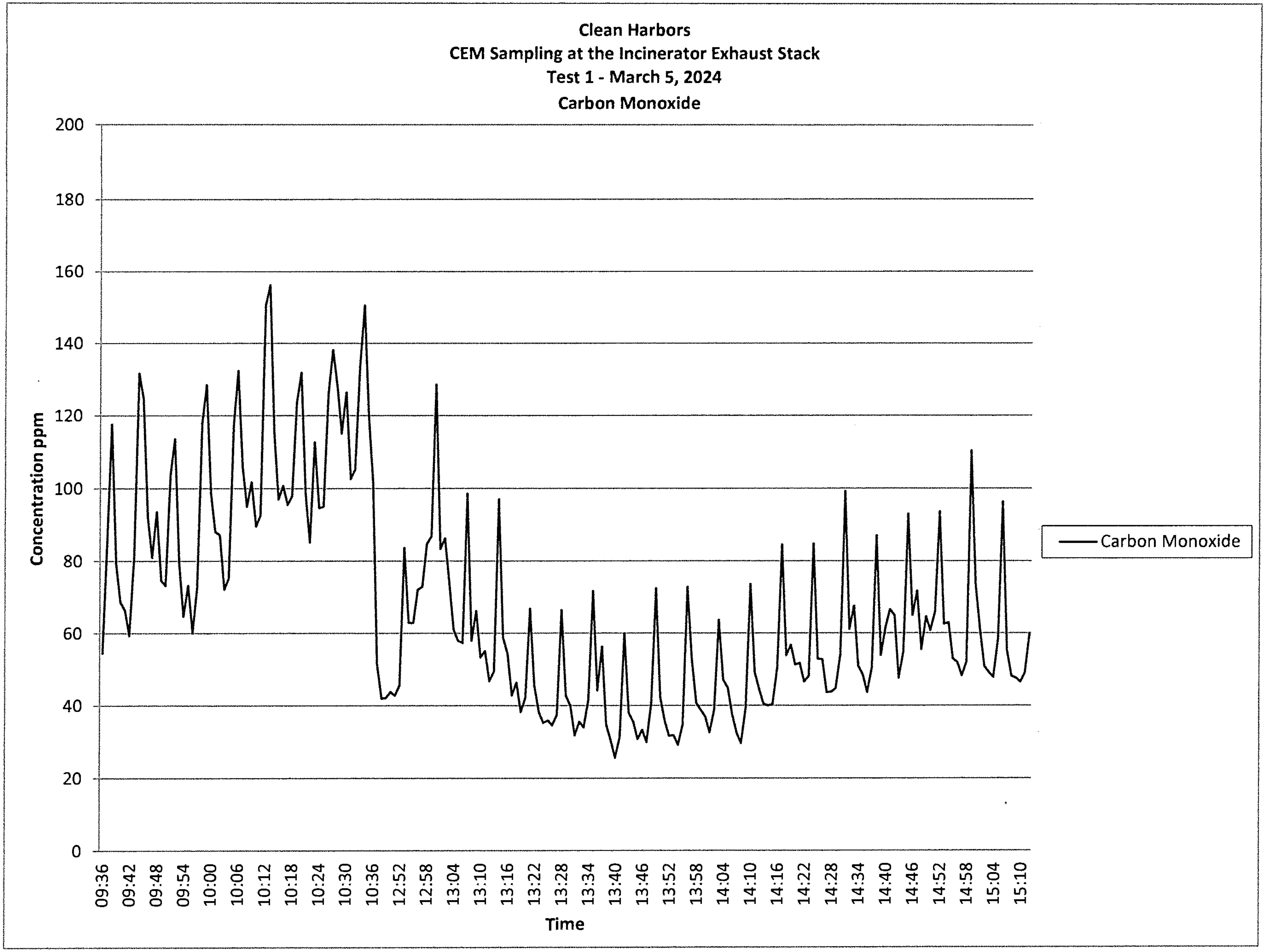
Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 1 - March 5, 2024

Time	O2 %	CO2 %	SO2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
14:40	9.21	8.69	200	61.6	36.5	35.0	84.8	89.4
14:41	8.81	9.00	193	66.5	35.9	35.0	89.9	94.5
14:42	9.05	8.74	191	64.9	34.8	35.1	87.2	88.9
14:43	8.79	9.00	194	47.6	34.0	35.1	93.4	97.7
14:44	8.55	9.10	202	54.9	35.2	35.2	91.0	95.0
14:45	8.66	9.10	217	92.9	36.7	35.5	76.9	80.7
14:46	8.47	9.18	204	64.9	35.0	35.6	88.0	91.4
14:47	9.14	8.66	196	71.6	34.6	35.5	83.1	87.6
14:48	8.74	8.99	194	55.4	34.7	35.3	92.7	97.2
14:49	9.04	8.74	194	64.6	33.4	35.1	87.9	90.6
14:50	8.76	9.01	194	60.7	33.9	34.8	85.9	88.9
14:51	8.65	9.02	194	65.9	34.7	34.7	85.8	89.8
14:52	8.79	9.02	205	93.6	36.7	34.9	78.4	80.6
14:53	8.53	9.15	199	62.5	34.7	35.0	86.5	90.8
14:54	9.19	8.69	199	62.9	33.2	34.8	86.1	90.0
14:55	8.76	9.02	196	52.9	32.5	34.3	92.0	96.1
14:56	9.05	8.74	195	51.9	31.2	34.0	91.2	94.2
14:57	8.80	8.97	193	48.2	32.0	33.7	93.5	96.9
14:58	8.67	9.00	196	52.0	33.3	33.6	91.6	96.8
14:59	8.71	9.05	203	110.2	35.2	33.7	75.4	78.5
15:00	8.41	9.21	201	73.5	34.3	33.8	89.3	90.9
15:01	9.06	8.81	203	60.9	34.8	33.8	87.1	91.1
15:02	8.64	9.12	202	50.8	32.8	33.4	92.0	97.8
15:03	9.02	8.76	200	49.1	32.2	33.1	92.2	93.8
15:04	8.75	9.01	199	47.8	31.4	33.0	95.2	98.3
15:05	8.58	9.08	204	58.3	32.4	33.0	92.9	95.6
15:06	8.61	9.11	223	96.2	33.5	33.2	77.1	79.5
15:07	8.42	9.25	219	55.2	32.8	33.3	96.1	98.9
15:08	9.04	8.74	217	48.1	31.9	33.1	91.0	95.6
15:09	8.73	9.06	214	47.6	31.4	32.7	95.6	100.2
15:10	8.98	8.79	208	46.5	30.4	32.4	92.2	94.0
15:11	8.69	9.04	208	49.0	31.6	32.0	91.2	94.7
15:12	8.61	9.05	204	59.9	32.8	32.0	87.5	92.2
Min	7.88	7.61	137	25.6	17.6	23.9	57.5	59.7
Max	10.32	9.68	250	156.2	44.2	37.5	111.0	116.4
Avg	8.96	9.05	205	67.9	31.9	31.9	88.6	91.7

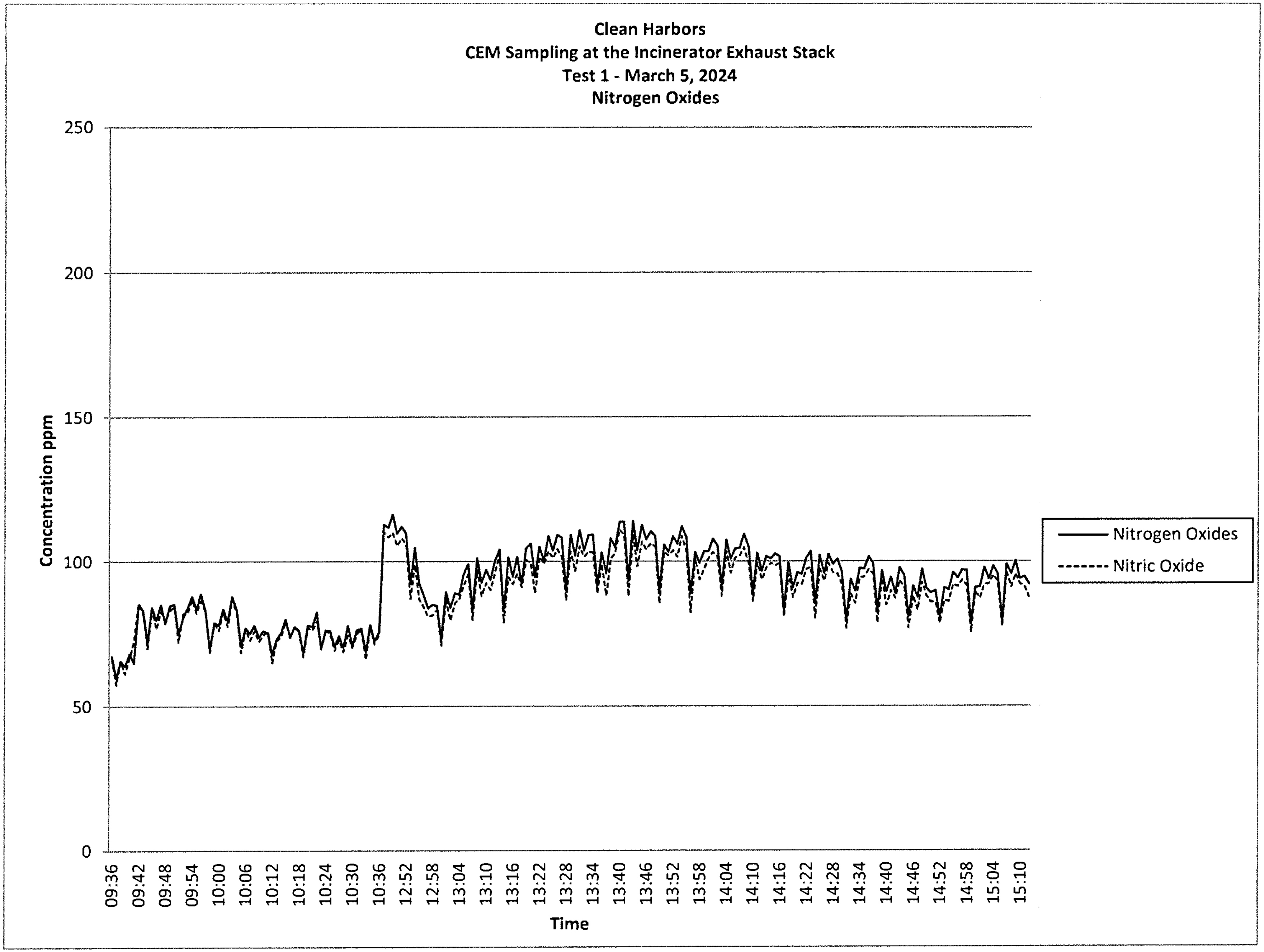

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 1 - March 5, 2024
Oxygen & Carbon Dioxide
25
20
15
10
5
0
Conventration %
09:36
09:42
09:48
09:54
10:00
10:06
10:12
10:18
10:24
10:30
10:36
12:52
12:58
13:04
13:10
13:16
13:22
13:28
13:34
13:40
13:46
13:52
13:58
14:04
14:10
14:16
14:22
14:28
14:34
14:40
14:46
14:52
14:58
15:04
15:10
Time
Oxygen
Carbon Dioxide



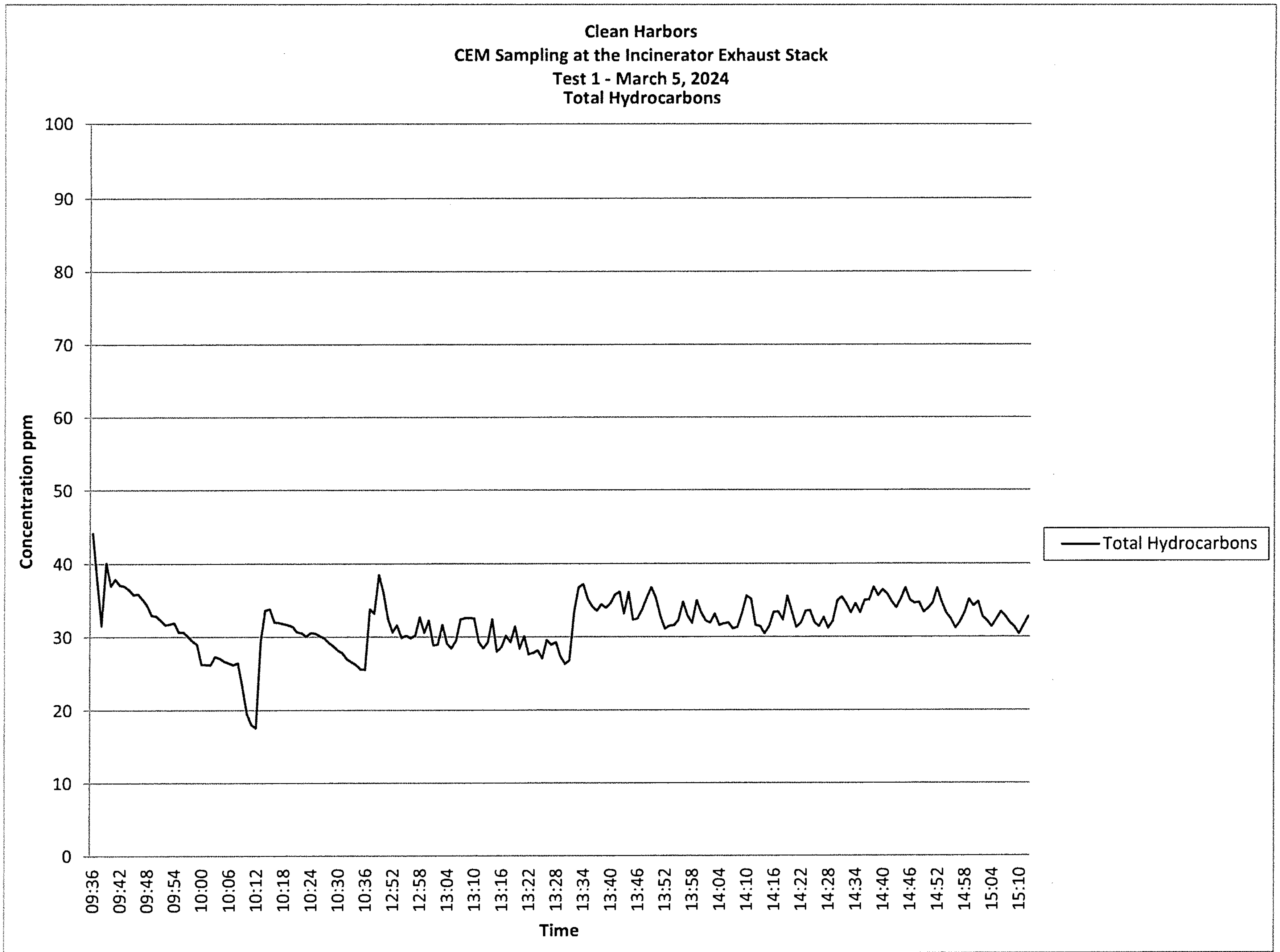
Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 1 - March 5, 2024
Sulphur Dioxide
Concentration ppm
500
450
400
350
300
250
200
150
100
50
0
09:36
09:42
09:48
09:54
10:00
10:06
10:12
10:18
10:24
10:30
10:36
12:52
12:58
13:04
13:10
13:16
13:22
13:28
13:34
13:40
13:46
13:52
13:58
14:04
14:10
14:16
14:22
14:28
14:34
14:40
14:46
14:52
14:58
15:04
15:10
Time
Sulphur Dioxide



Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 1 - March 5, 2024
Carbon Monoxide
Concentration ppm
200
180
160
140
120
100
80
60
40
20
0
09:36
09:42
09:48
09:54
10:00
10:06
10:12
10:18
10:24
10:30
10:36
12:52
12:58
13:04
13:10
13:16
13:22
13:28
13:34
13:40
13:46
13:52
13:58
14:04
14:10
14:16
14:22
14:28
14:34
14:40
14:46
14:52
14:58
15:04
15:10
Time
Carbon Monoxide



Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 1 - March 5, 2024
Nitrogen Oxides
Concentration ppm
250
200
150
100
50
0
09:36
09:42
09:48
09:54
10:00
10:06
10:12
10:18
10:24
10:30
10:36
12:52
12:58
13:04
13:10
13:16
13:22
13:28
13:34
13:40
13:46
13:52
13:58
14:04
14:10
14:16
14:22
14:28
14:34
14:40
14:46
14:52
14:58
15:04
15:10
Time
Nitrogen Oxides
Nitric Oxide



Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 1 - March 5, 2024
Total Hydrocarbons
Concentration ppm
100
90
80
70
60
50
40
30
20
10
0
09:36
09:42
09:48
09:54
10:00
10:06
10:12
10:18
10:24
10:30
10:36
12:52
12:58
13:04
13:10
13:16
13:22
13:28
13:34
13:40
13:46
13:52
13:58
14:04
14:10
14:16
14:22
14:28
14:34
14:40
14:46
14:52
14:58
15:04
15:10
Time
Total Hydrocarbons

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 2 - March 6, 2024

Time	O2 %	CO2 %	SO2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
08:55	8.55	9.62	378	37.8	41.6		87.9	100.6
08:56	8.40	9.75	384	42.2	41.6		84.1	97.6
08:57	8.51	9.68	407	77.0	43.5		68.9	81.0
08:58	8.23	9.89	393	49.1	43.9		90.5	101.3
08:59	8.99	9.29	384	42.5	45.5		82.5	93.9
09:00	8.50	9.69	383	35.5	42.1		88.9	100.6
09:01	8.97	9.29	370	35.4	41.7		91.3	99.9
09:02	8.70	9.54	367	34.2	41.2		90.8	100.7
09:03	8.52	9.66	374	37.2	42.4		88.9	100.3
09:04	8.48	9.71	401	69.6	44.9	42.8	72.8	82.6
09:05	8.22	9.90	399	46.0	44.3	43.1	89.9	100.1
09:06	8.92	9.35	392	44.1	42.4	43.2	82.3	91.9
09:07	8.63	9.56	380	32.3	42.3	43.1	92.1	104.0
09:08	9.04	9.25	364	31.5	41.6	42.8	90.8	100.6
09:09	8.73	9.50	362	33.3	48.8	43.2	93.7	103.4
09:10	8.54	9.65	372	37.5	45.8	43.5	88.7	99.8
09:11	8.67	9.54	394	51.0	44.5	43.8	78.5	88.0
09:12	8.45	9.72	383	34.7	42.7	44.0	94.0	105.5
09:13	9.13	9.18	377	34.8	44.0	44.1	85.4	95.0
09:14	8.68	9.56	379	35.4	43.0	43.9	89.3	99.0
09:15	8.99	9.30	373	37.4	42.5	43.7	92.2	99.8
09:16	8.60	9.58	379	40.5	44.1	43.9	89.0	99.1
09:17	8.37	9.77	395	48.0	45.8	44.3	85.1	94.6
09:18	8.54	9.66	420	72.1	48.4	44.9	71.3	78.9
09:19	8.39	9.77	399	42.9	45.3	44.6	94.1	104.1
09:20	9.09	9.22	381	39.1	46.7	44.7	86.8	97.8
09:21	8.66	9.56	379	36.7	46.2	44.9	90.5	101.1
09:22	9.05	9.24	371	37.3	44.0	45.0	93.6	102.7
09:23	8.81	9.44	370	31.9	43.8	45.0	92.9	102.3
09:24	8.64	9.57	373	36.2	45.0	45.2	91.8	101.0
09:25	8.52	9.67	406	67.8	47.1	45.6	71.5	81.8
09:26	8.21	9.92	406	50.0	46.5	45.9	86.0	96.0
09:27	8.94	9.34	398	45.7	46.2	45.9	80.7	90.4
09:28	8.59	9.60	387	37.4	50.0	46.1	89.5	100.6
09:29	9.01	9.27	375	36.4	46.1	46.2	86.1	100.1
09:30	8.71	9.52	373	41.9	47.3	46.2	87.7	100.4
09:31	8.54	9.65	380	44.5	47.0	46.3	100.8	112.9
09:32	8.63	9.60	406	72.0	50.7	47.0	80.5	93.8
09:33	8.42	9.74	391	46.9	46.4	47.2	101.0	115.2
09:34	9.10	9.19	383	46.3	46.5	47.4	93.5	107.4
09:35	8.65	9.57	387	43.4	40.9	46.8	99.0	111.6
09:36	9.02	9.25	376	41.6	34.3	45.6	95.6	108.6
09:37	8.66	9.56	381	47.5	36.2	44.6	96.8	111.0
09:38	8.64	9.55	383	43.2	35.0	43.0	101.6	114.8
09:39	8.66	9.56	403	66.5	35.1	41.9	83.2	98.1
09:40	8.50	9.67	386	44.3	35.9	40.8	97.5	111.6
09:41	8.99	9.27	378	45.1	33.7	39.5	92.5	105.9
09:42	8.64	9.58	382	41.8	40.0	38.4	96.5	110.9
09:43	8.94	9.31	377	41.4	35.5	37.3	92.2	103.8
09:44	8.62	9.57	381	43.8	33.1	36.0	98.4	112.1
09:45	8.44	9.70	388	49.4	35.7	35.4	99.4	114.9
09:46	8.65	9.56	409	70.9	34.9	35.5	81.5	95.4
09:47	8.27	9.85	403	49.8	34.1	35.3	99.9	114.2
09:48	8.94	9.30	400	47.5	36.4	35.4	93.9	108.0
09:49	8.48	9.71	401	48.1	35.0	35.4	94.3	111.6
09:50	8.90	9.36	390	42.9	32.0	35.0	91.9	104.0
09:51	8.58	9.62	388	37.5	35.3	35.2	101.8	116.6
09:52	8.31	9.81	400	47.0	36.6	34.9	99.6	114.9

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 2 - March 6, 2024

Time	O_2 %	CO_2 %	SO_2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
09:53	8.44	9.73	424	76.1	33.4	34.7	81.5	95.2
09:54	8.20	9.92	408	46.9	31.8	34.5	100.5	113.8
09:55	8.99	9.27	387	39.4	31.8	34.1	98.3	108.6
09:56	8.53	9.68	386	41.4	30.5	33.7	98.9	114.9
09:57	8.85	9.39	385	44.8	30.5	33.3	94.3	107.0
09:58	8.51	9.68	394	39.0	31.3	32.8	101.0	115.9
09:59	8.35	9.78	401	42.2	31.5	32.5	100.8	116.2
10:00	8.45	9.73	421	60.4	34.1	32.7	84.5	97.8
10:01	8.23	9.88	409	40.2	31.4	32.3	101.6	116.0
10:02	8.88	9.37	403	40.7	31.7	31.8	95.1	108.8
10:03	8.59	9.62	395	35.7	29.6	31.4	102.4	118.4
10:04	8.88	9.36	379	36.9	24.6	30.7	98.0	108.6
10:05	8.51	9.66	383	32.8	25.7	30.1	96.9	113.0
10:06	8.28	9.82	402	38.6	27.3	29.8	87.1	102.8
10:07	8.37	9.77	441	65.3	29.3	29.6	71.1	84.9
10:08	8.18	9.90	422	44.4	25.6	29.1	90.1	102.6
10:09	8.76	9.43	424	48.1	26.0	28.5	80.2	97.3
10:10	8.33	9.80	428	39.9	25.7	27.7	85.5	99.0
10:11	8.81	9.39	410	35.4	25.7	27.1	85.3	97.8
10:12	8.55	9.61	404	33.6	26.0	26.5	90.9	103.1
10:13	8.37	9.72	405	39.4	26.7	26.2	91.5	102.1
10:14	8.37	9.75	433	73.0	26.1	26.4	69.6	82.7
10:15	8.25	9.83	413	43.6	26.2	26.4	87.1	100.8
10:16	8.95	9.26	394	36.6	24.7	26.2	89.2	100.2
10:17	8.53	9.62	391	35.3	25.7	25.8	87.7	101.0
10:18	8.90	9.30	384	38.5	25.1	25.8	85.1	96.5
10:19	8.58	9.57	386	37.3	25.9	25.8	90.3	100.9
10:20	8.27	9.80	408	46.8	27.7	26.0	87.8	99.4
10:21	8.30	9.80	446	78.1	29.7	26.4	65.3	77.0
10:22	8.14	9.93	430	45.5	25.8	26.4	89.1	100.2
10:23	8.73	9.46	424	45.5	26.1	26.3	79.2	92.7
10:24	8.41	9.73	419	34.7	25.3	26.2	85.9	100.8
10:25	8.65	9.50	415	37.6	25.1	26.1	81.3	94.1
10:26	8.36	9.75	414	33.1	25.9	26.2	89.8	100.2
10:27	8.21	9.85	420	34.5	26.5	26.3	90.0	102.8
10:28	8.31	9.80	448	60.7	28.5	26.7	72.2	83.6
10:29	8.04	9.99	432	42.6	26.0	26.7	90.6	102.5
10:30	8.73	9.43	424	42.0	26.3	26.5	82.6	94.6
10:31	8.39	9.73	416	32.0	25.8	26.1	91.6	102.8
10:32	8.78	9.40	401	30.9	25.2	26.1	93.7	103.7
10:33	8.48	9.65	404	29.5	26.0	26.1	94.8	106.1
10:34	8.22	9.84	420	37.5	26.8	26.2	92.7	103.8
10:35	8.30	9.80	453	70.8	25.7	26.3	73.8	81.8
10:36	8.16	9.89	434	39.7	25.6	26.2	93.5	101.7
10:37	8.80	9.38	413	32.7	24.6	26.1	86.0	99.0
10:38	8.37	9.74	415	32.8	25.5	25.8	92.8	102.9
10:39	8.73	9.43	409	36.2	25.8	25.7	88.1	97.4
10:40	8.39	9.72	411	32.3	26.1	25.7	90.1	100.8
10:41	8.25	9.81	417	35.4	26.9	25.8	88.9	100.3
10:42	8.44	9.69	434	60.1	28.3	26.1	73.1	83.1
10:43	8.23	9.84	412	35.6	28.7	26.4	94.5	105.5
10:44	8.89	9.30	401	36.5	29.7	26.7	81.9	94.3
10:45	8.36	9.75	413	32.7	31.2	27.2	86.0	98.4
10:46	8.69	9.47	412	34.1	30.4	27.7	85.8	98.4
10:47	8.45	9.68	411	30.1	31.4	28.4	91.7	103.6
10:48	8.28	9.79	415	35.7	30.3	28.9	91.8	104.8
10:49	8.39	9.73	446	62.5	30.9	29.4	72.8	83.6
10:50	8.11	9.93	429	40.6	30.4	29.8	90.2	99.2

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 2 - March 6, 2024

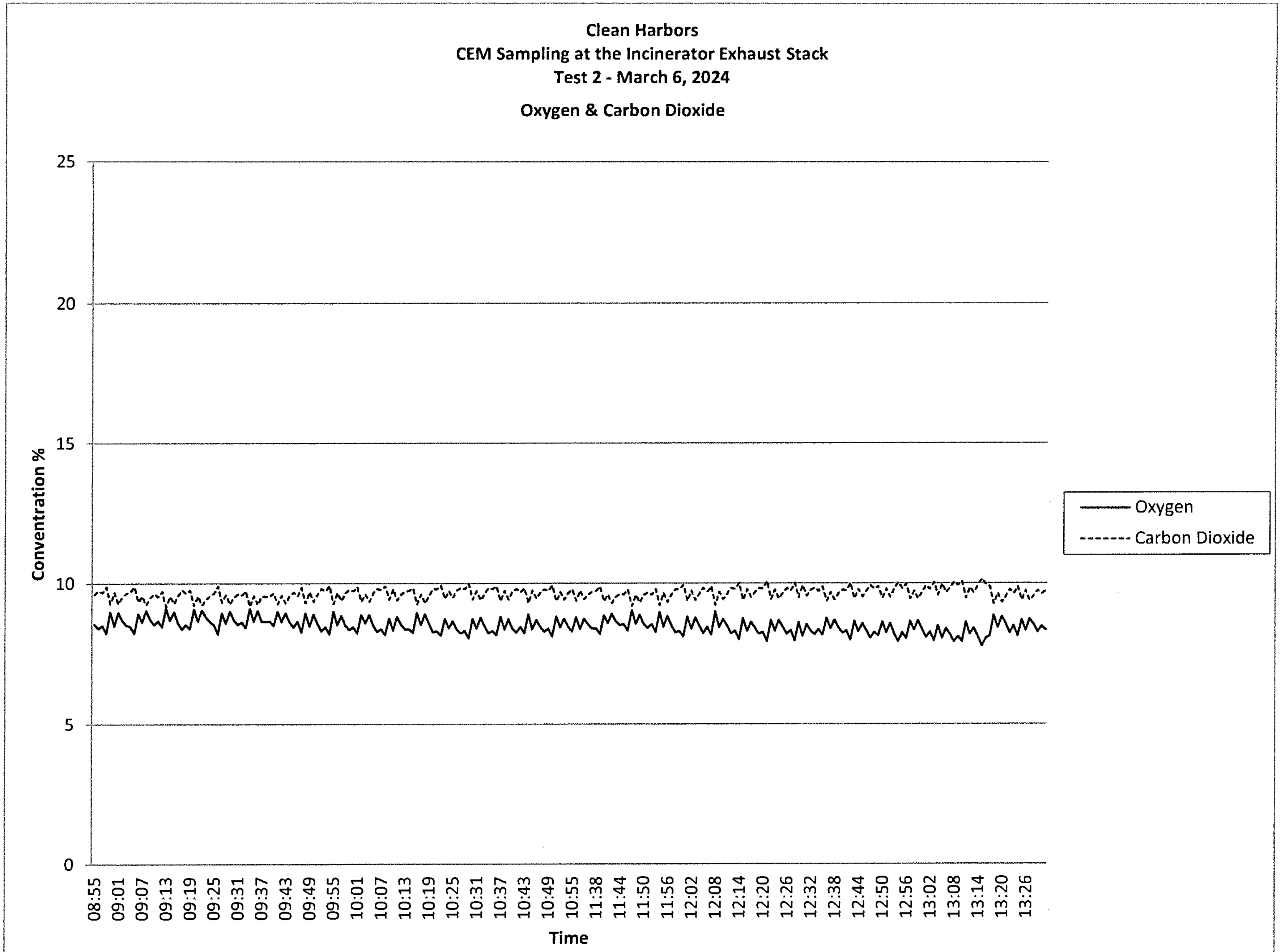
	O2	CO2	SO2	CO	THC (ppm)		NO	NOx
Time	%	%	ppm	ppm	1-min	10-min	ppm	ppm
10:51	8.82	9.36	422	42.9	29.9	30.1	81.4	93.7
10:52	8.43	9.69	416	31.5	31.4	30.4	91.0	101.6
10:53	8.74	9.42	404	32.4	30.3	30.6	90.0	101.6
10:54	8.46	9.66	405	28.5	32.3	30.9	94.2	105.1
10:55	8.28	9.78	413	35.3	33.0	31.0	90.8	102.9
11:33	8.79	9.38	432	26.8	28.7		89.5	101.1
11:34	8.37	9.74	432	26.7	31.1		96.0	106.9
11:35	8.74	9.43	419	27.3	28.7		94.1	103.6
11:36	8.55	9.60	414	25.5	29.6		96.9	106.7
11:37	8.39	9.70	412	27.2	34.2		95.9	105.0
11:38	8.40	9.74	428	47.6	40.6		74.0	84.4
11:39	8.20	9.88	387	30.6	36.6		90.6	98.5
11:40	8.85	9.35	377	29.7	28.8		86.4	95.9
11:41	8.58	9.60	372	28.7	28.5		94.2	105.6
11:42	8.91	9.30	363	28.9	26.7	31.3	91.7	99.9
11:43	8.64	9.53	364	27.7	27.4	31.2	91.3	101.5
11:44	8.51	9.61	372	33.0	29.0	31.0	90.7	101.5
11:45	8.55	9.61	393	47.4	31.2	31.3	74.7	83.1
11:46	8.32	9.77	380	34.0	29.6	31.3	91.7	99.8
11:47	9.03	9.19	365	32.5	27.2	30.6	85.7	97.6
11:48	8.55	9.60	368	31.9	29.6	29.5	91.8	101.0
11:49	8.87	9.32	363	32.8	30.5	28.8	88.5	100.6
11:50	8.56	9.59	371	33.9	40.4	30.0	89.2	98.6
11:51	8.40	9.68	376	36.7	32.2	30.4	85.4	97.8
11:52	8.55	9.59	398	61.4	31.3	30.8	73.3	83.1
11:53	8.27	9.79	386	38.3	29.4	31.0	87.0	97.7
11:54	8.97	9.22	378	34.5	27.5	30.9	84.6	93.7
11:55	8.44	9.66	382	31.8	30.7	30.8	90.2	101.4
11:56	8.83	9.33	375	33.1	28.3	30.7	87.4	95.2
11:57	8.48	9.62	374	35.0	31.7	31.2	90.3	99.3
11:58	8.25	9.78	385	36.3	41.4	32.3	90.6	99.5
11:59	8.30	9.79	420	77.3	45.6	33.8	65.9	78.5
12:00	8.10	9.94	405	41.7	43.1	34.1	92.7	100.4
12:01	8.80	9.37	396	36.0	28.9	33.8	84.0	93.6
12:02	8.38	9.74	399	29.0	38.6	34.5	88.5	100.4
12:03	8.77	9.39	384	30.3	31.4	34.7	90.6	99.8
12:04	8.49	9.64	383	27.1	32.2	35.2	93.0	102.3
12:05	8.22	9.83	396	31.9	35.6	35.7	88.6	97.9
12:06	8.44	9.69	415	47.0	36.9	36.5	75.0	84.1
12:07	8.17	9.89	397	33.2	40.4	37.4	94.1	104.8
12:08	8.99	9.22	379	31.6	34.7	36.7	89.5	101.0
12:09	8.43	9.69	388	33.4	34.7	35.6	93.2	104.6
12:10	8.73	9.43	382	29.6	30.2	34.4	91.6	100.7
12:11	8.49	9.63	389	27.8	32.3	34.7	93.8	102.8
12:12	8.21	9.83	395	33.3	37.0	34.5	95.6	102.9
12:13	8.31	9.79	427	62.7	44.5	35.8	71.8	80.0
12:14	8.01	10.01	412	35.3	34.8	36.1	93.1	107.5
12:15	8.75	9.39	394	32.9	31.6	35.7	87.7	97.9
12:16	8.30	9.79	397	29.3	34.6	35.5	91.8	102.6
12:17	8.62	9.50	386	27.2	32.1	34.7	91.7	101.9
12:18	8.42	9.68	384	24.7	33.7	34.5	93.0	103.7
12:19	8.19	9.83	390	30.4	36.7	34.7	96.2	104.7
12:20	8.27	9.81	423	60.0	42.6	36.0	69.3	79.3
12:21	7.93	10.07	419	35.1	33.9	36.1	93.6	105.1
12:22	8.68	9.44	406	30.4	34.6	35.9	85.9	97.7
12:23	8.31	9.78	403	25.8	31.8	34.6	92.9	104.1
12:24	8.68	9.45	387	25.6	30.6	34.2	94.2	108.3
12:25	8.45	9.65	383	21.8	31.8	34.2	97.2	106.8

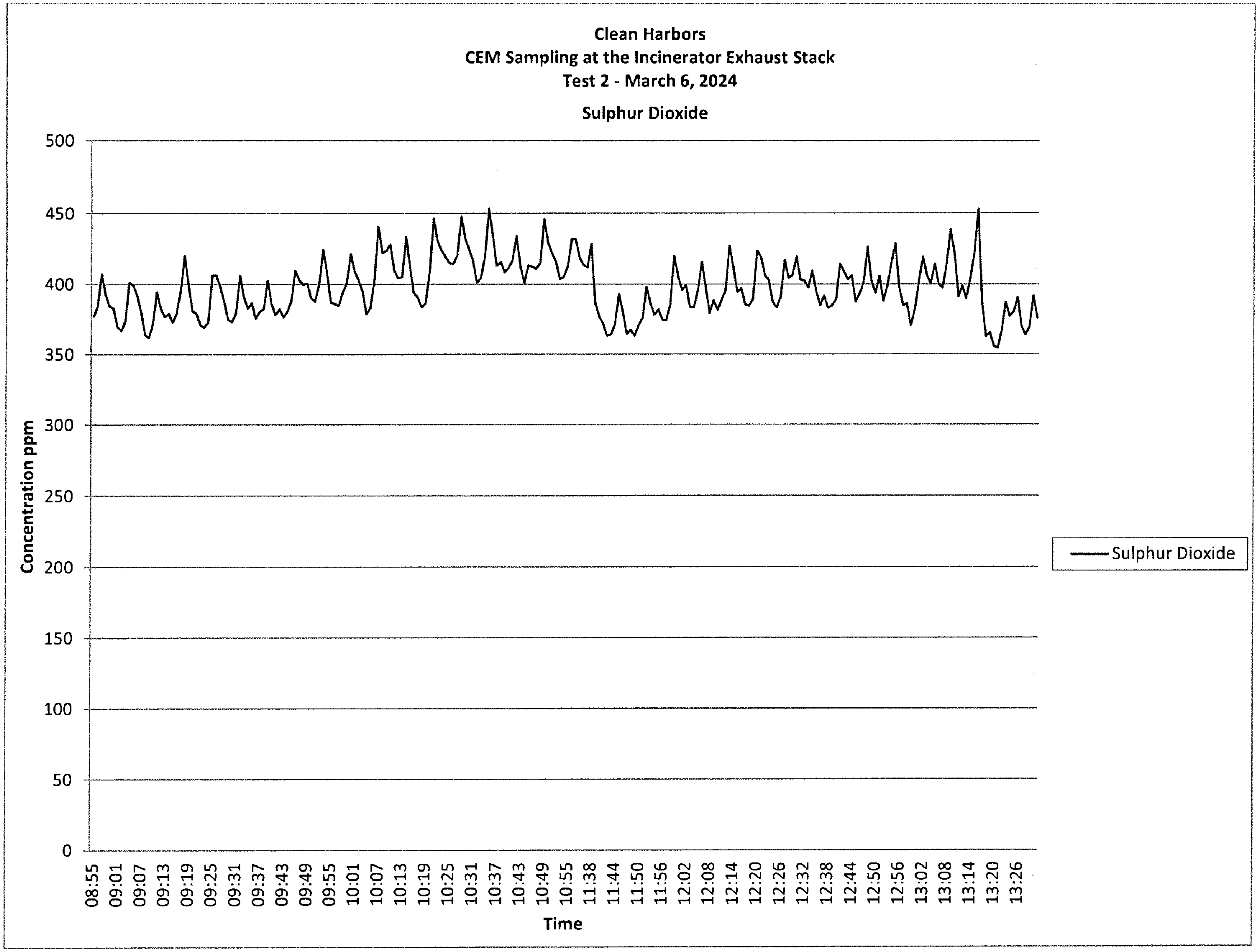
Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 2 - March 6, 2024

Time	O2 %	CO2 %	SO2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
12:26	8.19	9.82	391	26.7	34.8	34.2	95.9	106.8
12:27	8.33	9.74	417	43.9	37.4	34.8	75.4	86.2
12:28	7.96	10.01	404	32.2	37.7	35.2	91.7	103.4
12:29	8.61	9.50	406	39.8	36.2	35.1	84.5	95.6
12:30	8.11	9.92	419	35.3	40.4	34.9	86.7	97.7
12:31	8.54	9.55	403	30.8	32.3	34.7	85.4	98.3
12:32	8.31	9.76	402	28.5	40.3	35.3	92.9	103.9
12:33	8.17	9.83	397	32.9	31.4	35.3	98.2	108.5
12:34	8.36	9.72	409	69.2	31.4	35.4	70.8	81.0
12:35	8.15	9.88	395	37.3	30.5	35.2	90.8	100.2
12:36	8.76	9.36	385	38.4	30.0	34.7	82.6	93.4
12:37	8.39	9.69	392	42.2	31.8	34.2	82.1	94.4
12:38	8.69	9.41	383	42.1	31.5	33.6	80.2	90.0
12:39	8.42	9.65	385	35.0	34.0	33.3	84.9	95.6
12:40	8.23	9.76	389	41.9	37.9	33.1	89.7	100.2
12:41	8.31	9.74	414	100.1	37.9	33.7	66.3	78.2
12:42	7.97	10.00	409	54.8	31.5	32.8	82.0	94.4
12:43	8.65	9.45	403	52.8	28.5	32.5	72.7	83.9
12:44	8.28	9.78	406	42.9	32.4	32.6	80.5	93.1
12:45	8.56	9.52	387	38.7	30.2	32.6	79.3	88.9
12:46	8.32	9.73	393	34.9	32.7	32.8	83.3	93.7
12:47	8.04	9.93	401	49.6	41.0	33.7	84.3	95.8
12:48	8.26	9.79	426	117.7	47.1	35.3	63.1	72.1
12:49	8.14	9.89	402	44.1	34.5	35.4	86.8	99.5
12:50	8.62	9.47	394	45.9	39.4	35.5	82.5	92.8
12:51	8.24	9.80	406	51.7	30.7	34.8	78.1	90.0
12:52	8.57	9.51	388	43.8	30.3	34.7	80.2	89.8
12:53	8.20	9.82	398	43.1	28.5	34.7	80.7	92.5
12:54	7.92	10.02	414	67.1	41.5	35.6	83.0	91.6
12:55	8.24	9.80	428	144.2	48.1	37.4	61.3	75.8
12:56	8.03	9.97	398	42.7	34.7	37.6	85.4	96.9
12:57	8.65	9.44	385	41.4	35.7	37.0	85.7	95.2
12:58	8.33	9.73	386	42.1	30.2	35.4	83.3	94.4
12:59	8.67	9.44	371	37.8	29.8	34.9	80.4	89.2
13:00	8.35	9.70	382	39.6	33.3	34.3	83.9	95.0
13:01	8.07	9.92	402	54.7	34.9	34.7	79.2	91.8
13:02	8.27	9.79	419	106.2	44.3	36.1	62.3	74.0
13:03	7.95	10.03	407	47.8	36.9	36.9	82.2	92.7
13:04	8.48	9.58	400	57.9	38.8	36.7	77.7	88.6
13:05	8.05	9.97	414	54.0	43.6	36.2	75.4	86.7
13:06	8.39	9.67	400	54.8	37.1	36.5	74.2	84.0
13:07	8.19	9.84	397	33.3	37.9	36.7	87.4	96.6
13:08	7.92	10.04	414	50.8	39.5	37.6	82.2	95.4
13:09	8.10	9.92	438	80.5	27.1	37.3	64.1	73.6
13:10	7.92	10.07	421	40.9	28.9	36.9	92.5	102.8
13:11	8.62	9.47	391	29.0	27.4	36.1	87.7	100.4
13:12	8.19	9.85	398	31.3	31.5	34.9	86.4	98.5
13:13	8.40	9.66	390	32.2	30.5	34.2	85.4	94.3
13:14	8.09	9.93	403	34.2	35.4	33.9	86.4	96.9
13:15	7.77	10.15	422	64.6	62.3	35.8	83.7	97.5
13:16	8.04	9.96	453	224.3	67.0	38.8	60.4	71.2
13:17	8.12	9.89	387	49.2	30.5	38.0	98.7	109.9
13:18	8.85	9.27	363	28.1	28.8	36.9	88.3	102.4
13:19	8.42	9.65	366	26.3	32.3	37.5	95.0	107.1
13:20	8.81	9.32	356	23.1	29.2	37.5	92.2	102.3
13:21	8.57	9.53	354	22.7	30.9	37.8	96.4	106.8
13:22	8.23	9.77	367	33.0	39.1	38.6	93.7	104.1
13:23	8.48	9.62	387	50.6	11.9	36.7	77.4	85.7

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 2 - March 6, 2024

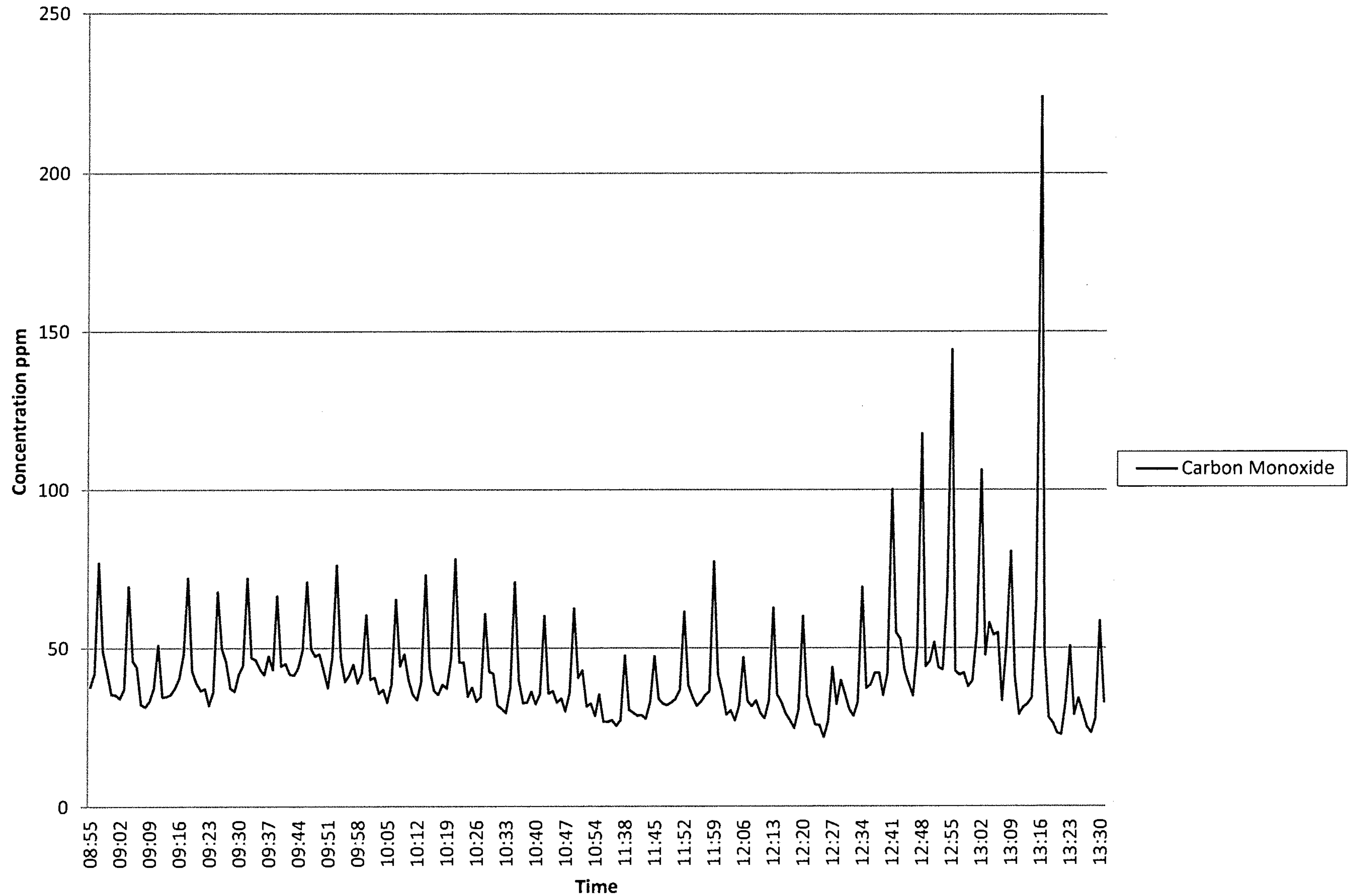
	O2	CO2	SO2	CO	THC (ppm)		NO	NOx
Time	%	%	ppm	ppm	1-min	10-min	ppm	ppm
13:24	8.13	9.87	377	29.0	33.9	36.6	94.2	105.6
13:25	8.70	9.40	380	34.1	29.0	33.3	78.7	91.4
13:26	8.32	9.74	391	29.8	34.0	30.0	86.7	100.2
13:27	8.73	9.38	370	25.1	26.5	29.6	94.7	103.5
13:28	8.54	9.55	364	23.2	28.9	29.6	94.2	104.1
13:29	8.27	9.74	369	27.5	34.1	29.8	93.1	104.6
13:30	8.47	9.62	391	58.4	30.5	29.9	78.7	87.7
13:31	8.34	9.73	376	32.9	27.0	29.5	95.5	105.6
Min	7.77	9.18	354	21.8	11.9	25.7	60.4	71.2
Max	9.13	10.15	453	224.3	67.0	47.4	102.4	118.4
Avg	8.48	9.64	397	42.8	34.4	34.4	87.4	98.7

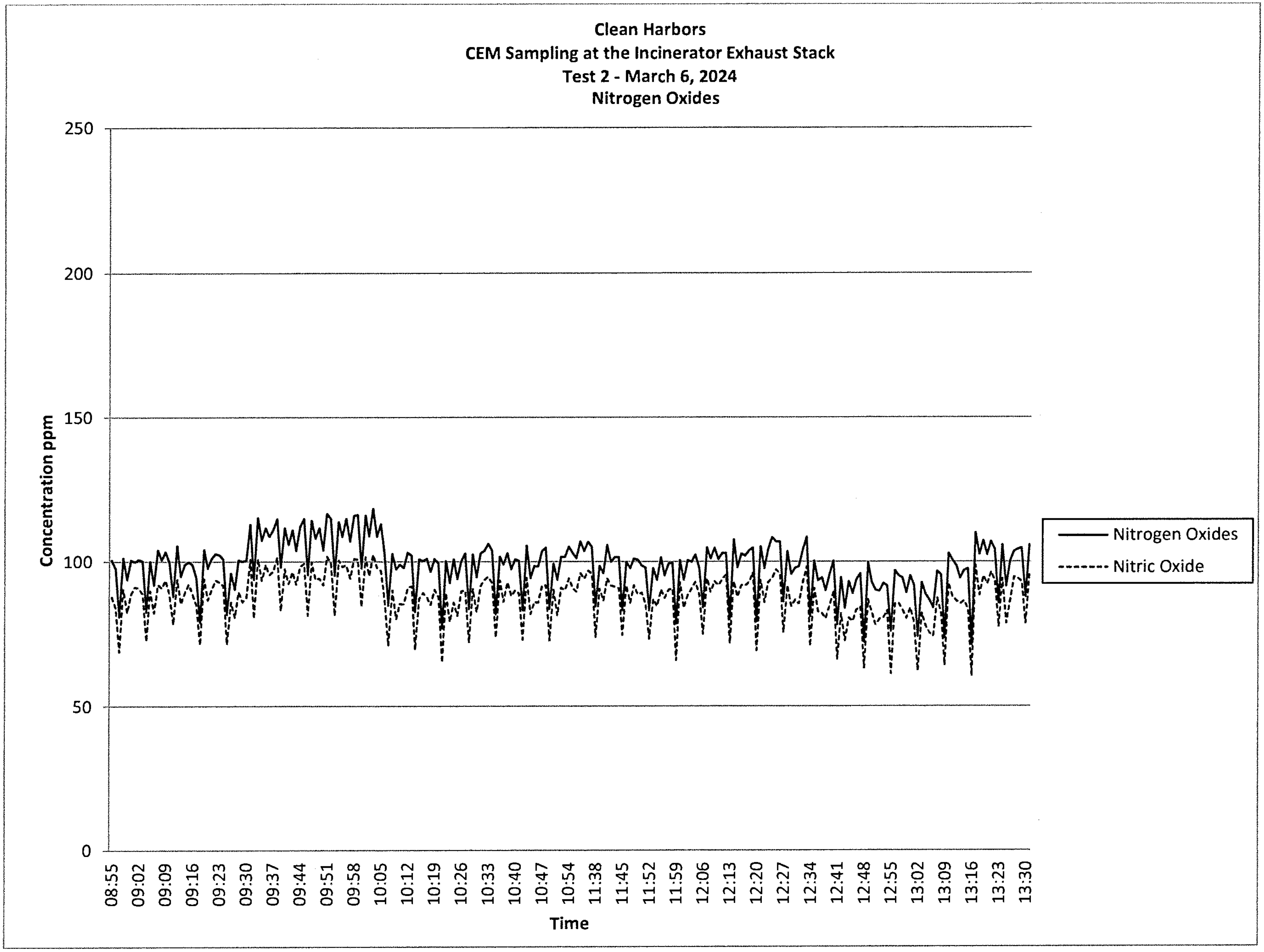

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 2 - March 6, 2024
Oxygen & Carbon Dioxide
Conventration %
0
5
10
15
20
25
Time
08:55
09:01
09:07
09:13
09:19
09:25
09:31
09:37
09:43
09:49
09:55
10:01
10:07
10:13
10:19
10:25
10:31
10:37
10:43
10:49
10:55
11:38
11:44
11:50
11:56
12:02
12:08
12:14
12:20
12:26
12:32
12:38
12:44
12:50
12:56
13:02
13:08
13:14
13:20
13:26
Oxygen
Carbon Dioxide



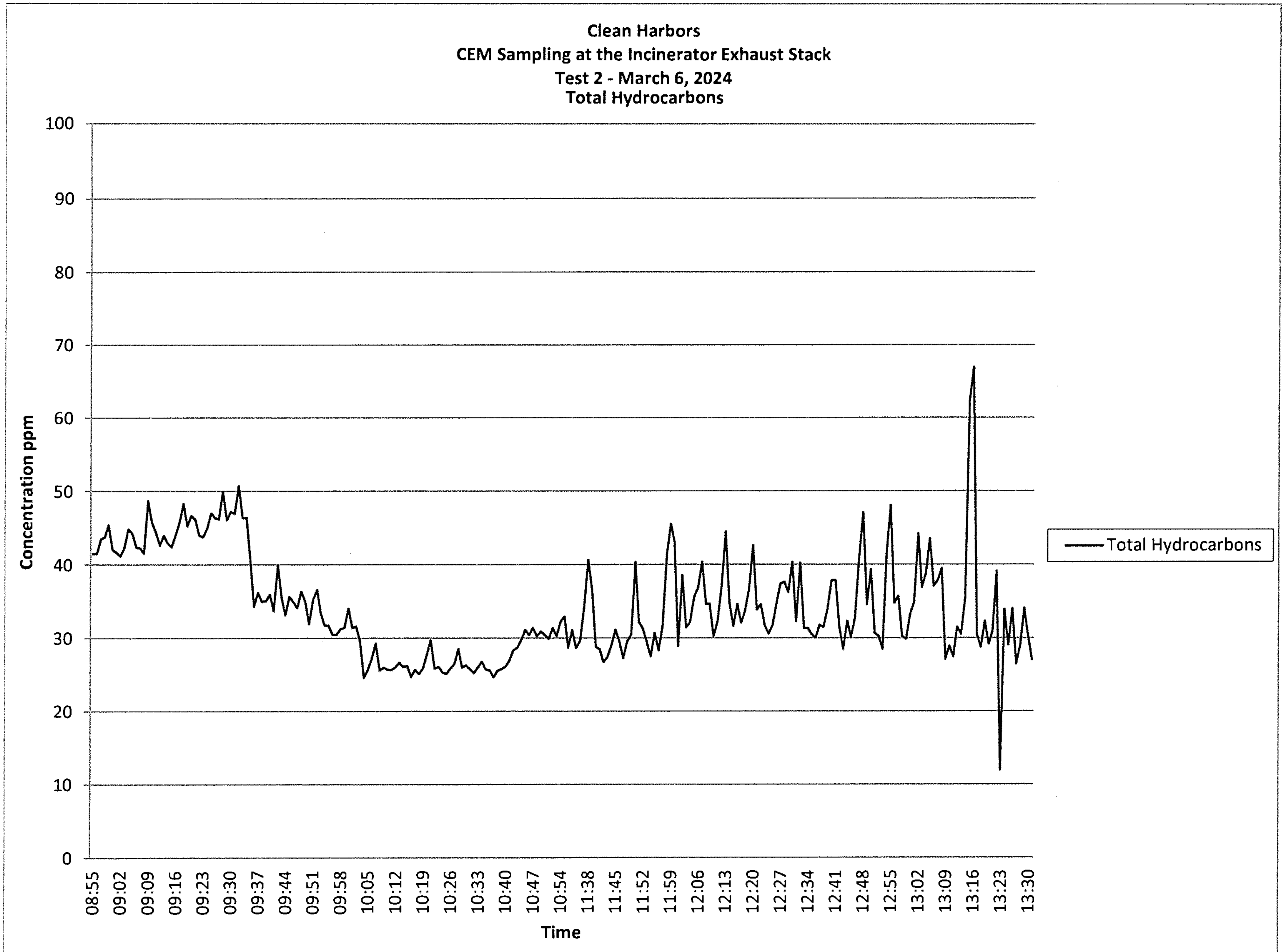
Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 2 - March 6, 2024
Sulphur Dioxide
Concentration ppm
500
450
400
350
300
250
200
150
100
50
0
08:55
09:01
09:07
09:13
09:19
09:25
09:31
09:37
09:43
09:49
09:55
10:01
10:07
10:13
10:19
10:25
10:31
10:37
10:43
10:49
10:55
11:38
11:44
11:50
11:56
12:02
12:08
12:14
12:20
12:26
12:32
12:38
12:44
12:50
12:56
13:02
13:08
13:14
13:20
13:26
Time
Sulphur Dioxide

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 2 - March 6, 2024
Carbon Monoxide





Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 2 - March 6, 2024
Nitrogen Oxides
Concentration ppm
250
200
150
100
50
0
08:55
09:02
09:09
09:16
09:23
09:30
09:37
09:44
09:51
09:58
10:05
10:12
10:19
10:26
10:33
10:40
10:47
10:54
11:38
11:45
11:52
11:59
12:06
12:13
12:20
12:27
12:34
12:41
12:48
12:55
13:02
13:09
13:16
13:23
13:30
Time
Nitrogen Oxides
Nitric Oxide



Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 2 - March 6, 2024
Total Hydrocarbons
Concentration ppm
100
90
80
70
60
50
40
30
20
10
0
08:55
09:02
09:09
09:16
09:23
09:30
09:37
09:44
09:51
09:58
10:05
10:12
10:19
10:26
10:33
10:40
10:47
10:54
11:38
11:45
11:52
11:59
12:06
12:13
12:20
12:27
12:34
12:41
12:48
12:55
13:02
13:09
13:16
13:23
13:30
Time
Total Hydrocarbons

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 3 - March 7, 2024

Time	O2 %	CO2 %	SO2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
08:36	8.46	9.23	312	60.0	27.8		96.4	108.0
08:37	8.18	9.45	319	65.5	36.4		93.9	107.2
08:38	8.41	9.24	334	111.5	32.5		74.7	85.6
08:39	8.22	9.43	322	67.6	25.3		92.7	103.8
08:40	8.83	8.91	315	61.8	24.5		93.2	103.6
08:41	8.55	9.17	314	58.0	26.7		99.1	110.8
08:42	8.78	8.95	302	55.7	25.4		97.2	108.3
08:43	8.52	9.13	306	58.3	28.1		97.4	109.1
08:44	8.24	9.36	312	65.2	30.9		94.3	105.9
08:45	8.52	9.15	329	97.2	33.6	29.1	78.5	90.4
08:46	8.28	9.35	318	67.9	28.4	29.2	94.8	106.8
08:47	8.93	8.82	308	56.7	25.6	28.1	92.2	104.9
08:48	8.56	9.13	314	56.8	28.2	27.7	95.1	109.0
08:49	8.82	8.89	308	51.1	26.1	27.8	96.4	106.5
08:50	8.54	9.13	312	54.1	18.2	27.1	97.7	109.1
08:51	8.28	9.34	313	61.5	32.3	27.7	96.2	109.2
08:52	8.50	9.16	315	90.1	28.7	28.0	79.0	92.3
08:53	8.28	9.25	296	55.7	30.0	28.2	99.0	108.9
08:54	8.98	8.79	285	55.4	25.6	27.7	95.1	107.2
08:55	8.62	9.03	290	49.5	24.6	26.8	99.4	110.8
08:56	8.86	8.88	285	49.0	24.8	26.4	97.9	110.7
08:57	8.66	9.03	292	49.0	26.8	26.5	97.8	108.5
08:58	8.36	9.26	299	58.1	33.0	27.0	93.6	107.6
08:59	8.57	9.07	320	85.7	32.4	27.6	83.7	93.5
09:00	8.33	9.31	315	52.6	28.1	28.6	104.8	115.6
09:01	8.99	8.76	305	48.1	31.2	28.5	97.5	109.3
09:02	8.69	9.05	307	54.2	25.0	28.1	99.3	112.7
09:03	8.95	8.80	297	43.6	23.7	27.5	100.9	111.1
09:04	8.70	8.99	300	47.3	31.3	28.1	99.2	110.4
09:05	8.39	9.23	306	57.7	28.8	28.5	92.3	106.3
09:06	8.60	9.11	323	87.8	40.7	30.1	78.3	89.1
09:07	8.29	9.35	317	53.9	40.9	31.5	98.5	108.7
09:08	8.99	8.79	314	50.8	28.9	31.1	94.2	106.8
09:09	8.58	9.13	322	52.2	31.6	31.0	96.3	108.7
09:10	8.77	8.97	319	52.5	30.8	31.3	98.1	110.0
09:11	8.60	9.11	324	51.5	31.6	31.3	99.6	110.1
09:12	8.37	9.29	324	52.3	33.3	32.1	94.1	106.8
09:13	8.59	9.08	337	78.8	35.7	33.3	83.5	94.7
09:14	8.32	9.26	327	51.2	33.8	33.6	98.9	109.7
09:15	9.02	8.77	316	48.5	29.1	33.6	95.8	108.9
09:16	8.63	9.06	317	50.3	29.5	32.5	97.9	110.7
09:17	8.89	8.88	309	46.2	26.4	31.1	97.7	109.0
09:18	8.67	9.03	313	50.4	34.3	31.6	98.7	110.5
09:19	8.35	9.29	320	51.7	20.6	30.5	96.0	107.7
09:20	8.58	9.15	342	85.3	10.4	28.5	81.2	92.4
09:21	8.30	9.37	335	54.8	29.2	28.2	101.2	113.3
09:22	9.05	8.77	322	45.0	25.6	27.5	96.0	108.2
09:23	8.71	9.05	316	45.8	27.5	26.6	99.3	111.1
09:24	8.95	8.83	307	42.1	25.8	25.8	101.7	114.0
09:25	8.75	9.00	307	46.1	27.6	25.7	98.8	110.7
09:26	8.44	9.24	311	53.6	32.4	26.0	97.5	108.4
09:27	8.69	9.06	328	85.5	36.5	27.0	80.5	91.5
09:28	8.45	9.23	316	53.4	27.0	26.3	98.3	109.6
09:29	9.10	8.73	306	48.0	26.6	26.9	91.7	103.1
09:30	8.71	9.05	309	48.9	30.5	28.9	95.2	107.8
09:31	8.87	8.91	308	56.6	30.5	29.0	96.4	108.2
09:32	8.69	9.06	315	53.3	34.6	29.9	96.8	107.0
09:33	8.52	9.19	315	54.0	30.7	30.2	97.3	107.5

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 3 - March 7, 2024

Time	O2 %	CO2 %	SO2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
09:34	8.73	8.97	324	76.3	33.4	31.0	81.2	92.4
09:35	8.48	9.17	314	54.6	27.5	31.0	97.0	110.5
09:36	9.15	8.67	305	52.4	27.1	30.4	94.5	105.4
09:37	8.79	8.97	306	47.0	29.6	29.8	95.0	107.4
09:38	8.97	8.84	300	51.5	29.5	30.0	92.4	104.8
09:39	8.71	9.03	306	62.3	31.8	30.5	91.4	102.5
09:40	8.33	9.33	318	74.3	38.4	31.3	94.0	105.2
09:41	8.66	9.11	335	95.6	19.7	30.2	77.9	89.0
09:42	8.42	9.30	320	55.8	25.5	29.3	94.9	106.6
09:43	9.07	8.78	309	59.1	30.5	29.3	87.0	100.5
09:44	8.73	9.06	309	57.5	28.1	28.8	91.4	102.4
09:45	8.94	8.86	299	60.7	29.3	28.9	86.6	98.5
09:46	8.70	9.05	304	57.6	27.7	29.0	92.1	102.6
09:47	8.39	9.29	315	61.9	33.6	29.4	91.1	103.5
09:48	8.61	9.14	334	92.4	39.9	30.4	77.8	89.2
09:49	8.34	9.25	323	54.2	28.5	30.1	93.3	104.3
09:50	9.03	8.81	314	54.8	28.9	29.2	88.7	102.1
09:51	8.60	9.09	318	52.3	32.9	30.5	93.2	105.0
09:52	8.93	8.87	308	49.3	29.9	30.9	90.2	100.3
09:53	8.71	9.05	305	46.7	33.4	31.2	94.5	105.9
09:54	8.41	9.29	308	57.9	23.6	30.8	92.7	105.5
09:55	8.67	9.06	321	77.1	28.6	30.7	82.2	91.0
09:56	8.54	9.22	310	49.1	28.3	30.8	97.9	109.1
09:57	9.11	8.74	301	51.0	26.3	30.0	95.3	105.7
09:58	8.81	9.01	303	53.3	29.1	28.9	93.1	104.3
09:59	9.00	8.82	297	44.3	25.7	28.7	93.1	102.8
10:00	8.77	8.98	298	58.3	30.2	28.8	89.6	101.0
10:01	8.51	9.19	302	63.3	31.2	28.6	90.2	102.9
10:02	8.73	9.04	318	89.4	30.5	28.7	78.3	88.8
10:03	8.48	9.24	310	55.9	30.9	28.4	93.5	104.8
10:04	9.18	8.69	300	49.9	28.7	28.9	88.2	98.1
10:05	8.84	8.96	298	67.8	33.9	29.5	89.8	101.5
10:06	9.08	8.75	291	64.5	30.7	29.7	91.6	101.8
10:07	8.78	8.99	295	69.7	33.5	30.4	89.5	99.3
10:08	8.42	9.27	308	79.0	37.0	31.2	87.7	101.5
10:09	8.66	9.04	327	106.0	38.6	32.5	76.4	86.7
10:10	8.41	9.20	315	61.0	33.4	32.8	92.7	106.0
10:11	9.06	8.76	304	58.6	31.0	32.8	93.1	103.6
10:12	8.63	9.07	310	61.8	21.1	31.9	90.4	102.6
10:13	8.98	8.87	303	51.0	28.8	31.7	94.0	104.1
10:14	9.33	8.56	286	49.9	30.9	31.9	91.2	102.3
10:15	8.35	9.31	307	58.0	34.4	31.9	89.5	102.7
10:16	8.65	9.11	331	81.7	34.5	32.3	76.3	87.6
10:17	8.30	9.37	325	59.3	40.3	33.0	94.7	106.2
10:18	8.99	8.84	318	54.7	40.4	33.3	90.6	105.3
10:19	8.62	9.13	317	51.5	40.4	33.5	92.7	106.3
10:20	8.84	8.93	308	47.0	40.4	34.2	93.4	103.7
10:21	8.62	9.11	311	57.2	40.4	35.2	94.4	106.6
10:22	8.26	9.37	319	63.1	40.4	37.1	90.9	105.2
10:23	8.52	9.19	338	97.6	40.4	38.3	78.0	90.3
10:24	8.30	9.36	324	0.0	40.4	39.2	97.8	110.4
10:25	8.98	8.82	311	0.0	40.4	39.8	86.2	101.1
10:26	8.60	9.12	313	0.0	40.4	40.4	92.5	104.3
10:27	8.91	8.88	305	0.0	40.4	40.4	96.9	107.2
10:28	8.66	9.07	306	0.0	37.2	40.1	92.6	103.7
10:29	8.33	9.32	311	0.0	36.1	39.7	90.5	103.1
10:30	8.61	9.05	325	85.4	36.1	39.2	80.9	91.2
10:31	8.33	9.25	314	56.1	36.1	38.8	94.0	107.5

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 3 - March 7, 2024

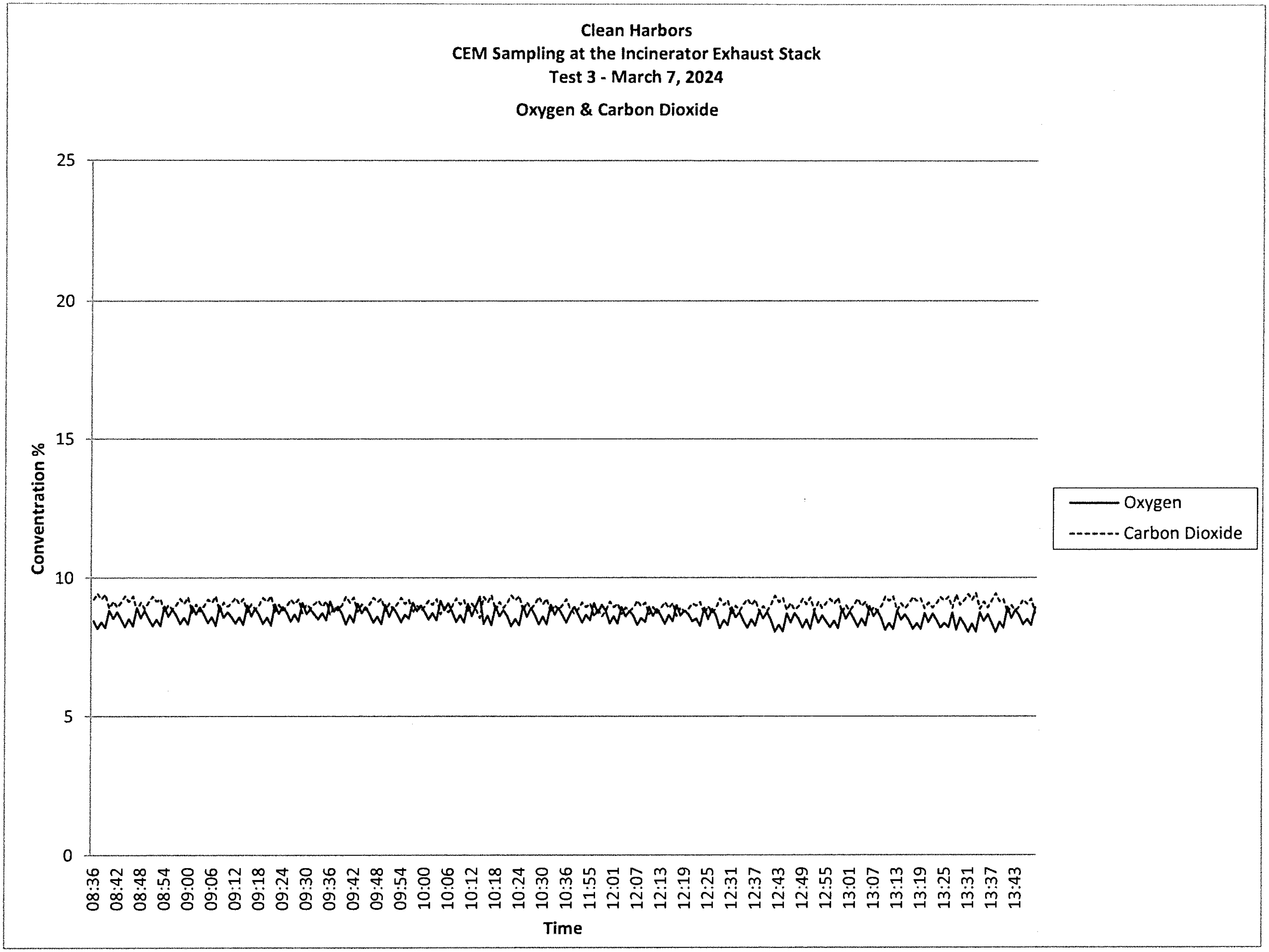
Time	O2 %	CO2 %	SO2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
10:32	9.03	8.75	306	59.0	36.1	38.4	85.2	98.7
10:33	8.67	9.02	306	58.0	36.1	37.9	90.1	102.4
10:34	8.91	8.86	299	55.2	36.1	37.5	92.7	103.1
10:35	8.66	9.03	303	59.5	36.2	37.1	91.2	102.1
10:36	8.40	9.23	308	65.6	36.2	36.7	89.1	101.0
11:50	8.73	8.88	314	62.6	37.1		87.3	99.5
11:51	8.96	8.71	302	56.6	33.9		88.4	98.1
11:52	8.69	8.88	309	68.2	37.6		87.1	97.7
11:53	8.40	9.12	305	73.8	40.3		83.7	95.9
11:54	8.67	8.95	321	112.9	41.3		71.9	82.1
11:55	8.49	9.07	311	67.9	36.7		89.1	98.7
11:56	9.08	8.60	300	66.9	33.8		84.9	95.6
11:57	8.73	8.89	302	65.0	39.2		85.9	96.4
11:58	9.03	8.62	294	62.5	27.4		86.0	95.8
11:59	8.82	8.81	294	70.1	22.2	34.9	85.3	94.3
12:00	8.36	9.15	304	79.6	33.9	34.6	80.6	90.0
12:01	8.61	8.94	325	119.6	37.2	35.0	73.2	80.8
12:02	8.35	9.07	315	76.2	29.8	34.2	91.4	100.2
12:03	8.95	8.69	309	75.7	30.1	33.2	85.2	96.2
12:04	8.61	8.93	310	67.9	34.4	32.5	88.0	97.9
12:05	8.80	8.81	305	66.3	33.9	32.2	91.0	101.1
12:06	8.65	8.92	309	80.8	35.4	32.3	88.2	97.0
12:07	8.30	9.18	310	94.3	30.9	31.5	82.9	93.5
12:08	8.55	8.98	327	136.2	34.5	32.2	75.4	84.0
12:09	8.42	9.11	316	79.1	34.7	33.5	90.2	100.1
12:10	8.96	8.68	310	79.7	33.2	33.4	83.5	93.9
12:11	8.63	8.95	316	87.0	41.1	33.8	87.9	97.7
12:12	8.87	8.74	306	69.4	11.8	32.0	90.0	100.0
12:13	8.64	8.91	308	74.3	22.5	31.2	89.0	98.9
12:14	8.36	9.12	312	88.4	26.7	30.5	86.0	96.4
12:15	8.66	8.91	323	121.2	31.3	30.2	75.5	87.4
12:16	8.45	9.09	313	69.4	29.7	29.6	93.2	102.0
12:17	9.01	8.63	305	70.9	29.7	29.5	86.2	96.8
12:18	8.65	8.93	308	87.9	34.5	29.5	86.4	96.1
12:19	8.81	8.79	305	78.9	32.4	29.3	86.2	96.7
12:20	8.69	8.89	309	82.6	33.4	29.3	87.4	96.6
12:21	8.44	9.08	308	82.2	35.7	28.8	86.1	96.0
12:22	8.53	9.00	324	130.1	40.7	31.7	73.5	83.9
12:23	8.27	9.12	321	84.1	36.4	33.0	88.8	100.6
12:24	8.92	8.70	312	75.1	32.8	33.6	86.0	95.3
12:25	8.52	8.98	317	76.8	29.9	33.5	86.9	97.0
12:26	8.88	8.73	308	65.3	24.6	33.0	92.6	102.6
12:27	8.65	8.91	307	64.3	31.0	33.1	91.5	100.4
12:28	8.19	9.26	318	101.9	28.6	32.5	87.5	96.6
12:29	8.48	9.02	338	169.6	39.6	33.3	71.2	80.5
12:30	8.31	9.18	325	93.9	36.4	33.6	89.8	99.5
12:31	8.93	8.68	311	82.4	33.7	33.4	85.2	95.5
12:32	8.58	8.99	316	95.0	37.0	33.0	87.2	96.9
12:33	8.75	8.81	310	72.0	32.1	32.6	92.4	102.2
12:34	8.45	9.05	322	107.8	38.6	33.2	85.7	98.4
12:35	8.21	9.23	322	108.5	41.1	34.3	92.1	99.1
12:36	8.51	9.01	336	163.2	44.0	36.2	74.9	84.4
12:37	8.28	9.20	320	94.6	35.6	36.7	89.3	101.0
12:38	8.80	8.78	316	98.0	37.8	37.6	86.3	96.7
12:39	8.55	8.98	319	99.2	7.8	34.4	90.1	99.6
12:40	8.76	8.80	312	86.6	24.1	33.2	86.3	96.8
12:41	8.48	9.04	316	89.6	31.8	33.0	88.1	97.7
12:42	8.07	9.35	333	115.7	46.0	33.9	91.1	101.6

Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 3 - March 7, 2024

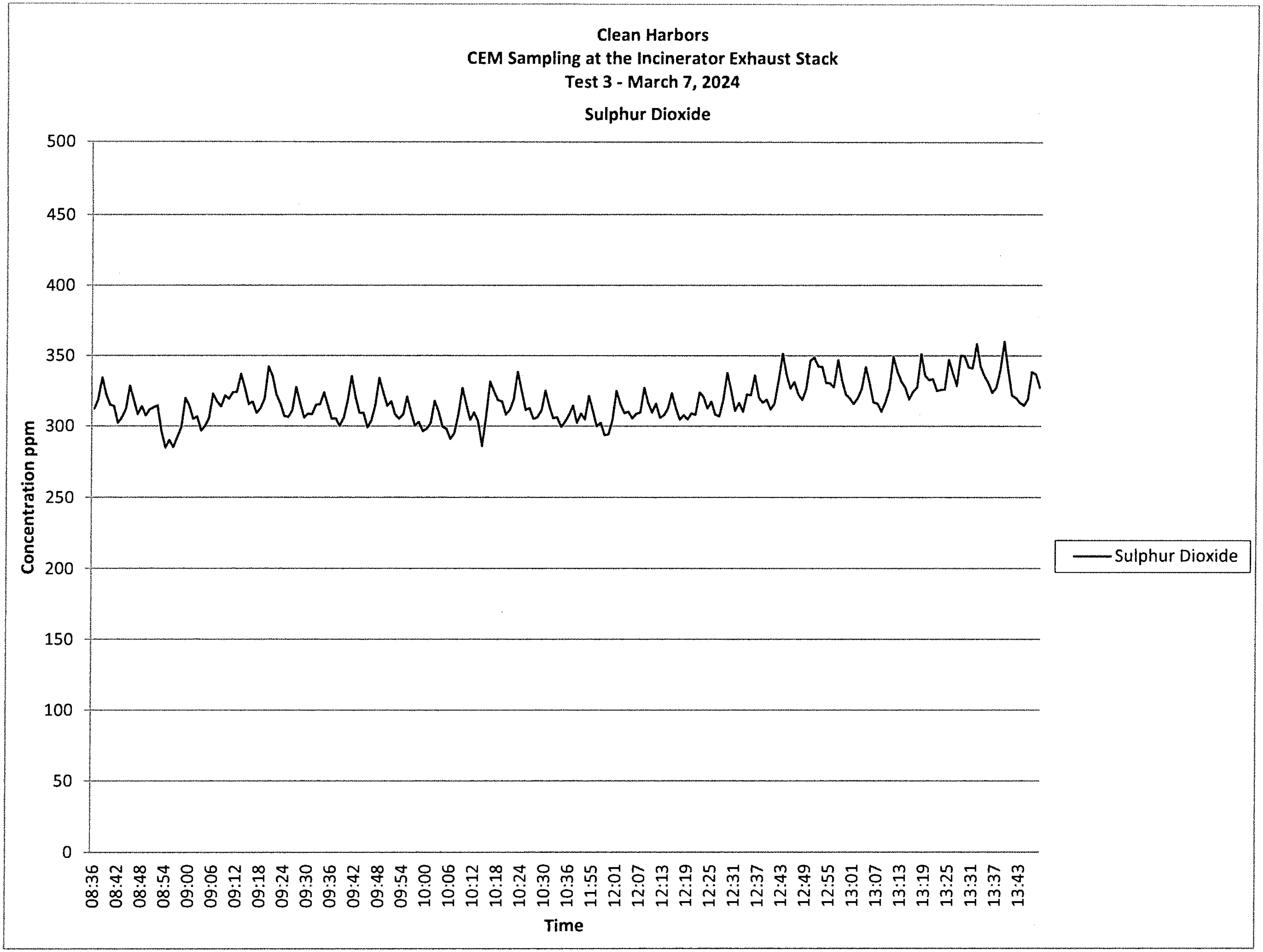
Time	O2 %	CO2 %	SO2 ppm	CO ppm	THC (ppm) 1-min	THC (ppm) 10-min	NO ppm	NOx ppm
12:43	8.30	9.12	351	173.1	43.1	35.0	77.1	84.5
12:44	8.07	9.27	336	90.4	25.6	33.7	92.4	103.9
12:45	8.72	8.84	327	86.3	31.7	32.7	86.7	96.9
12:46	8.39	9.09	331	82.1	37.6	32.1	91.5	102.1
12:47	8.72	8.85	322	74.3	32.7	31.8	90.3	99.8
12:48	8.53	8.98	319	67.5	34.6	31.5	97.3	106.0
12:49	8.21	9.24	326	81.4	38.2	34.5	96.9	106.4
12:50	8.49	9.04	346	108.8	24.7	34.6	82.9	91.3
12:51	8.17	9.29	349	82.5	19.5	33.3	97.8	106.4
12:52	8.77	8.81	342	81.4	29.6	31.7	92.2	101.4
12:53	8.38	9.14	342	83.3	32.4	30.6	92.4	103.9
12:54	8.64	8.90	331	72.8	30.9	31.2	89.5	99.4
12:55	8.43	9.09	330	81.3	36.0	31.6	93.5	103.0
12:56	8.22	9.24	327	79.8	39.4	31.8	96.9	107.8
12:57	8.45	9.07	347	100.8	41.1	32.6	80.4	91.9
12:58	8.19	9.29	332	73.8	39.6	33.1	96.2	105.9
12:59	8.87	8.75	322	71.2	23.3	31.6	91.8	102.8
13:00	8.53	9.01	320	74.4	34.9	32.7	91.8	103.3
13:01	8.78	8.82	316	62.9	30.3	33.7	91.9	101.7
13:02	8.53	9.02	320	61.1	29.5	33.7	96.1	106.6
13:03	8.24	9.24	326	62.7	36.3	34.1	95.4	107.7
13:04	8.52	8.98	342	88.5	39.2	35.0	82.8	93.4
13:05	8.28	9.14	330	57.1	35.8	34.9	99.9	109.9
13:06	8.97	8.66	317	51.8	31.8	34.2	94.9	105.1
13:07	8.61	8.96	316	65.8	31.7	33.2	90.0	101.5
13:08	8.80	8.81	310	64.0	22.9	31.6	88.6	98.4
13:09	8.53	8.98	317	73.4	30.8	32.3	91.5	102.0
13:10	8.12	9.32	326	75.4	23.9	31.2	90.0	101.5
13:11	8.37	9.17	349	129.9	38.9	32.1	75.2	85.0
13:12	8.16	9.33	338	70.2	37.2	32.8	96.9	108.3
13:13	8.80	8.82	331	73.5	35.7	32.8	90.2	100.4
13:14	8.50	9.07	327	63.8	36.8	32.5	94.9	105.2
13:15	8.67	8.90	319	61.8	34.0	32.4	96.1	105.5
13:16	8.47	9.08	324	66.1	35.2	32.7	93.6	103.0
13:17	8.17	9.31	328	77.9	20.5	31.6	93.6	106.3
13:18	8.37	9.16	351	120.4	11.2	30.4	77.8	90.1
13:19	8.17	9.25	336	71.9	32.4	30.6	95.4	106.0
13:20	8.73	8.90	333	79.8	32.7	31.5	89.0	102.4
13:21	8.40	9.11	333	68.4	37.5	31.3	93.6	105.0
13:22	8.71	8.92	325	60.7	30.1	30.6	93.1	101.9
13:23	8.48	9.08	326	60.8	30.5	30.1	95.4	104.6
13:24	8.21	9.31	326	75.4	28.9	29.3	94.5	106.8
13:25	8.37	9.17	347	121.5	35.2	29.4	76.6	86.5
13:26	8.22	9.31	338	67.8	35.7	29.5	95.2	107.5
13:27	8.74	8.90	328	56.4	33.8	30.8	91.4	103.4
13:28	8.13	9.39	350	92.9	49.1	34.6	88.7	101.2
13:29	8.56	9.02	350	71.5	33.3	34.7	89.6	100.7
13:30	8.35	9.18	342	53.5	29.4	34.3	99.5	109.7
13:31	8.06	9.40	341	70.6	40.6	34.7	93.4	107.5
13:32	8.35	9.20	358	110.2	44.6	36.1	76.1	86.7
13:33	8.06	9.44	342	63.6	41.0	37.1	98.0	109.0
13:34	8.75	8.88	335	59.6	30.5	37.3	86.9	97.8
13:35	8.44	9.14	330	60.5	35.3	37.3	94.1	106.6
13:36	8.68	8.93	324	62.0	33.9	37.1	95.5	104.6
13:37	8.38	9.18	327	65.6	38.3	37.6	94.2	105.5
13:38	8.06	9.44	340	73.4	27.7	35.4	92.7	104.8
13:39	8.41	9.15	360	93.4	15.9	33.7	83.3	93.4
13:40	8.21	9.23	340	50.3	28.8	33.6	98.0	108.4

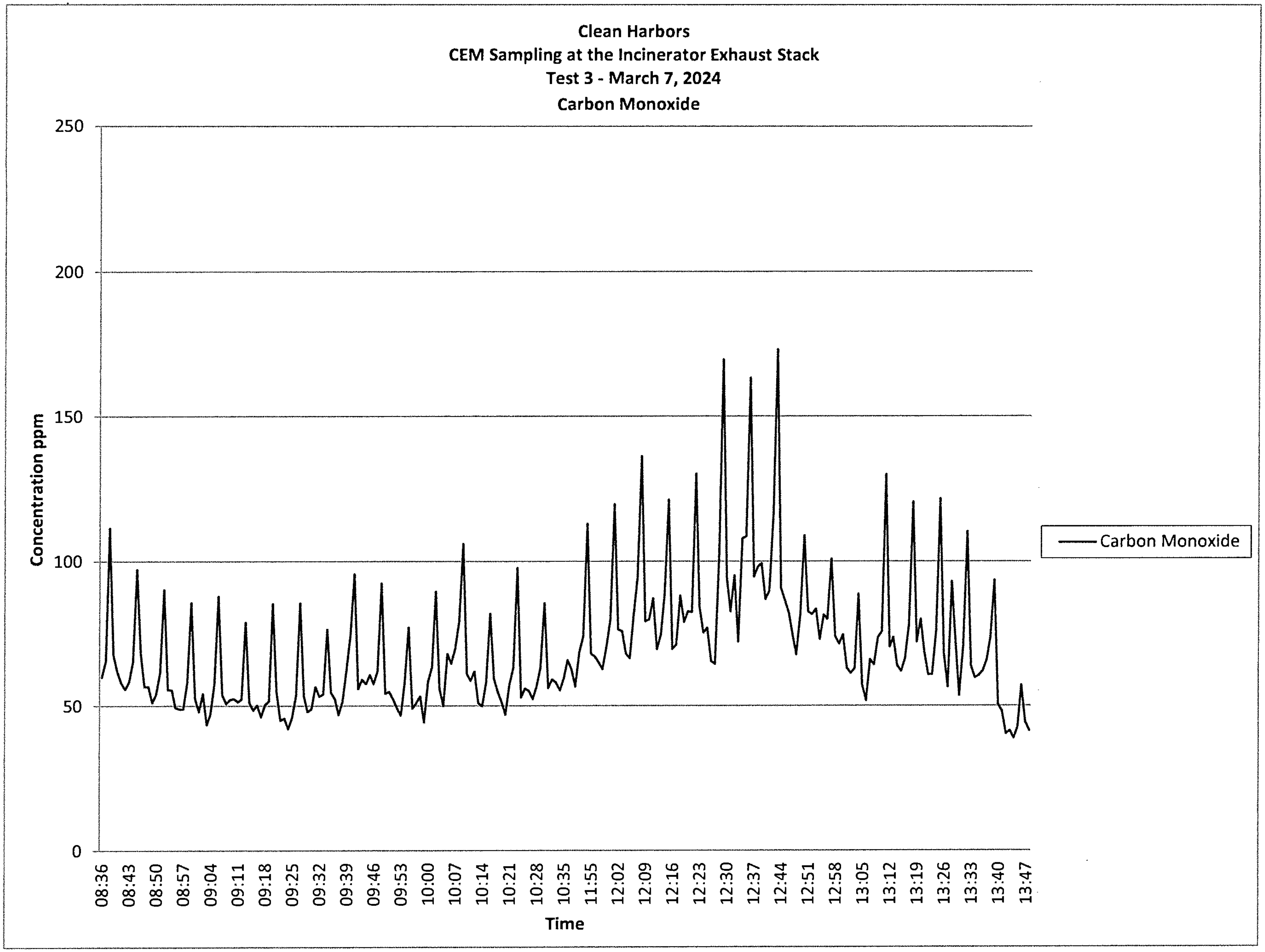
Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 3 - March 7, 2024

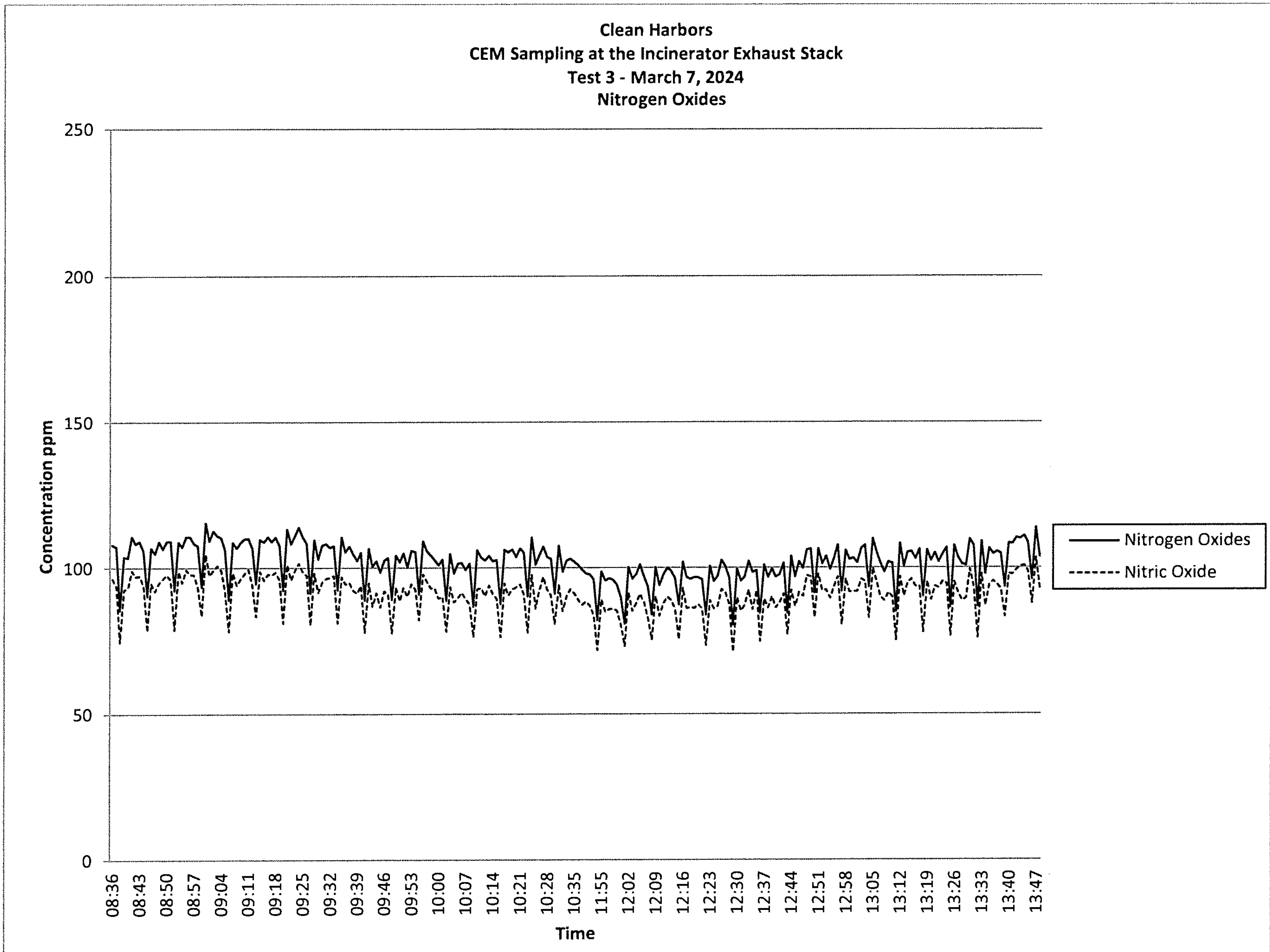
	O2	CO2	SO2	CO	THC (ppm)		NO	NOx
Time	%	%	ppm	ppm	1-min	10-min	ppm	ppm
13:41	8.95	8.74	322	48.1	29.7	32.6	97.7	108.1
13:42	8.55	9.01	320	40.4	32.5	31.4	99.3	110.2
13:43	8.84	8.82	316	41.4	28.5	30.1	100.5	109.9
13:44	8.64	8.97	315	38.8	28.4	29.9	100.7	110.9
13:45	8.32	9.21	319	42.8	33.1	29.7	98.7	108.5
13:46	8.51	9.05	338	57.0	36.3	29.9	87.7	96.0
13:47	8.30	9.25	336	44.4	37.4	29.8	103.4	113.8
13:48	8.94	8.74	327	41.4	33.5	30.4	92.8	103.7
Min	8.06	8.56	285	0.0	7.8	25.7	71.2	80.5
Max	9.33	9.45	360	173.1	49.1	40.4	104.8	115.6
Avg	8.59	9.04	318	68.4	32.0	31.8	90.8	101.8

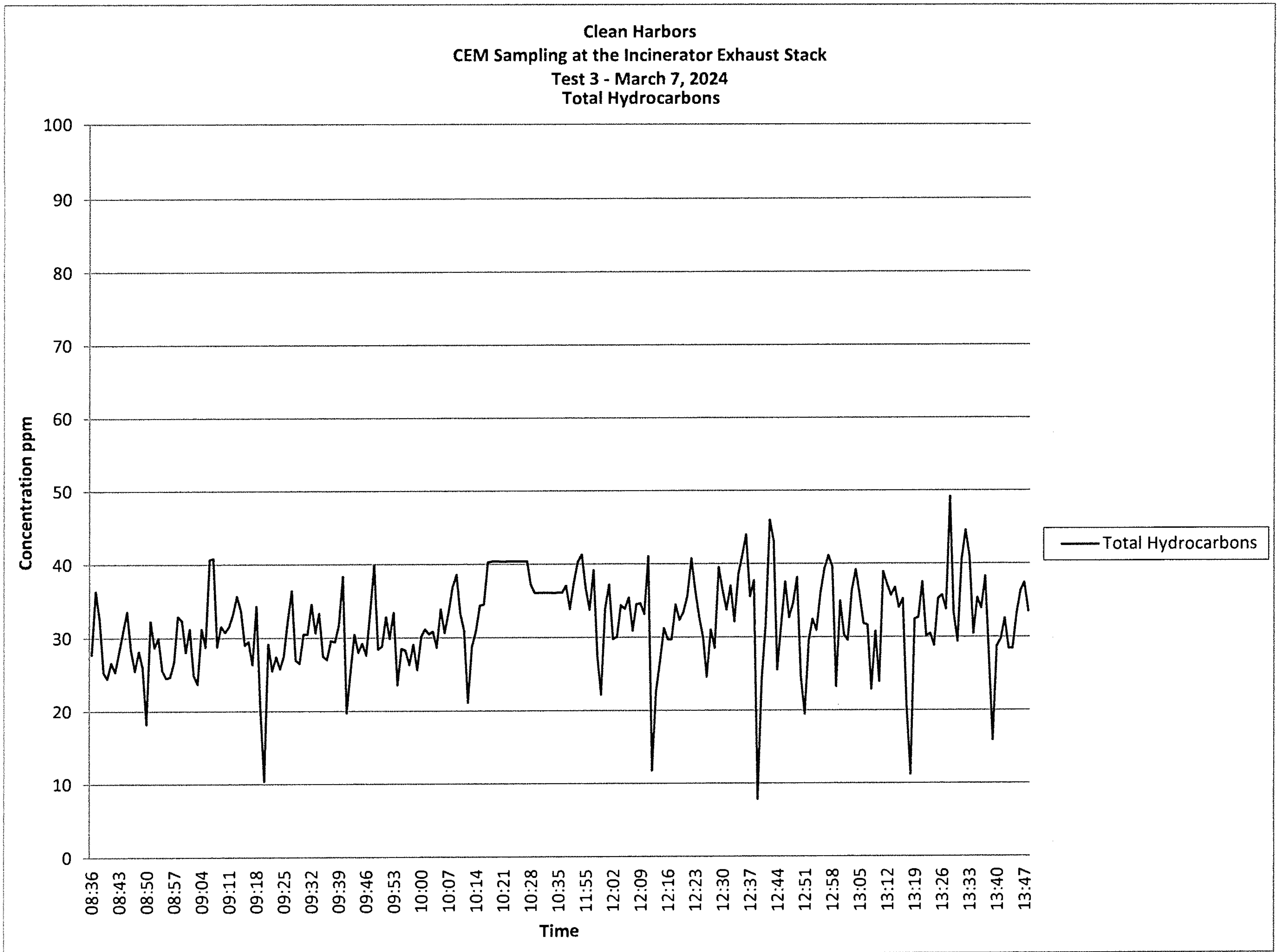


Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 3 - March 7, 2024
Oxygen & Carbon Dioxide
25
20
15
10
5
0
Conventration %
08:36
08:42
08:48
08:54
09:00
09:06
09:12
09:18
09:24
09:30
09:36
09:42
09:48
09:54
10:00
10:06
10:12
10:18
10:24
10:30
10:36
11:55
12:01
12:07
12:13
12:19
12:25
12:31
12:37
12:43
12:49
12:55
13:01
13:07
13:13
13:19
13:25
13:31
13:37
13:43
Time
Oxygen
Carbon Dioxide


Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 3 - March 7, 2024
Sulphur Dioxide
Concentration ppm
500
450
400
350
300
250
200
150
100
50
0
08:36
08:42
08:48
08:54
09:00
09:06
09:12
09:18
09:24
09:30
09:36
09:42
09:48
09:54
10:00
10:06
10:12
10:18
10:24
10:30
10:36
11:55
12:01
12:07
12:13
12:19
12:25
12:31
12:37
12:43
12:49
12:55
13:01
13:07
13:13
13:19
13:25
13:31
13:37
13:43
Time
Sulphur Dioxide


Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 3 - March 7, 2024
Carbon Monoxide
Concentration ppm
250
200
150
100
50
0
08:36
08:43
08:50
08:57
09:04
09:11
09:18
09:25
09:32
09:39
09:46
09:53
10:00
10:07
10:14
10:21
10:28
10:35
11:55
12:02
12:09
12:16
12:23
12:30
12:37
12:44
12:51
12:58
13:05
13:12
13:19
13:26
13:33
13:40
13:47
Time
Carbon Monoxide


Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 3 - March 7, 2024
Nitrogen Oxides
Concentration ppm
250
200
150
100
50
0
08:36
08:43
08:50
08:57
09:04
09:11
09:18
09:25
09:32
09:39
09:46
09:53
10:00
10:07
10:14
10:21
10:28
10:35
11:55
12:02
12:09
12:16
12:23
12:30
12:37
12:44
12:51
12:58
13:05
13:12
13:19
13:26
13:33
13:40
13:47
Time
Nitrogen Oxides
Nitric Oxide


Clean Harbors
CEM Sampling at the Incinerator Exhaust Stack
Test 3 - March 7, 2024
Total Hydrocarbons
Concentration ppm
100
90
80
70
60
50
40
30
20
10
0
08:36
08:43
08:50
08:57
09:04
09:11
09:18
09:25
09:32
09:39
09:46
09:53
10:00
10:07
10:14
10:21
10:28
10:35
11:55
12:02
12:09
12:16
12:23
12:30
12:37
12:44
12:51
12:58
13:05
13:12
13:19
13:26
13:33
13:40
13:47
Time
Total Hydrocarbons

APPENDIX 20

Process Data
(40 pages)

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	5C-PAC-FT	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHour	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-05	9:36:00	31.61	8.28	158.73	195.44	6.38	382.50	23.51	28.62	19294	10393	27.94	62512	1428	1131	865	468	190	190	-21.5	-47.0	-101.6	323.4
2024-03-05	9:37:00	31.67	7.99	159.77	196.16	5.74	344.25	23.51	28.70	18875	10275	27.37	60818	1429	1129	855	468	191	190	-15.2	-39.9	-93.4	333.2
2024-03-05	9:38:00	31.67	8.15	160.38	195.66	7.59	455.33	23.51	28.64	18981	10287	27.63	61402	1431	1127	852	468	192	190	-17.7	-42.0	-96.8	327.8
2024-03-05	9:39:00	31.79	8.01	161.10	197.46	6.33	380.03	23.51	28.94	18694	10180	27.84	61434	1440	1125	839	468	193	190	-13.3	-38.1	-89.6	336.7
2024-03-05	9:40:00	31.76	7.82	160.85	199.35	7.40	443.70	23.51	28.18	19006	10309	28.55	62790	1432	1124	844	468	194	190	-16.4	-39.3	-96.2	310.8
2024-03-05	9:41:00	31.40	8.35	159.58	195.75	5.68	340.73	23.51	28.98	19306	10298	28.46	62480	1437	1124	846	468	194	190	-31.3	-61.1	-117.9	291.6
2024-03-05	9:42:00	31.53	8.48	160.91	198.41	5.07	304.28	23.51	27.86	18775	10298	27.37	59981	1435	1123	838	468	194	190	-8.6	-29.9	-82.5	341.0
2024-03-05	9:43:00	31.85	8.03	159.91	198.59	5.32	318.90	23.51	28.90	19338	10421	27.37	59937	1438	1123	816	468	194	190	-18.7	-43.3	-99.7	324.5
2024-03-05	9:44:00	31.77	8.37	160.34	197.24	5.02	301.28	23.51	28.64	18850	10298	27.48	59803	1437	1123	832	468	194	190	-11.5	-35.3	-89.9	335.3
2024-03-05	9:45:00	31.65	8.14	160.01	196.29	5.03	301.50	23.51	28.56	19131	10292	28.43	61680	1434	1122	840	468	195	191	-14.6	-38.1	-94.7	328.4
2024-03-05	9:46:00	31.79	8.24	159.72	196.43	5.16	309.68	23.25	28.08	18956	10197	27.36	59306	1440	1120	844	468	195	191	-11.9	-36.4	-87.4	339.3
2024-03-05	9:47:00	31.68	8.13	160.25	196.47	4.88	292.50	23.25	28.58	19369	10303	28.16	61169	1429	1119	856	468	195	191	-15.2	-40.9	-94.3	311.3
2024-03-05	9:48:00	31.59	8.67	160.29	195.66	4.96	297.30	23.25	28.36	19531	10303	28.69	62605	1431	1119	871	468	195	191	-30.0	-61.6	-115.9	292.4
2024-03-05	9:49:00	31.67	7.90	160.14	196.92	5.08	304.80	23.25	28.20	18963	10303	27.37	59750	1435	1119	863	468	196	191	-8.1	-29.9	-82.2	339.8
2024-03-05	9:50:00	31.67	8.17	160.20	195.75	4.89	293.10	23.25	28.64	19456	10410	28.45	62283	1434	1120	855	468	195	191	-18.6	-43.9	-98.4	324.2
2024-03-05	9:51:00	31.43	7.91	159.82	197.46	5.33	319.95	23.25	28.02	19138	10309	27.92	60817	1436	1120	863	468	195	191	-12.4	-36.9	-88.4	332.9
2024-03-05	9:52:00	31.17	8.31	159.95	195.80	4.42	264.98	23.25	28.88	19294	10309	28.12	61021	1429	1119	867	468	195	191	-15.0	-41.8	-94.9	328.9
2024-03-05	9:53:00	31.40	8.00	159.35	196.56	5.73	343.50	23.25	27.84	19213	10309	27.77	60516	1432	1118	869	468	195	191	-11.5	-35.4	-87.0	339.3
2024-03-05	9:54:00	31.11	8.61	161.43	198.90	4.91	294.53	23.25	28.22	19419	10410	28.44	61937	1427	1116	878	469	195	191	-16.6	-43.0	-96.2	312.8
2024-03-05	9:55:00	31.08	8.12	159.30	196.16	5.26	315.75	23.25	28.34	19731	10416	29.01	63441	1423	1116	888	468	195	191	-33.2	-61.8	-118.5	292.1
2024-03-05	9:56:00	30.95	8.18	159.48	197.42	5.28	316.73	23.25	28.24	19263	10292	27.80	60858	1424	1116	895	469	195	191	-8.7	-31.4	-83.3	340.3
2024-03-05	9:57:00	31.19	8.98	159.54	197.15	4.93	295.73	23.25	28.08	19700	10427	27.29	59913	1422	1116	878	469	194	191	-19.4	-42.1	-99.7	322.9
2024-03-05	9:58:00	31.37	7.84	160.10	197.78	4.94	296.10	23.25	28.58	19288	10337	28.05	61534	1422	1116	883	468	194	191	-14.2	-38.0	-89.3	334.9
2024-03-05	9:59:00	31.35	8.23	160.25	196.38	4.92	295.05	23.25	28.24	19675	10365	28.59	62406	1419	1117	893	468	194	191	-15.2	-38.9	-94.4	328.6
2024-03-05	10:00:00	31.08	7.65	159.48	197.37	4.98	298.65	23.25	27.84	19144	10343	27.82	60820	1419	1117	888	468	194	191	-13.3	-38.4	-87.8	340.2
2024-03-05	10:01:00	31.26	8.77	159.48	197.37	5.21	312.60	23.25	28.90	19288	10332	28.11	61648	1410	1117	902	468	194	191	-16.0	-40.9	-94.8	312.5
2024-03-05	10:02:00	31.23	8.17	160.05	196.29	4.93	295.80	23.25	28.72	19881	10449	29.13	64095	1415	1117	908	468	194	190	-30.9	-59.4	-117.1	293.3
2024-03-05	10:03:00	31.05	8.40	160.53	196.88	5.06	303.30	23.25	28.74	19019	10348	27.42	60351	1416	1116	905	468	194	190	-7.6	-29.3	-81.1	341.5
2024-03-05	10:04:00	31.01	8.32	159.30	196.38	5.43	325.58	23.25	27.92	19694	10438	28.26	62231	1417	1116	897	468	193	190	-18.5	-43.9	-97.8	324.0
2024-03-05	10:05:00	31.43	8.68	160.01	197.10	5.05	302.78	23.25	28.18	19325	10337	27.48	60298	1421	1115	899	468	193	190	-12.9	-34.8	-88.3	334.8
2024-03-05	10:06:00	31.07	8.40	160.38	197.15	5.08	304.88	23.25	28.04	19731	10337	28.00	61184	1415	1114	913	468	193	190	-16.7	-41.6	-93.6	330.5
2024-03-05	10:07:00	31.17	8.64	159.24	196.65	4.97	298.28	23.25	28.72	19406	10337	28.04	61331	1416	1114	910	468	193	190	-11.9	-34.6	-89.1	340.0
2024-03-05	10:08:00	31.02	7.98	160.53	198.59	5.07	303.98	23.25	28.82	19531	10348	28.33	62064	1408	1114	917	468	193	190	-17.4	-42.1	-97.5	312.8
2024-03-05	10:09:00	30.99	8.96	160.10	196.70	5.36	321.60	23.25	28.72	19919	10449	29.30	64491	1406	1115	926	468	193	190	-31.8	-59.0	-117.3	292.9
2024-03-05	10:10:00	31.07	8.27	159.72	196.43	4.90	294.00	23.25	27.92	19413	10303	28.01	61749	1410	1114	925	468	193	190	-9.6	-30.8	-83.3	341.2
2024-03-05	10:11:00	31.07	7.94	159.58	197.01	5.21	312.45	23.25	28.58	19888	10438	28.65	63260	1415	1113	909	468	193	190	-18.2	-43.8	-98.8	324.1
2024-03-05	10:12:00	30.80	7.83	159.35	197.33	5.16	309.38	23.25	28.86	19363	10230	27.92	61337	1418	1112	912	468	193	190	-12.7	-37.0	-89.7	335.4
2024-03-05	10:13:00	31.04	8.07	160.67	196.25	5.12	307.13	23.25	28.24	19481	10343	28.06	61487	1416	1112	918	468	192	190	-14.7	-38.6	-93.3	329.5
2024-03-05	10:14:00	30.98	7.91	159.72	195.84	5.27	316.13	23.25	27.84	19388	10343	27.51	60377	1418	1112	925	468	192	190	-11.2	-34.4	-87.1	338.5
2024-03-05	10:15:00	30.62	8.39	160.38	196.25	5.45	326.85	23.25	28.96	19550	10444	28.02	61803	1417	1111	926	468	192	190	-15.3	-40.6	-95.8	315.0
2024-03-05	10:16:00	31.11	7.94	159.58	197.24	5.11	306.68	23.25	27.94	19894	10320	29.42	64937	1415	1111	927	468	192	189	-29.9	-59.4	-117.4	292.8
2024-03-05	10:17:00	31.16	8.44	160.10	198.00	5.66	339.60	23.25	28.98	19163	10208	27.03	59684	1424	1110	904	468	192	189	-9.1	-30.9	-83.7	342.3
2024-03-05	10:18:00	30.81	8.14	160.01	198.36	5.62	337.43	23.25	28.74	19863	10410	28.33	62658	1427	1109	892	467	191	189	-18.8	-45.5	-100.7	326.1
2024-03-05	10:19:00	30.96	8.30	159.63	197.96	6.64	398.63	23.25	28.04	19156	10393	28.11	61928	1423	1110	898	467	191	189	-11.7	-34.8	-88.7	334.9
2024-03-05	10:20:00	30.92	8.50	159.91	197.60	5.56	333.75	23.25	28.32	19513	10292	28.32	61873	1420	1110	898	467	191	189	-16.6	-39.4	-95.3	329.1
2024-03-05	10:21:00	30.74	8.52	159.58	194.99	5.47	328.05	23.25	28.08	19450	10281	28.19	61941	1421	1110	900	467	191	189	-12.5	-33.8	-89.4	340.1
2024-03-05	10:22:00	31.19	8.36	160.67	196.20	5.96	357.68	23.25	28.58	19581	10371	28.33	62711	1418	1109	906	467	191	188	-18.2	-43.3	-98.1	315.4
2024-03-05	10:23:00	30.96	8.15	159.86	198.41	5.65	339.23	23.25	28.00	19856	10388	29.21	64651	1417	1108	914	467	191	188	-32.5	-60.0	-117.6	292.2
2024-03-05	10:24:00	30.95	8.20	160.01	197.33	6.14	368.63	23.25	28.84	19025	10264	27.75	61800	1419	1108	914	467	191	188	-10.5	-31.3	-84.5	342.1
2024-03-05	10:25:00	30.65	7.97	159.86	196.11	6.58	394.80	23.25	28.26	19644	10376	28.24	63040	1419	1108	904	467	190	188	-19.1	-43.8	-101.1	326.8
2024-03-05	10:26:00	30.99	8.48	159.54	197.33	6.42	384.98	23.25	28.48	19263	10376	28.06	61984	1413	1109	904	467	191	188	-14.4	-35.9	-91.4	338.9
2024-03-05	10:27:00	30.63	8.15	160.01	197.78	6.60	396.00	23.25	28.34	19481	10376	28.52	62782	1407	1110	900	467	191	188	-16.3	-37.0	-95.1	332.2
2024-03-05	10:28:00	30.72	8.19	159.01	195.62	5.99	359.18	23.25	27.90	19344	10388	27.93	61604	1421	1110	887	467	191	188	-12.5	-35.9	-89.3	341.2
2024-03-05	10:29:00	30.78	8.00	160.53	197.82	5.44	326.33	23.25	27.78	19469	10388	28.00	61932	1417	1108	873	467	191	188	-17.9	-42.5	-97.6	315.7
2024-03-05	10:30:00	30.80	8.38	159.86	196.29	5.91	354.60	23.25	28.92	19963	10489	29.53	65792	1415	1107	852	466	191	188	-31.2	-59.1	-118.7	294.9
2024-03-05	10:31:00	30.80	8.42	160.72	198.41	7.91	474.75	23.25	27.74	19038	10343	27.70	61587	1412	1108	838	466	191	188	-9.0	-29.5	-82.8	343.8
2024-03-05	10:32:00	30.54	8.27	159.58	196.61	6.24	374.63	23.25	28.90	19800	10461	28.93	64280	1410	1110	823	466	191	188	-18.6	-42.1	-99.5	327.0
2024-03-05	10:33:00	30.99	8.07	160.34	198.90	6.37	382.05	23.25	27.94	19219	10337	28.11	62351	1415	1109	815	466	191	188	-13.8	-34.3	-90.6	336.6
2024-03-05	10:34:00	30.60	8.32	160.29	195.93	5.68	340.73	23.25	28.76	19525	10438	28.20	62390	1408	1109	802	466	191	188	-16.5	-39.6	-96.2	332.6
2024-03-05	10:35:00	30.80	8.15	159.05	197.24	5.88	352.73	23.25	28.88	19231	10337	28.30	62833	1417	1108	804	466	191	188	-13.9	-35.9	-90.5	343.3
2024-03-05	10:36:00	30.60	8.30	160.34	198.09	5.40	324.15	23.25	28.04	19581	10337	28.68	63498	1408	1107	805	466	191	188	-18.8	-43.0	-98.8	315.8
2024-03-05	10:37:00	30.69	8.41	159.91	196.25	5.30	318.08	23.25	28.82	19744	10337	30.39	67716	1409	1106	815	466	191	188	-35.2	-61.8	-120.5	296.1
2024-03-05	10:38:00	30.80	8.25	159.95	196.07	5.86	351.38	23.25	27.96	19144	10332	28.03	62517	1410	1106	816	466	191	188	-9.7	-32.1	-85.5	342.8
2024-03-05	10:39:00	30.99	8.47	159.82	198.23	6.38	382.95	23.25	28.26	19794	10326	28.91	64472	1409	1107	815	466	190	188	-21.6	-44.9	-102.4	330.2
2024-03-05	10:40:00	31.07	8.03	159.05	197.46	5.47	328.35	23.25	27.74	19281	10433	28.57	63342	1409	1106	822	466	190	188	-15.1	-38.9	-90.9	338.6
2024-03-05	10:41:00	31.62	7.98	160.48	196.07	6.23	373.50	23.25	28.64	19763	10438	28.63	63427	1408	1106	826	466	190	188	-17.4	-42.4	-96.9	333.6
2024-03-05	10:42:00	32.15	7.72	159.72	197.60	5.35	321.23	23.25	28.58	19331	10337	28.57	63011	1412	1107	822	466	190	188	-11.8	-34.8	-89.5	341.8
2024-03-05	10:43:00	32.37	8.38	160.44	198.63	5.37	321.98	23.25	28.12	19531	10444	28.24	62761	1403	1109	815	466	191	187	-16.9	-41.4	-97.7	316.4

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHour	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-05	10:44:00	33.02	8.33	159.67	197.73	5.59	335.18	23.25	28.84	19763	10444	30.05	66678	1410	1112	818	466	191	187	-30.1	-56.5	-118.2	296.6
2024-03-05	10:45:00	32.70	8.29	159.95	198.09	5.17	310.13	23.25	27.88	19325	10337	28.16	62795	1419	1116	786	466	192	187	-7.7	-30.1	-83.3	345.2
2024-03-05	10:46:00	32.70	8.66	160.10	196.25	5.03	301.80	23.25	28.28	19750	10354	28.34	63111	1426	1118	742	466	192	187	-14.9	-40.5	-97.7	326.8
2024-03-05	10:47:00	32.42	8.15	159.44	198.45	5.11	306.53	23.96	27.76	19269	10354	27.40	60517	1426	1122	711	466	193	188	-8.8	-35.1	-90.3	339.6
2024-03-05	10:48:00	32.25	8.29	160.05	198.00	4.94	296.25	23.96	28.18	19475	10354	28.37	62441	1429	1123	699	466	194	188	-13.0	-39.0	-92.9	334.1
2024-03-05	10:49:00	32.19	8.19	159.39	198.09	5.28	316.95	23.96	27.86	19225	10354	28.05	61574	1435	1124	662	466	195	189	-8.5	-30.8	-85.8	342.1
2024-03-05	10:50:00	32.25	9.01	159.91	196.11	4.95	296.70	23.96	28.60	19488	10343	28.60	62758	1430	1125	656	466	195	189	-13.8	-40.4	-95.4	317.1
2024-03-05	10:51:00	32.10	8.49	159.39	196.61	5.04	302.63	23.96	28.78	19788	10343	29.13	63697	1436	1124	629	467	196	189	-27.7	-56.1	-114.5	294.8
2024-03-05	10:52:00	32.01	8.27	159.91	196.56	4.89	293.18	23.96	27.78	19125	10236	27.24	59950	1445	1124	585	467	196	189	-4.7	-27.1	-80.4	342.6
2024-03-05	10:53:00	32.15	8.62	160.01	197.42	5.08	304.80	23.96	28.64	19744	10225	28.28	62329	1440	1125	551	467	196	189	-15.3	-43.9	-98.9	327.3
2024-03-05	10:54:00	31.49	8.18	159.35	195.84	5.13	307.73	23.96	28.26	19225	10197	27.55	60289	1438	1127	554	467	196	190	-8.4	-34.3	-86.3	337.1
2024-03-05	10:55:00	31.77	8.24	160.85	198.09	4.93	295.73	23.96	28.34	19488	10202	28.21	61401	1431	1128	559	467	196	190	-12.5	-38.3	-92.8	331.5
2024-03-05	10:56:00	31.47	8.27	159.15	196.02	5.03	301.50	23.96	28.02	19125	10332	27.36	59670	1430	1128	542	468	196	190	-8.5	-32.8	-86.0	341.5
2024-03-05	10:57:00	31.38	8.55	159.58	198.68	5.00	300.15	23.96	28.44	19438	10332	28.30	61760	1425	1129	549	468	196	190	-11.1	-36.4	-93.4	315.6
2024-03-05	10:58:00	31.49	8.31	159.05	198.23	5.10	306.23	23.96	28.68	19663	10332	29.49	64538	1427	1129	540	468	196	190	-28.0	-57.4	-115.5	294.2
2024-03-05	10:59:00	31.91	9.02	160.05	197.46	4.93	295.50	23.96	28.52	19094	10332	27.54	60311	1430	1129	508	468	197	190	-5.0	-29.0	-81.0	332.3
2024-03-05	11:00:00	31.61	8.77	159.72	197.24	5.22	312.98	23.96	27.92	19856	10354	28.26	61848	1438	1129	472	469	196	190	-14.8	-41.5	-96.5	274.9
2024-03-05	11:01:00	31.11	8.54	159.77	196.61	5.04	302.18	23.96	28.78	19356	10455	27.74	60332	1431	1129	470	469	196	191	-8.4	-33.3	-87.2	273.8
2024-03-05	11:15:00	30.90	8.41	159.95	195.84	6.77	406.13	23.33	28.14	19300	12320	27.78	60578	1434	1124	490	470	196	190	-10.9	-34.0	-89.9	272.3
2024-03-05	11:16:00	30.87	8.53	159.95	195.93	6.11	366.68	23.33	28.12	19825	14242	29.08	63340	1433	1125	516	470	196	190	-13.3	-39.0	-95.2	266.9
2024-03-05	11:17:00	30.98	8.76	159.91	194.49	7.40	443.78	23.33	27.88	19494	13191	30.20	65956	1433	1125	535	470	196	190	-23.0	-56.1	-107.5	234.1
2024-03-05	11:18:00	30.89	8.75	159.86	197.96	6.25	375.23	23.33	28.72	19656	13107	28.89	63407	1423	1123	555	470	196	190	-14.0	-39.9	-98.7	248.2
2024-03-05	11:19:00	30.83	8.25	159.58	194.90	5.50	330.00	23.33	29.00	20081	14388	28.39	62690	1421	1123	576	470	196	190	-15.1	-41.4	-104.2	258.7
2024-03-05	11:20:00	30.98	8.83	160.14	198.09	6.17	370.13	23.33	27.80	19113	13803	27.51	60896	1425	1124	578	470	196	190	-5.0	-29.0	-84.8	277.3
2024-03-05	11:21:00	30.84	8.49	160.29	195.71	5.86	351.83	23.33	28.82	19606	13792	28.24	62663	1429	1123	568	470	196	190	-16.4	-43.8	-101.2	262.5
2024-03-05	11:22:00	30.69	8.50	159.91	198.18	5.04	302.10	23.33	28.36	19319	12972	28.36	62601	1427	1123	579	470	196	190	-11.1	-34.1	-92.5	272.8
2024-03-05	11:23:00	30.93	8.52	160.25	196.83	5.06	303.83	23.33	28.68	19494	11815	28.52	62745	1424	1123	595	470	196	190	-15.0	-39.9	-97.1	266.5
2024-03-05	11:24:00	30.89	8.42	160.29	196.47	5.38	322.88	23.33	28.42	19363	11275	29.64	65284	1430	1121	606	470	195	190	-23.6	-54.4	-108.4	229.9
2024-03-05	11:25:00	31.16	8.66	160.76	197.15	4.98	298.65	23.33	28.14	19238	11579	28.45	63052	1420	1119	621	470	195	190	-16.9	-42.0	-98.6	249.0
2024-03-05	11:26:00	30.92	8.68	160.05	195.75	4.79	287.48	23.33	28.68	19894	12242	28.90	64092	1413	1119	640	470	195	189	-16.6	-38.3	-104.9	261.8
2024-03-05	11:27:00	30.90	8.60	159.72	197.33	4.78	287.03	23.33	28.66	18994	11303	28.06	62352	1420	1119	635	470	195	189	-7.1	-30.1	-85.2	282.4
2024-03-05	11:28:00	30.50	8.84	159.11	196.43	5.03	301.58	23.33	27.96	19513	11242	28.49	63209	1421	1119	628	470	194	189	-16.8	-40.8	-99.2	263.9
2024-03-05	11:29:00	30.81	8.62	159.63	197.46	4.80	288.08	23.33	28.74	19219	10405	28.26	62494	1423	1116	635	470	194	189	-12.9	-36.4	-93.8	277.4
2024-03-05	11:30:00	30.81	8.35	160.34	195.93	5.02	300.98	23.33	28.92	19344	10820	28.63	63191	1418	1115	649	470	194	189	-13.4	-39.1	-97.6	268.0
2024-03-05	11:31:00	30.87	8.58	160.48	195.75	5.05	302.70	23.33	28.16	19175	9955	29.68	65529	1420	1114	662	470	193	189	-26.8	-57.6	-108.7	234.3
2024-03-05	11:32:00	31.08	8.46	160.81	195.93	5.03	301.95	23.33	28.44	19456	10320	29.05	64400	1412	1114	668	469	194	189	-15.5	-42.3	-98.5	251.1
2024-03-05	11:33:00	30.65	8.83	160.62	196.65	5.12	307.43	23.33	28.06	19625	10309	27.85	61991	1410	1114	690	469	194	188	-16.6	-40.3	-103.9	261.3
2024-03-05	11:34:00	30.62	8.42	161.43	196.88	4.98	298.88	23.33	28.82	18850	9607	27.88	62139	1413	1113	684	469	194	188	-6.8	-29.3	-84.0	281.8
2024-03-05	11:35:00	30.38	8.33	160.25	197.78	5.22	312.90	23.14	27.70	19588	9601	29.17	64658	1415	1113	682	469	193	188	-17.7	-42.5	-100.1	264.8
2024-03-05	11:36:00	30.86	9.02	161.15	199.08	5.48	328.65	23.14	27.94	19250	9371	28.45	63070	1413	1113	682	469	193	188	-12.1	-34.5	-91.8	276.8
2024-03-05	11:37:00	30.62	8.81	161.10	198.23	7.57	453.98	23.14	27.92	19450	9691	28.70	63297	1412	1113	700	469	193	188	-15.7	-41.9	-97.5	267.9
2024-03-05	11:38:00	30.35	8.89	160.67	198.23	6.64	398.18	23.14	27.82	19281	9702	29.43	64959	1420	1112	707	469	193	188	-25.8	-57.0	-108.5	233.8
2024-03-05	11:39:00	30.71	8.81	161.62	196.29	5.75	345.15	23.14	28.06	19375	9933	28.84	63772	1410	1111	721	469	193	188	-18.9	-43.9	-100.8	253.4
2024-03-05	11:40:00	30.60	8.34	160.20	195.21	5.64	338.48	23.14	28.64	19694	10152	27.92	61992	1405	1111	735	468	193	188	-20.9	-40.3	-105.9	265.4
2024-03-05	11:41:00	30.56	8.82	160.14	196.47	5.75	345.15	23.14	28.92	19100	10152	28.11	62506	1406	1111	737	468	193	188	-9.9	-32.3	-86.0	283.3
2024-03-05	11:42:00	30.63	8.41	161.24	196.88	6.42	384.90	23.14	28.74	19663	10326	28.34	63297	1411	1111	734	468	193	188	-18.0	-42.9	-100.8	266.0
2024-03-05	11:43:00	30.30	8.37	160.62	196.74	7.91	474.45	23.14	28.44	19263	10326	27.73	61401	1411	1109	737	468	193	188	-13.1	-34.0	-93.1	276.8
2024-03-05	11:44:00	30.29	8.30	161.19	197.10	6.45	387.08	23.14	27.82	19550	10303	28.77	63621	1410	1108	755	468	193	188	-18.1	-40.6	-99.4	268.3
2024-03-05	11:45:00	30.44	8.62	160.14	195.35	7.91	474.45	23.14	27.98	19531	10202	29.96	66401	1412	1107	762	468	193	188	-27.9	-56.5	-110.3	233.4
2024-03-05	11:46:00	30.56	9.10	161.71	197.33	7.20	432.08	23.14	28.70	19413	10489	28.69	64052	1406	1106	774	467	193	188	-18.6	-42.9	-100.2	248.7
2024-03-05	11:47:00	30.60	8.48	160.72	195.35	5.31	318.45	23.14	28.72	19938	10472	28.40	63517	1399	1107	771	467	193	188	-18.0	-40.4	-104.8	260.1
2024-03-05	11:48:00	30.74	8.80	161.00	196.11	6.78	406.95	23.14	28.00	19194	10253	28.32	63432	1406	1108	770	467	193	188	-11.0	-32.3	-86.9	281.8
2024-03-05	11:49:00	30.51	8.29	159.20	196.43	7.88	472.50	23.14	28.14	19681	10354	28.40	63519	1411	1107	762	467	192	187	-16.7	-41.9	-100.6	264.1
2024-03-05	11:50:00	30.48	8.74	160.38	197.46	6.43	385.88	23.14	28.84	19113	10236	28.39	63224	1405	1107	761	467	192	187	-13.7	-36.0	-92.9	273.7
2024-03-05	11:51:00	30.68	8.53	161.15	197.46	7.91	474.68	23.14	28.34	19450	10242	29.46	65521	1409	1109	775	467	192	187	-15.8	-40.1	-98.1	268.5
2024-03-05	11:52:00	30.35	8.50	160.34	197.60	7.88	472.50	23.14	28.86	19363	10343	30.03	66762	1412	1108	742	466	192	187	-31.4	-60.4	-113.3	234.9
2024-03-05	11:53:00	30.11	8.50	130.74	196.11	6.09	365.55	23.14	28.18	20031	10562	28.47	63356	1399	1107	756	466	192	187	-28.7	-51.3	-107.4	250.0
2024-03-05	11:54:00	30.36	8.53	131.45	197.37	5.52	331.28	23.14	28.14	20606	10573	28.44	63510	1391	1108	771	466	190	187	-30.1	-52.3	-115.3	259.8
2024-03-05	11:55:00	30.30	8.40	131.54	197.78	7.64	458.48	23.14	27.86	19738	10343	27.94	62936	1388	1109	780	465	187	186	-23.0	-44.3	-95.9	278.1
2024-03-05	11:56:00	30.47	8.70	130.78	197.10	7.15	428.78	23.14	28.48	20569	10551	28.63	65421	1383	1112	789	465	185	185	-32.5	-56.0	-112.7	258.3
2024-03-05	11:57:00	30.41	8.62	131.11	194.54	5.21	312.45	23.14	28.26	20000	10433	28.08	64398	1377	1112	793	464	183	185	-26.8	-50.0	-105.4	267.6
2024-03-05	11:58:00	30.42	8.41	132.39	195.44	7.35	441.23	23.14	28.28	20244	10461	29.53	68316	1367	1111	798	463	182	184	-33.7	-58.0	-113.6	256.5
2024-03-05	11:59:00	30.33	8.76	130.31	195.30	7.89	473.48	23.14	28.14	20219	10337	29.22	67996	1371	1111	807	463	182	183	-45.0	-75.3	-127.4	225.4
2024-03-05	12:00:00	30.57	8.68	146.64	196.43	6.89	413.10	23.14	28.60	19969	10320	28.88	67607	1361	1109	819	462	181	182	-28.8	-53.3	-110.4	238.3
2024-03-05	12:01:00	30.35	8.83	161.38	197.82	7.92	475.13	23.14	28.02	20431	10320	28.22	66392	1364	1107	829	461	182	182	-27.7	-49.6	-114.7	253.9
2024-03-05	12:02:00	30.74	8.45	162.61	198.86	6.56	393.75	23.14	28.50	19425	10219	28.73	67578	1370	1104	837	461	184	182	-14.2	-38.0	-92.0	271.6
2024-03-05	12:03:00	30.05	8.60	161.24	195.93	6.14	368.18	23.14	28.80	19981	10438	28.86	67514	1370	1104	844	460	185	182	-23.8	-48.0	-107.2	260.4
2024-03-05	12:04:00	30.12	8.56	161.81	198.50	4.70	281.78	23.14	28.60	19488	10320	28.06	64277	1371	1102	850	460	186	182	-19.1	-43.3	-97.7	271.8

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHour	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-05	12:05:00	30.60	8.58	161.00	196.16	7.45	446.78	23.14	28.52	19669	10320	28.59	64988	1368	1100	859	460	187	183	-19.9	-45.9	-101.0	264.5
2024-03-05	12:06:00	30.11	8.54	159.95	195.89	5.69	341.10	23.14	28.06	19431	10219	29.96	67377	1370	1100	870	459	188	183	-33.2	-64.5	-114.5	231.8
2024-03-05	12:07:00	30.24	8.58	161.81	195.08	5.99	359.10	23.14	27.78	19794	10332	28.81	64736	1372	1098	873	459	189	183	-20.7	-43.1	-101.8	246.8
2024-03-05	12:08:00	29.96	8.75	161.10	196.02	5.97	358.20	23.14	28.34	20213	10433	28.35	63863	1369	1097	869	459	190	183	-21.3	-43.3	-109.4	261.2
2024-03-05	12:09:00	29.81	8.39	161.34	197.19	7.92	474.90	23.14	28.08	19219	10230	28.04	63164	1375	1096	876	459	190	184	-14.6	-38.9	-90.4	282.2
2024-03-05	12:10:00	30.72	8.64	161.43	198.00	7.25	435.00	23.14	28.70	19706	10343	29.03	65395	1374	1095	891	459	190	184	-23.0	-47.4	-105.3	261.4
2024-03-05	12:11:00	30.81	8.40	161.28	194.99	7.25	434.78	23.14	28.84	19306	10214	27.98	63001	1377	1095	904	459	190	184	-17.5	-41.4	-95.6	272.8
2024-03-05	12:12:00	31.83	8.57	160.57	197.01	7.26	435.60	23.14	28.60	19500	10337	28.40	63480	1372	1095	915	459	190	185	-19.5	-43.1	-100.6	265.6
2024-03-05	12:13:00	31.79	8.16	160.72	195.48	6.72	403.43	23.14	28.48	19569	10208	29.28	65362	1374	1097	924	459	190	185	-29.3	-57.5	-111.2	232.1
2024-03-05	12:14:00	31.79	8.74	159.77	198.63	6.12	367.20	23.14	28.68	19663	10202	28.63	63907	1369	1099	926	459	191	185	-20.8	-43.9	-101.2	249.1
2024-03-05	12:15:00	31.74	8.35	158.73	195.98	5.81	348.83	23.14	28.34	20138	10326	28.45	63701	1372	1100	924	459	191	185	-24.5	-45.9	-109.2	260.4
2024-03-05	12:16:00	31.53	8.87	159.15	198.41	5.38	322.95	23.14	28.14	19338	10202	28.30	63172	1376	1102	897	459	191	185	-13.9	-36.8	-87.2	280.0
2024-03-05	12:17:00	31.14	8.54	157.83	195.35	5.26	315.53	23.14	28.16	19669	10202	28.50	63593	1376	1103	908	459	191	185	-22.7	-47.0	-103.8	262.8
2024-03-05	12:18:00	31.32	8.66	160.53	195.84	7.75	464.93	23.14	28.72	19331	10202	28.23	62773	1386	1105	913	459	192	185	-16.6	-40.4	-94.8	273.1
2024-03-05	12:19:00	31.05	8.42	158.21	196.56	5.65	338.93	23.14	28.98	19663	10202	28.28	62631	1396	1106	916	459	192	186	-18.7	-42.4	-99.3	266.9
2024-03-05	12:20:00	31.47	8.76	158.45	194.63	7.92	475.13	23.14	28.64	19238	10303	30.15	66797	1406	1109	910	458	193	186	-27.0	-58.4	-110.2	233.5
2024-03-05	12:21:00	31.65	9.21	159.35	195.44	7.43	446.03	23.14	27.82	19481	10303	28.45	63112	1400	1111	906	459	194	186	-18.7	-42.8	-99.9	249.9
2024-03-05	12:22:00	31.76	8.22	158.45	197.42	7.81	468.38	23.14	28.96	19806	10343	28.42	63159	1403	1113	894	459	195	186	-21.2	-45.3	-106.8	262.7
2024-03-05	12:23:00	31.64	8.60	159.24	195.71	7.65	458.78	23.14	27.94	19050	10214	28.68	63699	1417	1116	877	459	195	187	-9.1	-32.3	-84.3	280.8
2024-03-05	12:24:00	31.61	8.42	157.92	196.97	6.02	360.90	23.14	28.30	19781	10343	28.17	62435	1413	1118	863	459	195	187	-18.3	-42.4	-99.9	266.6
2024-03-05	12:25:00	31.79	8.49	158.02	198.41	5.36	321.83	23.14	28.44	19344	10298	28.01	61648	1423	1120	849	459	196	188	-12.8	-37.3	-89.7	276.1
2024-03-05	12:26:00	31.76	8.68	158.64	199.04	6.76	405.83	23.14	28.68	19475	10309	28.28	61957	1420	1122	846	459	196	188	-17.9	-42.4	-97.0	272.1
2024-03-05	12:27:00	31.79	8.43	157.59	197.37	7.91	474.45	23.14	28.68	19313	10309	29.17	63678	1422	1126	835	460	197	189	-29.1	-60.5	-107.4	239.0
2024-03-05	12:28:00	31.59	8.29	158.06	197.64	7.92	475.13	23.14	28.36	19313	10315	28.05	61246	1421	1127	829	460	198	189	-17.8	-40.5	-99.0	257.9
2024-03-05	12:29:00	31.70	8.28	158.21	196.56	6.48	388.73	23.14	27.90	20069	10332	28.40	62170	1423	1127	819	460	198	189	-20.4	-40.9	-104.9	272.4
2024-03-05	12:30:00	31.38	8.67	158.49	196.83	7.06	423.30	23.14	28.12	18969	10174	27.65	60505	1432	1128	789	460	199	189	-7.7	-30.3	-83.7	295.8
2024-03-05	12:31:00	31.26	8.56	158.34	197.91	5.34	320.18	23.14	28.58	19494	10202	27.80	60612	1434	1129	765	461	199	190	-17.9	-42.9	-98.3	279.0
2024-03-05	12:32:00	31.47	8.70	157.87	197.60	5.54	332.48	23.14	27.72	19175	10202	27.43	59768	1433	1130	759	461	199	190	-11.8	-35.3	-89.0	292.6
2024-03-05	12:33:00	31.73	8.80	158.40	196.70	5.26	315.45	23.14	28.80	19356	10219	28.10	60949	1429	1131	760	461	199	191	-14.4	-37.6	-92.8	286.6
2024-03-05	12:34:00	31.25	8.35	157.16	195.93	6.27	376.28	23.14	28.24	19175	10219	28.89	62657	1434	1131	742	461	200	191	-24.1	-52.8	-104.5	252.9
2024-03-05	12:35:00	31.52	8.68	158.96	198.41	6.25	375.23	23.14	28.38	19325	10219	27.71	60117	1432	1131	736	462	200	191	-15.5	-39.3	-94.9	274.8
2024-03-05	12:36:00	31.80	8.79	157.64	195.71	6.54	392.55	23.14	28.76	19625	10191	27.75	60486	1430	1133	741	462	200	191	-18.5	-39.9	-102.4	287.3
2024-03-05	12:37:00	31.92	8.72	158.73	199.40	7.91	474.45	23.14	27.94	18925	10185	27.18	59138	1433	1135	714	462	201	191	-4.4	-27.0	-79.9	307.4
2024-03-05	12:38:00	31.31	8.35	157.78	196.29	7.52	450.98	23.14	28.12	19506	10090	28.07	61030	1436	1137	683	463	200	192	-17.1	-41.0	-97.1	289.9
2024-03-05	12:39:00	31.10	8.53	158.11	197.06	5.03	301.58	23.14	27.92	19131	10202	27.44	59270	1434	1138	673	463	200	192	-12.0	-34.9	-87.4	299.7
2024-03-05	12:40:00	31.14	8.64	158.92	197.24	5.31	318.83	23.14	28.36	19194	10202	27.86	59872	1428	1138	610	463	201	192	-16.5	-39.5	-94.1	293.5
2024-03-05	12:41:00	32.63	8.67	157.50	195.62	4.72	282.90	23.14	28.24	18938	10079	29.55	63539	1441	1137	574	463	201	192	-22.9	-54.9	-104.4	257.7
2024-03-05	12:42:00	31.73	8.46	157.97	195.53	5.21	312.83	23.14	27.92	19275	10185	28.03	60481	1438	1136	556	463	201	192	-17.0	-40.9	-95.0	275.3
2024-03-05	12:43:00	31.43	8.57	158.06	197.69	5.51	330.53	23.14	28.68	19775	10298	27.90	60433	1436	1137	558	463	201	193	-18.5	-38.5	-100.2	287.4
2024-03-05	12:44:00	31.32	8.72	157.78	197.24	6.37	382.43	23.14	28.92	19031	10197	27.29	59371	1437	1138	524	464	201	193	-8.2	-29.8	-81.6	308.9
2024-03-05	12:45:00	31.20	8.60	157.87	197.33	5.06	303.75	23.14	27.68	19425	10287	27.89	60465	1439	1139	517	464	201	193	-17.1	-41.4	-95.7	288.6
2024-03-05	12:46:00	31.11	8.35	156.88	197.33	6.08	364.58	23.14	28.04	19150	10202	27.16	58881	1436	1140	535	464	201	193	-10.9	-34.8	-87.2	300.5
2024-03-05	12:47:00	31.32	8.96	157.87	197.37	4.95	297.00	23.14	28.64	19319	10202	28.33	60864	1432	1140	539	464	201	193	-14.0	-37.3	-92.3	293.5
2024-03-05	12:48:00	31.23	8.83	157.87	196.74	7.02	421.43	23.14	27.80	18975	10208	29.00	62263	1435	1141	541	464	201	193	-25.3	-54.9	-103.5	260.2
2024-03-05	12:49:00	31.53	9.05	158.58	199.53	5.77	346.35	12.64	28.06	19350	10236	28.21	60657	1428	1141	556	465	201	193	-13.8	-36.9	-92.2	275.3
2024-03-05	12:50:00	31.34	8.76	159.39	194.63	5.31	318.53	22.84	28.26	19556	10393	28.35	61172	1429	1142	569	465	201	193	-16.5	-38.1	-101.1	287.3
2024-03-05	12:51:00	31.07	8.78	160.25	195.66	5.21	312.30	22.84	28.42	18875	10067	28.12	60642	1435	1140	542	465	201	193	-5.9	-27.8	-81.2	307.5
2024-03-05	12:52:00	31.04	8.75	160.62	197.87	7.04	422.33	22.84	28.18	19625	10275	28.20	60753	1437	1137	515	465	201	194	-17.2	-40.4	-95.7	291.2
2024-03-05	12:53:00	30.90	8.51	160.53	197.73	7.26	435.45	22.84	28.80	19144	10169	28.18	60504	1425	1134	537	465	201	194	-12.5	-36.5	-88.6	302.8
2024-03-05	12:54:00	31.10	8.57	161.47	196.34	7.26	435.68	22.84	27.86	19319	10270	28.58	61103	1413	1133	558	465	201	194	-14.6	-36.5	-91.4	295.6
2024-03-05	12:55:00	31.37	8.34	160.29	195.80	7.25	434.70	22.84	28.78	19281	10034	29.35	62843	1414	1131	575	465	200	194	-23.9	-51.0	-102.4	260.9
2024-03-05	12:56:00	31.34	8.84	160.53	196.07	7.24	434.18	22.84	27.82	19581	10337	28.25	60980	1406	1128	599	465	200	194	-15.2	-40.5	-94.3	278.2
2024-03-05	12:57:00	30.89	8.44	160.38	195.75	7.26	435.53	22.84	28.38	19825	10343	28.51	61690	1403	1126	626	465	200	194	-19.9	-40.0	-102.0	290.8
2024-03-05	12:58:00	31.26	8.57	161.28	197.87	7.26	435.68	22.84	28.64	19081	10118	28.05	60770	1403	1125	626	465	199	194	-7.7	-28.9	-80.7	309.8
2024-03-05	12:59:00	31.29	8.67	161.85	198.50	7.24	434.25	22.84	27.92	19525	10326	28.35	61558	1403	1123	626	465	198	193	-17.5	-41.8	-96.8	291.3
2024-03-05	13:00:00	31.23	8.50	160.05	196.56	7.24	434.25	22.84	28.28	19406	10292	28.02	60550	1396	1122	646	465	198	193	-12.7	-35.1	-88.7	304.5
2024-03-05	13:01:00	31.70	8.42	161.75	196.97	7.84	470.25	22.84	28.50	19544	10303	27.96	60174	1393	1121	667	465	197	193	-15.3	-40.0	-91.9	294.6
2024-03-05	13:02:00	31.07	8.58	160.25	195.66	7.73	463.73	22.84	28.68	19181	10202	29.93	64563	1392	1118	681	465	197	193	-27.7	-56.4	-104.4	260.4
2024-03-05	13:03:00	31.29	8.64	161.66	197.28	5.36	321.75	22.84	27.80	19644	10337	28.31	61244	1386	1116	701	465	197	193	-17.2	-41.0	-95.7	277.3
2024-03-05	13:04:00	30.95	8.59	160.72	195.89	5.02	300.98	22.84	28.72	20025	10466	28.46	62005	1387	1114	722	465	197	192	-18.5	-40.5	-102.4	288.9
2024-03-05	13:05:00	31.55	8.53	161.71	198.45	6.21	372.83	22.84	27.72	19044	10247	27.60	60262	1391	1113	726	465	197	192	-10.7	-30.5	-82.8	310.1
2024-03-05	13:06:00	31.05	8.41	160.53	196.16	5.19	311.55	22.84	28.76	19675	10360	28.91	63171	1391	1114	735	465	196	192	-18.6	-42.6	-98.1	292.1
2024-03-05	13:07:00	31.65	8.90	161.00	195.30	5.36	321.53	22.84	28.12	19331	10129	28.30	61661	1395	1115	760	465	196	192	-13.5	-35.1	-89.0	300.9
2024-03-05	13:08:00	32.13	8.55	161.57	195.66	5.98	359.03	22.84	28.10	19569	10236	28.88	62723	1394	1116	769	465	197	192	-15.0	-40.9	-93.0	295.6
2024-03-05	13:09:00	31.94	8.79	160.85	198.45	7.10	426.00	22.84	28.72	19219	10258	29.55	64162	1400	1118	776	464	197	192	-27.1	-55.4	-105.9	262.0
2024-03-05	13:10:00	32.75	8.95	162.24	197.87	7.04	422.40	22.84	27.94	19538	10247	28.21	61336	1393	1121	769	464	198	192	-15.8	-41.6	-94.0	278.4
2024-03-05	13:11:00	32.84	8.58	161.15	197.19	7.42	445.13	22.84	28.88	19919	10365	27.82	60696	1397	1124	776	464	198	192	-16.8	-40.8	-100.6	290.6
2024-03-05	13:12:00	32.64	8.93	160.67	199.26	5.38	322.80	22.84	27.88	19138	10124	27.89	60702	1406	1127	761	465	199	192	-7.8	-30.6	-81.7	312.1

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHour	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-05	13:13:00	32.55	8.73	160.81	195.89	5.23	313.88	22.84	28.88	19625	10348	28.10	61015	1406	1130	745	465	199	192	-17.8	-43.5	-97.5	292.3
2024-03-05	13:14:00	32.12	8.71	161.34	198.50	5.14	308.10	22.84	28.62	19231	10146	28.15	60902	1409	1131	720	465	199	193	-10.5	-34.5	-86.3	303.8
2024-03-05	13:15:00	32.28	8.39	161.38	196.83	5.28	316.80	22.84	28.44	19363	10247	28.28	60794	1404	1131	717	465	200	193	-11.9	-38.6	-91.0	295.9
2024-03-05	13:16:00	31.98	8.49	160.20	196.52	5.39	323.10	22.84	27.88	19256	10118	30.13	64865	1408	1132	698	465	200	193	-23.0	-54.5	-102.6	262.3
2024-03-05	13:17:00	32.30	8.66	161.57	195.08	5.68	340.58	22.84	28.52	19319	10219	28.21	60788	1406	1132	707	465	201	193	-16.6	-40.6	-93.5	280.1
2024-03-05	13:18:00	32.28	8.67	161.57	195.66	7.39	443.25	23.85	27.86	19969	10219	28.33	61127	1404	1133	704	465	201	193	-16.3	-36.9	-100.2	290.0
2024-03-05	13:19:00	32.18	8.57	161.62	195.57	6.10	366.23	23.85	28.54	19119	10214	27.83	60062	1413	1134	668	466	202	193	-7.8	-31.1	-81.2	312.7
2024-03-05	13:20:00	32.21	8.50	161.15	195.75	6.25	374.85	23.78	28.04	19663	10326	28.46	61429	1417	1134	644	466	201	194	-16.0	-39.6	-96.0	294.6
2024-03-05	13:21:00	32.43	9.01	160.62	197.28	6.79	407.18	23.78	27.96	19288	10124	27.86	59740	1416	1135	643	466	202	194	-8.3	-31.8	-84.7	301.0
2024-03-05	13:22:00	32.49	8.62	161.57	199.22	6.97	418.28	23.78	27.86	19213	10107	27.93	59731	1413	1137	642	466	202	195	-13.6	-36.3	-92.0	297.8
2024-03-05	13:23:00	31.98	8.64	160.67	195.89	7.03	421.58	23.78	28.38	19094	10107	29.86	63848	1417	1138	623	467	202	195	-24.8	-52.6	-103.1	264.1
2024-03-05	13:24:00	31.71	8.53	161.34	198.05	4.60	276.23	23.78	28.74	19338	10219	27.49	58807	1411	1138	630	467	202	195	-14.6	-39.1	-92.9	282.8
2024-03-05	13:25:00	32.24	8.49	160.38	197.15	6.27	375.90	23.78	28.02	19894	10326	27.87	59682	1412	1137	631	467	202	195	-16.6	-37.3	-100.2	293.7
2024-03-05	13:26:00	31.76	8.58	160.44	195.80	5.06	303.30	23.78	28.08	19156	10202	27.99	60012	1415	1137	597	467	203	195	-6.7	-28.5	-79.8	315.1
2024-03-05	13:27:00	32.12	8.57	160.85	196.65	7.78	466.88	23.78	28.92	19913	10208	28.28	60764	1417	1139	586	467	203	195	-13.5	-38.4	-94.3	293.6
2024-03-05	13:28:00	32.19	8.52	160.81	195.71	6.52	391.05	23.78	27.96	19238	10208	27.90	59757	1418	1140	586	467	203	195	-9.4	-29.1	-85.4	303.9
2024-03-05	13:29:00	31.97	8.24	161.71	196.29	5.28	316.58	23.78	27.90	19406	10292	28.43	60685	1417	1140	597	468	203	196	-10.8	-34.0	-90.8	299.2
2024-03-05	13:30:00	31.98	8.67	160.10	195.75	4.58	274.65	23.78	28.08	19381	10264	29.42	62870	1423	1140	588	468	203	196	-21.9	-51.5	-101.8	265.9
2024-03-05	13:31:00	31.98	8.73	161.38	197.10	4.90	293.93	23.78	28.16	19388	10371	28.07	59999	1417	1140	600	468	204	196	-12.6	-35.3	-92.8	283.8
2024-03-05	13:32:00	32.34	8.64	161.04	197.64	6.04	362.10	23.78	28.08	19869	10360	28.18	60496	1419	1140	602	468	204	196	-15.5	-34.8	-100.4	295.4
2024-03-05	13:33:00	32.39	8.75	161.34	199.26	7.45	446.78	23.78	28.12	19000	10129	27.58	59213	1421	1141	564	468	204	196	-3.5	-25.4	-77.2	313.6
2024-03-05	13:34:00	32.12	8.63	161.85	198.32	5.61	336.60	23.78	28.08	19625	10242	28.19	60606	1422	1143	539	468	204	196	-15.5	-40.9	-94.5	296.3
2024-03-05	13:35:00	32.03	8.34	161.00	198.05	4.95	296.93	23.78	28.56	19263	10242	27.44	58777	1426	1143	521	469	204	196	-7.8	-30.6	-84.2	306.3
2024-03-05	13:36:00	32.21	8.65	161.15	196.92	4.43	265.50	23.78	27.94	19344	10247	28.39	60387	1423	1144	509	469	204	197	-9.4	-33.6	-88.5	299.3
2024-03-05	13:37:00	31.89	8.53	160.14	197.87	5.56	333.75	23.78	28.34	19094	10135	29.80	63305	1430	1145	465	469	204	197	-21.0	-50.5	-99.8	264.8
2024-03-05	13:38:00	32.12	8.53	161.19	197.19	5.63	338.03	23.78	28.26	19519	10236	28.46	60545	1426	1143	459	469	204	197	-12.5	-38.1	-90.0	282.6
2024-03-05	13:39:00	31.86	8.33	161.00	197.96	4.68	281.03	23.78	28.36	19888	10337	27.79	59272	1424	1143	452	469	204	197	-15.9	-35.9	-98.3	295.8
2024-03-05	13:40:00	31.92	8.78	160.95	196.56	5.52	330.98	23.78	28.06	19094	10214	27.37	58442	1427	1142	423	469	204	197	-3.1	-25.1	-76.8	314.4
2024-03-05	13:41:00	32.03	8.52	161.47	198.45	5.53	331.65	23.78	27.66	19719	10214	28.22	60259	1425	1144	408	470	204	197	-14.5	-38.1	-95.6	296.6
2024-03-05	13:42:00	32.25	8.55	160.81	196.88	5.33	319.58	23.78	28.66	19400	10214	27.69	59048	1434	1143	426	470	204	197	-6.7	-29.6	-83.5	307.1
2024-03-05	13:43:00	32.22	8.40	161.38	197.28	4.82	289.13	23.78	28.08	19188	10230	28.43	60324	1429	1142	435	470	204	197	-10.1	-33.8	-89.5	299.6
2024-03-05	13:44:00	32.25	8.59	160.29	196.16	5.12	307.28	23.78	27.98	19081	10354	29.28	62144	1429	1143	447	470	204	197	-22.4	-52.4	-100.0	266.1
2024-03-05	13:45:00	31.80	8.53	161.75	197.55	5.82	349.13	23.78	28.46	19431	10348	28.12	59871	1420	1145	466	470	204	197	-12.5	-36.9	-91.4	300.8
2024-03-05	13:46:00	32.13	8.56	160.62	198.09	6.74	404.10	23.78	28.64	20006	10332	28.19	60115	1416	1146	466	470	204	197	-13.2	-35.8	-99.0	322.1
2024-03-05	13:47:00	32.01	8.50	161.57	197.91	5.66	339.45	23.78	28.52	19200	10208	28.06	59929	1424	1146	423	471	204	197	-3.4	-27.1	-78.7	344.0
2024-03-05	13:48:00	31.88	8.59	160.57	198.14	5.42	325.43	23.78	28.82	19625	10360	28.65	60918	1423	1146	390	471	204	197	-12.1	-35.3	-92.2	327.1
2024-03-05	13:49:00	31.50	8.65	159.95	197.28	5.98	358.65	23.78	28.02	19300	10253	27.70	58894	1428	1145	392	471	204	197	-7.4	-29.5	-83.5	340.3
2024-03-05	13:50:00	31.92	8.43	161.34	197.37	6.07	364.43	23.78	28.64	19488	10214	28.45	60223	1419	1143	401	471	204	197	-12.3	-37.9	-91.3	341.4
2024-03-05	13:51:00	31.82	8.49	161.28	196.47	6.09	365.55	23.78	28.92	19275	10320	29.31	62191	1425	1143	407	471	204	197	-23.5	-53.3	-102.6	305.6
2024-03-05	13:52:00	31.70	8.57	161.38	198.27	5.10	305.85	23.78	28.00	19531	10326	28.15	59953	1418	1141	435	471	204	197	-13.1	-38.5	-91.8	325.4
2024-03-05	13:53:00	31.64	8.59	160.25	199.08	5.05	302.85	23.78	28.36	20019	10118	28.35	60646	1422	1141	447	471	204	197	-17.1	-38.1	-100.9	339.3
2024-03-05	13:54:00	32.15	8.49	160.95	196.70	6.19	371.18	23.78	28.20	19144	10236	28.08	59964	1424	1140	425	471	204	197	-4.6	-26.5	-78.9	354.2
2024-03-05	13:55:00	31.73	8.61	161.24	196.83	5.27	316.43	22.58	28.62	19675	10343	28.46	61318	1422	1140	399	471	203	197	-16.2	-40.4	-97.1	340.1
2024-03-05	13:56:00	31.26	8.89	160.57	197.55	5.08	304.65	23.74	28.66	19281	10320	28.48	60735	1417	1140	404	471	204	197	-9.1	-34.8	-85.1	348.1
2024-03-05	13:57:00	31.44	8.55	161.00	196.52	5.21	312.60	23.74	27.76	19381	10320	28.13	59812	1414	1139	438	472	203	197	-12.2	-37.9	-91.1	344.1
2024-03-05	13:58:00	31.22	8.40	160.53	199.26	4.80	288.08	23.74	27.90	19138	10214	30.20	64228	1413	1139	452	472	203	197	-23.6	-53.8	-102.9	306.0
2024-03-05	13:59:00	30.86	8.24	161.62	196.16	4.88	292.80	23.74	27.94	19356	10208	28.40	60614	1406	1137	482	472	203	197	-13.4	-38.5	-93.5	326.1
2024-03-05	14:00:00	31.01	8.70	159.72	196.02	4.86	291.38	23.74	28.60	20194	10225	27.93	59820	1402	1137	500	472	203	197	-16.0	-41.0	-101.9	339.4
2024-03-05	14:01:00	31.56	8.23	161.15	197.60	4.82	289.43	23.74	28.80	19013	10225	28.06	60411	1413	1136	491	472	203	197	-5.8	-27.9	-80.4	353.7
2024-03-05	14:02:00	31.23	8.34	161.04	196.43	4.76	285.68	23.74	27.82	19775	10326	28.44	61133	1417	1135	482	472	203	197	-17.0	-42.9	-96.0	340.4
2024-03-05	14:03:00	31.08	8.45	161.52	196.29	4.76	285.60	23.74	28.64	19363	10230	28.33	60603	1414	1134	504	472	203	197	-9.4	-32.9	-86.7	348.2
2024-03-05	14:04:00	31.34	8.61	161.75	199.35	4.81	288.75	23.74	27.90	19413	10253	28.07	59890	1410	1136	535	472	202	197	-13.7	-40.4	-91.3	345.7
2024-03-05	14:05:00	31.04	8.60	160.57	196.11	4.93	295.95	23.74	28.28	19263	10253	29.62	63179	1406	1137	555	472	202	197	-26.3	-56.6	-104.2	308.6
2024-03-05	14:06:00	31.43	8.71	160.62	196.61	4.85	290.70	23.74	27.90	19481	10270	28.58	61104	1399	1137	574	472	202	197	-13.3	-38.9	-92.1	327.3
2024-03-05	14:07:00	31.43	8.78	161.34	197.51	4.87	292.43	23.74	27.92	19875	10270	28.54	61294	1398	1137	575	472	202	197	-16.9	-38.4	-102.0	338.7
2024-03-05	14:08:00	31.25	8.57	161.90	197.78	4.66	279.75	23.74	28.70	19175	10180	27.90	60002	1400	1137	565	472	202	197	-8.6	-33.0	-80.2	355.2
2024-03-05	14:09:00	31.43	8.82	160.62	196.65	4.88	293.03	23.74	28.60	19581	10399	28.40	61103	1402	1139	555	472	202	196	-15.9	-39.3	-96.2	340.0
2024-03-05	14:10:00	31.95	8.81	160.57	198.72	4.91	294.60	23.74	28.76	19119	10180	27.98	60038	1400	1139	565	472	201	196	-9.4	-33.3	-86.3	349.7
2024-03-05	14:11:00	31.52	8.68	161.85	196.92	4.84	290.63	23.74	27.78	19444	10191	28.50	60763	1397	1139	581	472	201	196	-13.2	-37.8	-92.4	344.3
2024-03-05	14:12:00	31.16	8.54	159.67	198.27	4.87	292.05	23.74	27.88	19119	10191	30.03	63973	1398	1139	588	472	201	196	-22.4	-54.1	-102.4	306.5
2024-03-05	14:13:00	31.46	8.66	160.81	196.92	5.17	310.28	23.74	28.76	19494	10191	28.20	60251	1393	1138	578	472	201	196	-15.5	-41.4	-94.6	329.7
2024-03-05	14:14:00	31.58	8.64	160.95	195.75	4.97	298.20	23.74	28.80	19863	10298	28.48	61135	1391	1138	597	472	201	196	-19.3	-40.3	-103.1	340.0
2024-03-05	14:15:00	31.37	8.59	161.28	195.53	4.83	289.73	23.74	28.00	19056	10281	28.07	60369	1398	1136	565	472	201	196	-5.4	-26.8	-79.1	355.3
2024-03-05	14:16:00	30.95	8.71	160.62	197.60	4.84	290.33	23.74	28.86	19700	10303	28.31	61005	1399	1135	555	472	201	196	-15.2	-39.8	-96.9	341.4
2024-03-05	14:17:00	31.32	8.55	161.34	198.95	4.81	288.53	23.74	27.70	19194	10202	28.29	60749	1401	1134	566	472	201	196	-9.3	-33.3	-86.7	349.6
2024-03-05	14:18:00	31.53	8.81	161.90	197.55	4.94	296.25	23.74	28.26	19544	10202	28.89	62208	1397	1133	579	472	200	196	-14.1	-39.8	-91.7	345.9
2024-03-05	14:19:00	31.40	8.36	160.05	196.07	4.88	292.95	23.74	27.98	19263	10202	29.97	64113	1401	1132	582	472	200	196	-24.2	-54.8	-102.8	309.0
2024-03-05	14:20:00	31.61	8.72	161.10	197.96	5.07	304.43	23.74	28.20	19481	10315	28.77	61714	1397	1131	573	471	201	196	-17.1	-43.3	-95.1	331.3

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHour	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-05	14:21:00	31.52	8.73	160.91	198.27	7.77	466.13	23.74	28.90	19963	10461	28.18	60640	1400	1131	591	471	201	195	-16.8	-38.6	-103.0	341.1
2024-03-05	14:22:00	31.37	8.71	161.38	197.73	4.94	296.25	23.74	27.90	19038	10270	28.24	61044	1408	1131	577	472	200	195	-5.9	-28.8	-79.7	356.3
2024-03-05	14:23:00	31.05	8.69	160.81	195.66	4.97	297.98	23.74	27.94	19669	10281	28.59	61686	1408	1130	560	471	200	195	-16.8	-42.4	-97.7	340.9
2024-03-05	14:24:00	31.07	8.52	159.91	198.72	4.78	286.65	23.74	28.74	19300	10270	28.11	60440	1412	1128	565	471	200	195	-11.7	-34.8	-88.9	349.6
2024-03-05	14:25:00	31.11	8.47	161.24	197.55	4.84	290.10	23.74	28.64	19513	10270	28.87	61662	1405	1127	584	471	200	195	-14.2	-39.1	-93.8	345.9
2024-03-05	14:26:00	31.56	8.69	160.57	195.35	4.76	285.53	23.74	28.66	19281	10270	29.70	63740	1409	1127	598	471	199	195	-26.3	-56.0	-106.1	311.4
2024-03-05	14:27:00	31.56	8.71	161.71	198.81	4.74	284.55	23.74	28.82	19281	10365	29.10	62448	1403	1127	616	471	200	195	-15.6	-40.3	-94.7	330.3
2024-03-05	14:28:00	31.23	8.99	161.00	198.86	4.91	294.83	23.74	28.88	19988	10382	28.44	61443	1396	1129	618	471	200	195	-18.1	-38.9	-101.3	340.4
2024-03-05	14:29:00	31.41	8.81	160.62	197.82	4.90	293.78	23.74	28.70	19106	10258	28.01	60640	1402	1130	601	471	200	195	-7.7	-29.8	-81.3	357.0
2024-03-05	14:30:00	31.11	9.04	161.52	197.91	4.80	287.85	23.74	28.18	19681	10264	28.82	62270	1400	1131	581	471	199	195	-16.5	-42.0	-97.1	344.6
2024-03-05	14:31:00	31.29	8.69	161.04	198.90	4.72	282.90	23.74	28.66	19444	10163	28.02	60176	1401	1130	587	471	200	195	-12.0	-36.1	-88.6	353.6
2024-03-05	14:32:00	31.43	8.69	161.94	196.92	4.82	289.13	23.74	28.74	19556	10275	29.05	62217	1399	1130	592	471	200	195	-13.9	-39.3	-92.9	346.5
2024-03-05	14:33:00	30.89	8.60	160.14	197.82	4.80	287.93	23.74	28.60	19363	10174	30.32	64931	1400	1130	596	471	199	195	-26.5	-57.1	-104.3	309.5
2024-03-05	14:34:00	30.89	8.54	161.57	196.97	4.68	280.58	23.74	28.46	19556	10174	28.77	61809	1394	1128	613	471	199	195	-15.9	-40.6	-96.0	330.7
2024-03-05	14:35:00	31.20	8.46	160.48	196.47	4.68	280.80	23.74	28.36	20219	10275	28.48	61412	1393	1126	623	471	199	195	-16.8	-39.9	-103.5	341.7
2024-03-05	14:36:00	30.78	8.64	160.95	196.52	4.83	289.73	23.74	28.16	19163	10152	28.13	60954	1401	1126	611	471	199	195	-8.0	-32.1	-82.6	358.4
2024-03-05	14:37:00	31.40	8.42	160.95	196.34	4.80	288.08	23.74	28.88	19663	10376	28.77	62370	1400	1126	611	471	199	195	-16.7	-42.9	-97.3	343.0
2024-03-05	14:38:00	31.34	8.74	161.04	198.18	4.69	281.25	23.74	28.44	19506	10152	28.10	60654	1402	1124	621	471	199	195	-10.6	-33.9	-87.1	350.2
2024-03-05	14:39:00	31.58	8.65	161.38	199.58	4.69	281.48	23.74	27.98	19406	10152	28.30	60949	1398	1125	646	471	199	195	-13.5	-38.3	-93.5	347.5
2024-03-05	14:40:00	31.22	8.86	160.38	199.76	4.85	290.85	23.74	28.84	19256	10258	29.37	63225	1398	1126	640	471	199	195	-28.7	-59.6	-106.4	313.5
2024-03-05	14:41:00	31.20	8.80	161.71	199.89	4.87	292.05	23.74	28.08	19444	10264	28.70	61949	1388	1126	656	471	199	194	-14.4	-40.4	-95.1	330.6
2024-03-05	14:42:00	30.83	8.64	160.85	197.69	4.73	283.95	23.74	28.78	20056	10371	28.30	61214	1389	1126	658	471	199	194	-17.4	-40.4	-104.0	340.9
2024-03-05	14:43:00	31.13	8.76	162.28	198.90	4.74	284.33	23.74	28.80	18994	10169	27.73	60504	1390	1127	644	471	199	194	-7.4	-29.8	-81.4	356.9
2024-03-05	14:44:00	31.16	8.46	160.72	195.62	4.67	280.13	23.74	28.70	19700	10309	28.13	61070	1397	1127	644	471	198	194	-18.9	-43.3	-99.6	343.8
2024-03-05	14:45:00	31.26	8.32	160.05	196.65	4.78	286.65	23.74	28.04	19600	10202	28.03	60744	1397	1126	657	471	198	194	-11.4	-34.5	-89.9	352.7
2024-03-05	14:46:00	30.86	8.43	161.15	197.64	4.72	283.43	23.74	28.24	19625	10197	28.77	62000	1395	1124	661	470	198	194	-15.5	-38.3	-94.5	347.2
2024-03-05	14:47:00	31.44	8.43	160.14	197.01	4.88	292.58	23.74	28.02	19450	10185	29.25	63280	1405	1122	671	470	198	194	-27.1	-59.1	-106.4	312.7
2024-03-05	14:48:00	30.69	8.55	161.47	196.29	4.82	289.13	23.74	28.86	19650	10303	28.68	61868	1394	1122	692	470	198	194	-18.3	-44.5	-97.8	334.3
2024-03-05	14:49:00	31.13	8.57	160.57	196.74	4.72	282.98	23.74	28.62	20156	10399	28.22	61526	1390	1123	709	470	198	194	-20.9	-42.4	-104.7	344.3
2024-03-05	14:50:00	31.07	8.81	161.34	198.36	4.77	286.13	23.74	28.92	19063	10191	27.50	60025	1396	1125	708	470	198	194	-8.8	-31.4	-82.8	359.5
2024-03-05	14:51:00	30.99	8.83	160.44	197.15	4.67	279.98	22.65	28.78	19588	10410	28.37	61800	1399	1125	689	470	198	194	-18.4	-42.4	-99.5	345.0
2024-03-05	14:52:00	31.43	8.37	160.25	198.05	4.74	284.33	22.65	28.76	19538	10270	28.24	60958	1399	1125	690	470	198	194	-10.9	-32.0	-88.2	354.2
2024-03-05	14:53:00	30.87	8.59	161.04	197.73	4.73	284.03	23.70	28.34	19456	10270	28.48	61545	1394	1123	687	470	198	194	-16.7	-41.0	-95.5	350.0
2024-03-05	14:54:00	31.25	8.67	160.53	196.29	4.79	287.10	23.70	28.56	19225	10270	29.66	64059	1400	1123	696	470	198	194	-26.8	-57.4	-104.5	309.6
2024-03-05	14:55:00	31.55	8.55	161.24	198.18	4.67	280.35	23.70	28.12	19494	10281	28.64	62126	1397	1122	709	470	198	193	-16.3	-41.4	-96.7	330.8
2024-03-05	14:56:00	31.14	8.51	160.91	196.70	4.75	284.70	23.70	27.94	19981	10270	28.00	61011	1393	1122	720	470	198	193	-18.2	-41.4	-105.3	343.6
2024-03-05	14:57:00	30.95	8.36	161.24	195.21	4.76	285.75	23.70	28.24	19156	10051	27.95	60969	1399	1121	724	470	198	193	-10.3	-34.8	-84.1	360.3
2024-03-05	14:58:00	30.95	8.24	160.67	197.37	4.71	282.75	23.70	27.94	19675	10275	27.83	60685	1396	1122	725	470	197	193	-19.4	-45.0	-98.7	345.3
2024-03-05	14:59:00	30.66	8.23	160.05	195.98	4.69	281.40	23.70	28.00	19381	10152	27.90	60621	1395	1122	740	470	198	193	-13.1	-37.3	-88.5	353.9
2024-03-05	15:00:00	31.02	8.70	161.10	196.92	4.76	285.68	23.70	28.86	19631	10253	27.92	60584	1392	1122	743	470	198	193	-16.0	-41.8	-95.7	351.2
2024-03-05	15:01:00	30.90	8.48	160.85	197.19	4.76	285.75	23.70	28.00	19269	10264	30.12	65328	1393	1123	747	469	198	193	-25.0	-56.4	-104.2	312.3
2024-03-05	15:02:00	30.87	8.53	161.28	197.24	4.71	282.75	23.70	28.00	19606	10365	28.74	62490	1386	1123	751	469	198	193	-15.9	-41.5	-95.7	334.2
2024-03-05	15:03:00	30.93	8.58	161.10	196.11	4.61	276.68	23.70	28.82	20200	10287	28.19	61517	1384	1123	769	469	198	193	-17.9	-40.8	-104.4	345.3
2024-03-05	15:04:00	31.29	8.62	161.90	196.92	4.66	279.53	22.99	28.82	19250	10287	27.94	60792	1397	1123	765	469	198	193	-8.1	-30.3	-82.5	360.9
2024-03-05	15:05:00	31.53	8.46	161.00	195.17	4.76	285.53	22.99	28.76	19819	10287	28.80	62892	1400	1122	749	469	197	193	-18.3	-42.5	-99.2	343.9
2024-03-05	15:06:00	31.89	8.48	161.00	196.97	4.67	279.98	22.99	27.88	19425	10287	28.51	61657	1401	1122	768	469	198	193	-11.0	-34.8	-88.9	354.1
2024-03-05	15:07:00	31.53	8.60	161.10	196.65	4.77	285.90	22.99	28.78	19431	10287	28.68	62174	1398	1123	779	469	198	193	-13.8	-39.1	-94.1	349.7
2024-03-05	15:08:00	31.37	8.64	160.57	195.98	4.71	282.45	22.99	28.14	19513	10191	29.17	63132	1400	1124	772	469	198	193	-25.0	-55.4	-106.8	314.1
2024-03-05	15:09:00	31.47	8.60	161.38	196.70	4.90	293.78	22.99	28.08	19563	10292	28.59	62151	1395	1124	772	469	198	193	-16.6	-41.6	-97.4	334.2
2024-03-05	15:10:00	31.13	8.57	161.28	195.30	4.84	290.18	22.99	28.24	20031	10393	28.57	62229	1394	1124	787	469	198	193	-21.5	-43.0	-105.3	346.5
2024-03-05	15:11:00	31.64	8.44	160.72	197.06	4.78	287.03	22.99	28.80	19275	10169	28.21	61553	1404	1123	782	469	199	193	-9.6	-32.1	-83.8	361.6
2024-03-05	15:12:00	31.56	8.72	161.81	196.38	4.81	288.53	22.99	28.80	19700	10191	28.29	61826	1398	1124	773	469	198	193	-17.0	-41.1	-98.0	342.4

March 05/2024	Waste Flows							Flows	Air Flows				Temperatures						Pressures			
	Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	SecondaryA	SecondaryB	Quench	SprayDryer	Stack	Incinerator	SDA Inlet	SD Outlet	Baghouse
Test 1	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	Lbs/h	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHOUR	TE-240	T-241A	T-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
Units	LPM	LPM	LPM	LPM	LPM	SCFM	LPM	SC-PAC-FT	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
Max	33.02	9.21	162.61	199.89	7.92	475.13	23.96	29.00	20606	14388	30.39	68316	1445	1146	927	472	204	197	-3.1	-25.1	-76.8	361.6
Min	29.81	7.65	130.31	194.49	4.42	264.98	12.64	27.66	18694	9371	27.03	58442	1361	1095	390	458	181	182	-45.0	-75.3	-127.4	225.4
Average	31.32	8.51	159.66	197.02	5.67	340.07	23.35	28.36	19465	10379	28.40	62043	1411	1123	702	467	196	191	-16.3	-40.9	-95.9	305.8
Variance	0.33	0.06	19.59	1.24	0.94	3394.82	0.47	0.14	101166	304636	0.41	3402298	298	148	21072	12	23	14	43.6	71.3	83.4	1177.8

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHour	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-06	8:55:00	36.89	9.58	169.57	210.65	5.10	305.93	23.89	22.76	19431	10320	28.87	61236	1376	1137	835	480	200	194	-9.2	-37.4	-93.6	375.6
2024-03-06	8:56:00	36.98	9.38	169.10	210.83	4.87	291.90	23.89	22.66	19956	10421	29.36	62411	1376	1137	837	480	200	194	-18.8	-51.0	-111.2	357.7
2024-03-06	8:57:00	37.13	9.01	169.29	211.37	5.16	309.75	23.89	23.24	19669	10214	28.66	60349	1374	1136	837	480	199	194	-12.5	-42.1	-100.3	368.2
2024-03-06	8:58:00	37.35	9.51	168.35	212.13	4.98	298.58	23.89	23.32	20006	10326	29.62	62475	1373	1137	819	480	200	194	-20.9	-52.6	-112.2	371.8
2024-03-06	8:59:00	36.92	9.47	168.72	212.76	4.95	296.78	23.89	23.36	19506	10225	30.57	64481	1372	1137	837	480	200	194	-30.7	-67.3	-122.3	327.6
2024-03-06	9:00:00	37.32	9.43	169.44	211.41	5.42	325.35	23.89	23.26	19800	10219	28.66	60596	1370	1137	835	480	200	194	-18.2	-49.0	-108.5	348.4
2024-03-06	9:01:00	37.05	9.28	168.15	211.59	5.19	311.33	23.89	22.70	20244	10320	28.88	61315	1369	1136	843	480	199	194	-20.8	-47.4	-116.1	363.3
2024-03-06	9:02:00	36.68	8.69	168.63	211.19	5.33	319.80	23.89	23.28	19263	10292	28.49	60401	1376	1136	824	480	199	194	-8.6	-38.1	-93.9	378.2
2024-03-06	9:03:00	37.20	9.46	168.58	212.76	5.11	306.83	23.89	22.44	20113	10253	28.91	61408	1376	1137	840	480	199	194	-21.4	-52.6	-112.2	362.3
2024-03-06	9:04:00	36.90	9.47	168.67	211.23	5.23	313.95	23.89	22.46	19613	10247	28.75	60790	1377	1137	848	480	199	194	-13.9	-43.9	-101.5	370.6
2024-03-06	9:05:00	37.83	9.25	169.29	209.88	6.15	369.15	23.89	23.40	19750	10371	29.41	62050	1370	1137	852	480	199	194	-16.6	-48.4	-106.7	366.7
2024-03-06	9:06:00	36.89	9.02	169.10	211.86	5.25	315.23	23.89	22.36	19538	10264	30.47	64277	1377	1137	852	480	199	194	-30.8	-67.8	-121.2	328.6
2024-03-06	9:07:00	36.83	8.96	168.67	212.90	5.44	326.55	23.89	22.88	19794	10489	29.32	62272	1369	1136	843	480	200	194	-20.0	-54.0	-110.7	350.9
2024-03-06	9:08:00	36.77	8.71	168.39	212.76	4.92	294.98	23.89	22.90	20181	10472	29.01	61676	1368	1135	833	480	199	194	-19.7	-46.4	-116.0	361.9
2024-03-06	9:09:00	37.26	9.05	169.44	212.04	5.17	310.20	23.89	22.94	19363	10236	28.23	60148	1370	1135	839	480	199	193	-10.1	-40.0	-94.1	376.4
2024-03-06	9:10:00	37.19	9.37	169.14	211.64	5.10	306.00	23.89	22.66	20013	10455	28.84	61593	1374	1136	856	480	199	193	-21.7	-53.8	-113.7	360.3
2024-03-06	9:11:00	37.47	9.42	167.87	212.99	5.51	330.30	23.89	22.74	19556	10332	28.68	60532	1373	1136	866	480	199	193	-14.9	-44.9	-102.7	370.9
2024-03-06	9:12:00	36.83	8.90	168.58	211.32	7.92	475.20	23.89	22.42	19738	10438	29.13	61493	1368	1136	871	480	199	193	-20.5	-49.0	-108.6	367.1
2024-03-06	9:13:00	36.69	9.27	168.48	212.04	5.03	301.58	23.89	23.00	19675	10337	30.97	65420	1370	1135	877	480	199	193	-30.4	-67.5	-121.8	327.4
2024-03-06	9:14:00	36.42	9.01	168.44	211.68	5.21	312.38	23.89	22.44	19813	10348	29.06	61547	1365	1134	880	480	199	193	-20.0	-49.5	-111.2	347.8
2024-03-06	9:15:00	36.47	9.52	168.86	211.64	5.86	351.30	23.89	23.42	20550	10461	28.95	61507	1361	1134	885	480	199	193	-19.9	-47.0	-116.1	361.4
2024-03-06	9:16:00	36.53	9.31	168.95	211.37	4.95	297.00	23.89	22.68	19475	10247	28.84	61526	1367	1134	871	480	199	193	-11.3	-39.5	-95.8	379.3
2024-03-06	9:17:00	36.35	9.30	168.82	212.81	5.12	306.98	23.40	22.50	20006	10275	29.94	63863	1365	1134	875	480	198	193	-22.0	-52.8	-113.6	361.1
2024-03-06	9:18:00	36.51	9.33	169.14	212.49	5.38	322.50	23.40	22.28	19713	10275	28.95	61440	1364	1134	888	480	198	193	-15.7	-44.3	-103.6	370.7
2024-03-06	9:19:00	36.65	9.05	168.91	213.66	5.41	324.38	23.40	23.42	19806	10388	29.22	61774	1361	1134	893	480	198	193	-18.8	-49.0	-109.1	366.6
2024-03-06	9:20:00	36.65	8.53	168.48	211.59	5.02	300.98	23.40	23.40	19556	10275	30.35	64379	1364	1134	890	480	198	193	-31.7	-67.8	-123.7	327.6
2024-03-06	9:21:00	36.99	9.59	169.38	211.91	5.28	317.03	23.40	23.46	19938	10376	28.85	61142	1360	1133	890	480	198	193	-19.4	-51.0	-110.3	348.6
2024-03-06	9:22:00	36.80	9.10	169.48	214.34	4.91	294.68	23.40	22.84	20206	10376	28.43	60612	1362	1133	894	480	198	193	-21.1	-52.5	-116.9	361.3
2024-03-06	9:23:00	36.53	9.35	169.14	213.98	5.38	323.03	23.40	22.64	19225	10258	28.73	61143	1370	1134	880	480	198	192	-10.3	-37.9	-94.9	379.9
2024-03-06	9:24:00	36.95	9.09	169.20	213.35	5.01	300.38	23.40	22.82	20006	10393	29.50	62964	1367	1135	896	480	198	192	-20.7	-54.0	-112.8	359.7
2024-03-06	9:25:00	36.44	9.03	167.68	212.99	4.90	293.78	23.40	22.22	19731	10275	28.69	61061	1367	1135	895	480	198	192	-16.3	-45.9	-104.0	371.8
2024-03-06	9:26:00	36.45	9.53	169.29	212.31	5.23	313.73	23.40	22.44	19625	10275	29.24	61695	1364	1135	891	480	198	192	-17.9	-49.5	-108.6	365.8
2024-03-06	9:27:00	36.62	9.06	168.54	211.73	5.21	312.45	23.40	23.40	19756	10275	30.17	63777	1363	1135	902	480	198	192	-34.5	-70.6	-125.6	330.3
2024-03-06	9:28:00	36.09	9.09	169.01	210.74	5.25	315.00	23.40	22.62	19806	10405	29.28	62145	1357	1134	899	480	198	192	-20.7	-51.8	-111.8	350.3
2024-03-06	9:29:00	36.23	9.03	168.77	211.10	4.93	295.65	23.40	22.54	20425	10539	28.71	61231	1354	1133	900	480	198	192	-21.4	-49.0	-119.4	363.0
2024-03-06	9:30:00	36.68	8.93	168.82	212.85	6.44	386.25	23.40	22.78	19363	10326	28.19	60215	1359	1133	898	480	198	192	-9.4	-36.9	-94.1	377.2
2024-03-06	9:31:00	37.49	9.58	169.53	214.34	5.46	327.30	23.40	23.28	20063	10343	29.24	62583	1362	1133	909	480	197	192	-20.7	-51.4	-112.7	361.3
2024-03-06	9:32:00	37.35	9.19	168.39	211.64	5.33	319.65	23.40	22.42	19463	10230	28.73	60866	1368	1134	916	480	198	192	-15.2	-44.9	-104.5	370.4
2024-03-06	9:33:00	36.95	9.35	168.48	211.64	4.91	294.68	23.40	23.00	19913	10326	29.43	62458	1362	1135	917	480	198	192	-19.8	-49.3	-110.2	367.8
2024-03-06	9:34:00	36.44	8.92	168.54	212.40	5.08	304.88	23.40	23.30	19806	10326	30.37	64279	1365	1134	918	480	198	192	-31.4	-68.9	-121.4	331.5
2024-03-06	9:35:00	36.66	9.06	169.62	212.94	5.01	300.53	23.40	22.52	19981	10309	29.42	62558	1359	1134	919	480	198	192	-19.6	-49.5	-110.0	350.1
2024-03-06	9:36:00	36.87	9.18	168.63	211.05	5.16	309.60	23.40	23.20	20538	10421	28.98	61834	1356	1132	918	480	198	192	-20.8	-49.8	-118.4	363.0
2024-03-06	9:37:00	36.65	9.22	168.77	211.73	5.63	337.73	23.40	22.52	19394	10303	28.22	60592	1362	1131	911	480	198	192	-8.3	-38.9	-92.5	375.8
2024-03-06	9:38:00	36.87	8.76	168.58	210.69	4.94	296.25	23.40	22.42	20094	10416	29.16	62308	1363	1131	914	480	198	192	-23.4	-52.4	-115.5	362.8
2024-03-06	9:39:00	36.65	9.03	168.54	212.04	5.66	339.68	23.40	22.48	19744	10416	28.36	60183	1360	1131	919	480	198	192	-19.1	-49.8	-105.8	372.1
2024-03-06	9:40:00	37.08	9.39	169.34	211.50	5.08	304.88	23.40	23.10	20013	10399	29.52	62628	1357	1131	922	480	198	192	-21.1	-51.4	-109.8	369.4
2024-03-06	9:41:00	36.27	9.60	168.86	211.68	5.17	310.28	23.40	23.04	19775	10281	31.00	65823	1359	1130	929	480	198	192	-29.8	-69.1	-122.1	329.9
2024-03-06	9:42:00	36.93	9.02	169.57	213.48	5.16	309.53	23.40	22.36	19938	10303	29.69	63229	1354	1130	924	480	199	192	-20.8	-53.8	-112.0	350.4
2024-03-06	9:43:00	36.15	9.25	168.77	211.41	4.96	297.30	23.40	23.38	20313	10421	29.34	62725	1356	1130	916	480	199	192	-24.8	-50.0	-122.4	367.1
2024-03-06	9:44:00	36.72	9.13	169.44	211.64	4.97	298.43	23.40	23.50	19350	10219	28.21	60524	1358	1130	908	480	199	192	-10.1	-38.3	-96.2	380.1
2024-03-06	9:45:00	36.30	9.06	168.72	211.95	4.92	295.35	23.40	22.40	20256	10562	28.46	60963	1355	1131	913	480	198	192	-23.7	-55.1	-115.4	360.6
2024-03-06	9:46:00	37.22	9.07	169.05	210.74	5.45	326.70	23.40	22.68	19650	10343	28.98	61752	1354	1130	914	480	198	192	-14.6	-44.9	-103.1	371.8
2024-03-06	9:47:00	36.96	8.82	169.38	210.92	4.95	296.78	23.40	23.46	19638	10365	29.09	61803	1355	1131	916	480	198	192	-18.8	-49.5	-109.3	368.1
2024-03-06	9:48:00	36.66	9.16	168.30	212.36	5.23	313.95	23.40	23.44	19669	10466	30.69	65163	1360	1131	919	480	198	192	-31.5	-68.4	-121.9	331.8
2024-03-06	9:49:00	37.46	8.44	169.01	210.96	5.13	307.73	23.40	22.38	19875	10360	28.88	61173	1355	1131	920	480	199	192	-19.5	-51.6	-111.8	349.9
2024-03-06	9:50:00	37.05	9.28	168.91	210.87	5.02	301.05	23.40	23.38	20225	10461	28.95	61888	1358	1131	916	480	199	192	-22.4	-49.8	-119.7	362.9
2024-03-06	9:51:00	37.19	9.22	169.05	212.85	5.64	338.55	23.40	23.40	19494	10247	28.73	61729	1361	1132	923	480	199	192	-11.3	-39.0	-98.0	384.4
2024-03-06	9:52:00	37.29	8.97	169.67	210.69	5.13	307.50	23.40	22.48	20069	10360	29.62	63312	1362	1133	929	480	199	192	-21.7	-53.1	-114.4	361.6
2024-03-06	9:53:00	37.47	9.06	168.44	212.36	4.91	294.83	23.40	22.58	19725	10371	28.82	61278	1364	1133	921	480	199	193	-14.0	-43.1	-103.3	371.2
2024-03-06	9:54:00	37.56	9.37	169.38	213.03	5.19	311.25	23.40	22.78	19725	10360	28.65	60677	1361	1133	921	480	199	193	-18.1	-47.4	-108.3	368.4
2024-03-06	9:55:00	37.19	9.84	168.72	210.96	5.07	304.05	23.40	22.98	19625	10326	30.69	65034	1368	1134	920	480	199	193	-30.3	-67.5	-119.7	331.8
2024-03-06	9:56:00	37.31	9.04	168.86	212.36	6.17	369.90	23.40	22.60	19763	10433	29.64	62837	1362	1133	916	480	199	193	-18.7	-48.8	-110.5	352.2
2024-03-06	9:57:00	38.27	9.16	168.63	211.95	5.28	317.03	23.40	22.84	20288	10449	29.17	62063	1363	1133	918	481	200	193	-20.7	-48.3	-117.3	360.6
2024-03-06	9:58:00	37.86	9.22	169.25	211.55	5.22	313.05	23.40	23.20	19506	10326	28.60	60844	1369	1134	920	481	200	193	-8.9	-35.9	-94.1	380.4
2024-03-06	9:59:00	37.58	9.19	168.82	212.63	5.18	310.95	23.40	23.34	19919	10427	28.95	61327	1370	1135	923	481	199	193	-20.4	-52.4	-112.4	361.2

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHour	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-06	10:00:00	37.55	9.23	168.82	209.88	5.19	311.25	23.40	23.10	19613	10343	29.16	61742	1373	1135	920	481	200	193	-17.4	-49.6	-107.2	377.3
2024-03-06	10:01:00	37.35	8.82	169.05	210.83	4.86	291.53	23.40	22.84	19831	10343	28.50	60186	1365	1136	924	481	200	193	-19.1	-49.5	-110.9	368.8
2024-03-06	10:02:00	37.31	9.15	168.67	212.90	7.92	474.90	23.40	22.52	19581	10242	31.25	66055	1368	1136	895	481	200	193	-27.4	-66.8	-120.6	329.9
2024-03-06	10:03:00	37.59	8.66	170.00	212.00	6.26	375.68	23.40	23.14	19813	10343	29.42	62338	1364	1136	899	481	200	193	-17.4	-49.5	-109.9	348.9
2024-03-06	10:04:00	37.40	9.14	169.01	210.47	5.19	311.18	23.40	23.34	20269	10466	29.30	62507	1365	1136	904	481	200	193	-18.2	-48.0	-116.4	362.0
2024-03-06	10:05:00	36.69	9.28	168.39	211.19	5.24	314.18	23.40	22.38	19319	10253	28.58	60583	1372	1137	912	481	200	193	-8.6	-36.8	-93.7	378.5
2024-03-06	10:06:00	37.16	9.70	169.38	210.87	5.75	345.23	23.40	22.64	19900	10478	29.54	62648	1369	1138	914	481	200	193	-21.0	-51.9	-112.6	361.6
2024-03-06	10:07:00	37.07	8.77	168.67	212.40	5.20	311.70	23.40	23.08	19625	10365	28.92	61238	1370	1138	917	481	200	193	-14.0	-42.5	-102.7	371.8
2024-03-06	10:08:00	37.32	9.17	170.10	211.10	5.20	312.08	23.40	23.06	19675	10466	29.20	61580	1368	1138	923	481	200	193	-17.1	-49.4	-109.3	367.4
2024-03-06	10:09:00	36.47	9.25	168.95	211.05	5.06	303.53	23.40	23.08	19419	10360	31.41	66368	1370	1137	923	482	200	193	-31.2	-70.5	-122.1	331.9
2024-03-06	10:10:00	37.08	9.12	168.67	212.40	5.05	302.70	23.70	23.12	19881	10281	29.41	61940	1366	1137	921	482	200	193	-19.9	-47.4	-111.9	351.3
2024-03-06	10:11:00	37.29	8.94	168.95	211.14	5.75	344.78	23.70	22.60	20388	10399	29.27	62206	1368	1137	892	482	200	193	-22.6	-50.3	-120.2	365.0
2024-03-06	10:12:00	37.46	8.95	169.25	212.36	5.04	302.33	23.70	23.30	19394	10253	28.93	61862	1374	1138	904	482	201	193	-9.0	-38.5	-95.1	378.8
2024-03-06	10:13:00	37.17	9.13	169.01	211.41	5.14	308.10	23.70	23.22	19969	10275	29.11	62132	1376	1140	902	482	200	193	-23.9	-55.3	-114.8	365.1
2024-03-06	10:14:00	38.09	9.14	168.48	212.72	4.94	296.10	23.70	22.84	19456	10371	29.07	61499	1376	1140	892	482	201	194	-15.2	-44.0	-102.7	373.8
2024-03-06	10:15:00	37.44	9.14	169.76	211.28	6.48	388.95	23.70	23.34	19600	10298	29.02	61293	1377	1140	893	482	201	194	-15.8	-47.1	-106.0	369.6
2024-03-06	10:16:00	37.29	9.15	168.48	211.37	5.68	340.95	23.70	22.50	19556	10292	31.01	65361	1379	1141	900	482	201	194	-26.5	-65.1	-118.0	330.1
2024-03-06	10:17:00	37.23	9.19	170.00	211.82	5.51	330.53	23.70	22.80	19931	10427	29.22	61424	1372	1141	897	482	201	194	-21.2	-54.5	-113.2	356.6
2024-03-06	10:18:00	36.44	8.39	168.30	210.51	5.02	301.43	23.70	23.20	20144	10438	29.02	61400	1372	1140	893	482	201	194	-21.4	-49.5	-119.1	364.3
2024-03-06	10:19:00	37.31	9.07	168.82	210.65	4.99	299.18	23.70	23.30	19213	10332	28.44	60466	1374	1140	881	483	201	194	-7.4	-34.5	-93.9	377.8
2024-03-06	10:20:00	36.98	9.53	168.77	211.19	5.35	320.93	23.70	22.54	20031	10433	29.24	62025	1376	1141	879	483	200	194	-21.4	-50.5	-113.4	362.1
2024-03-06	10:21:00	36.95	9.19	168.77	211.68	4.94	296.63	23.70	23.20	19444	10332	29.04	61256	1378	1140	874	483	200	194	-14.9	-45.9	-103.5	373.0
2024-03-06	10:22:00	37.25	9.16	169.53	211.41	5.41	324.30	23.70	22.64	20106	10332	29.36	62051	1373	1139	884	483	201	194	-20.1	-47.9	-110.3	368.1
2024-03-06	10:23:00	36.77	9.06	168.91	211.91	5.73	343.80	23.70	22.68	19625	10219	30.76	64763	1375	1139	882	483	201	194	-33.0	-70.1	-121.3	330.6
2024-03-06	10:24:00	37.04	9.31	170.24	211.50	5.16	309.53	23.70	23.22	19919	10337	29.55	62714	1369	1138	881	483	201	194	-18.3	-49.1	-110.1	350.8
2024-03-06	10:25:00	37.35	9.26	168.30	212.40	5.19	311.40	23.70	22.44	20044	10427	29.68	63338	1372	1137	882	483	201	194	-21.3	-50.5	-119.4	364.5
2024-03-06	10:26:00	37.47	9.24	168.86	210.74	5.06	303.45	23.70	22.48	19300	10298	28.54	60594	1380	1137	880	483	201	194	-5.8	-34.3	-92.1	374.9
2024-03-06	10:27:00	37.59	9.03	169.20	212.58	4.71	282.53	23.70	23.12	19950	10298	29.60	62889	1379	1139	888	483	200	194	-18.8	-49.6	-112.0	364.4
2024-03-06	10:28:00	38.25	9.33	168.77	213.93	5.12	307.13	23.70	23.00	19538	10382	28.76	60764	1384	1140	883	483	201	194	-11.5	-40.1	-101.2	373.3
2024-03-06	10:29:00	36.84	9.29	168.77	211.59	4.91	294.75	23.70	22.82	19763	10382	29.27	61660	1379	1141	871	483	201	194	-18.2	-50.5	-107.3	369.6
2024-03-06	10:30:00	37.56	9.24	168.91	211.64	4.93	295.50	23.70	23.34	19444	10281	31.02	65269	1387	1141	871	483	201	194	-26.8	-64.1	-117.0	329.6
2024-03-06	10:31:00	37.25	9.30	169.25	212.76	5.16	309.38	23.70	22.58	19700	10388	29.29	61733	1383	1142	870	483	201	194	-17.5	-49.8	-108.5	352.6
2024-03-06	10:32:00	37.70	9.03	168.35	210.83	4.98	298.88	23.70	22.66	20231	10500	28.96	61246	1384	1142	871	483	201	194	-19.3	-47.4	-116.7	363.3
2024-03-06	10:33:00	36.90	9.11	168.67	211.05	5.07	304.28	23.70	22.98	19163	10253	27.95	59113	1390	1143	870	483	202	194	-7.8	-33.9	-91.5	378.8
2024-03-06	10:34:00	37.31	9.03	168.58	212.31	5.31	318.53	23.70	22.44	19931	10466	29.09	61263	1388	1144	870	483	201	194	-18.0	-48.9	-110.3	360.8
2024-03-06	10:35:00	37.40	9.31	168.95	211.95	5.46	327.75	23.70	23.16	19500	10258	28.61	60179	1393	1144	863	484	202	194	-11.0	-43.1	-98.5	371.5
2024-03-06	10:36:00	36.75	9.29	169.72	213.03	5.33	319.65	23.70	22.30	19819	10253	29.37	61566	1388	1145	862	484	202	195	-15.4	-46.3	-105.7	366.3
2024-03-06	10:37:00	37.14	8.62	168.48	211.82	7.03	421.95	23.70	23.42	19438	10180	30.80	64591	1389	1145	863	484	202	195	-29.1	-66.6	-119.2	331.3
2024-03-06	10:38:00	37.14	8.93	169.14	210.96	5.28	316.58	23.70	23.42	19719	10292	29.47	61913	1381	1144	826	484	202	195	-18.8	-51.0	-109.3	350.9
2024-03-06	10:39:00	37.22	8.95	168.91	212.31	5.53	331.58	23.70	23.30	20313	10405	29.15	61463	1382	1143	822	484	202	195	-22.4	-48.8	-117.1	362.7
2024-03-06	10:40:00	37.07	9.55	169.38	210.96	5.15	308.70	23.70	23.26	19244	10303	28.45	60180	1390	1143	821	484	202	195	-8.0	-36.5	-93.0	379.8
2024-03-06	10:41:00	36.54	9.21	168.67	211.68	5.02	301.05	23.70	23.28	19975	10303	29.34	62113	1389	1144	822	484	201	195	-20.0	-50.6	-112.7	363.3
2024-03-06	10:42:00	36.75	9.08	168.63	212.00	5.36	321.45	23.70	23.24	19475	10303	28.91	60652	1387	1144	834	484	202	195	-12.6	-41.9	-100.7	372.1
2024-03-06	10:43:00	37.25	8.88	168.95	211.59	5.09	305.55	23.70	22.66	19613	10405	29.08	61246	1385	1144	844	484	202	195	-15.3	-44.9	-104.6	368.0
2024-03-06	10:44:00	36.71	9.31	168.48	211.23	5.15	309.00	23.70	22.70	19369	10292	30.52	64026	1387	1143	852	484	202	195	-26.0	-64.0	-116.6	328.8
2024-03-06	10:45:00	37.26	8.94	169.44	211.19	5.32	319.43	23.70	23.32	19638	10309	29.02	61074	1379	1142	849	484	202	195	-19.1	-52.0	-110.3	353.6
2024-03-06	10:46:00	36.99	9.24	168.77	211.95	5.11	306.53	23.70	23.36	20156	10298	28.90	60917	1381	1142	852	484	202	195	-19.9	-49.6	-117.5	363.3
2024-03-06	10:47:00	36.51	9.27	168.95	210.78	6.40	383.93	23.70	22.64	19406	10298	28.23	59612	1389	1142	850	484	202	195	-9.0	-39.6	-93.8	379.3
2024-03-06	10:48:00	36.48	9.26	168.72	212.22	5.28	316.50	23.70	23.24	19788	10315	29.04	61290	1387	1143	851	484	201	195	-21.6	-52.9	-113.7	362.9
2024-03-06	10:49:00	36.33	9.08	168.05	211.23	5.30	317.85	23.70	22.84	19550	10320	28.73	60381	1385	1142	850	484	201	195	-14.1	-45.1	-102.0	370.2
2024-03-06	10:50:00	36.53	8.86	168.67	212.85	5.24	314.48	23.70	22.34	19606	10326	28.79	60296	1383	1142	856	485	201	195	-18.0	-50.0	-107.7	367.2
2024-03-06	10:51:00	37.17	9.63	168.54	212.90	5.07	304.43	23.70	22.98	19413	10326	30.80	64598	1388	1142	861	485	201	195	-26.2	-64.5	-118.7	330.1
2024-03-06	10:52:00	37.07	9.02	169.53	211.77	5.36	321.83	23.70	23.26	19756	10427	29.08	61152	1382	1142	863	485	201	195	-18.0	-50.3	-110.1	352.8
2024-03-06	10:53:00	36.84	9.10	169.05	209.48	5.33	319.65	23.70	23.58	20419	10455	28.80	60752	1382	1142	865	485	201	195	-20.7	-46.4	-116.2	363.1
2024-03-06	10:54:00	36.57	9.30	170.62	211.59	5.20	312.23	23.70	22.44	19175	10326	28.37	59777	1385	1142	850	485	201	195	-5.8	-34.8	-90.5	377.8
2024-03-06	10:55:00	37.01	9.15	168.05	211.14	5.58	334.95	23.70	22.46	19913	10455	28.79	60683	1384	1143	851	485	201	195	-20.0	-49.8	-111.9	363.4
2024-03-06	10:56:00	37.07	9.13	168.58	211.68	5.15	308.70	23.70	22.80	19631	10225	28.33	59501	1388	1143	844	485	201	195	-12.3	-42.3	-100.4	373.2
2024-03-06	10:57:00	36.51	8.97	169.25	210.42	5.75	345.15	23.70	23.34	19663	10326	29.16	60969	1382	1144	849	485	201	195	-16.6	-49.6	-106.7	367.9
2024-03-06	10:58:00	36.90	9.10	169.14	211.59	4.95	297.00	23.70	22.90	19494	10332	30.50	63878	1387	1144	848	485	201	195	-26.5	-67.5	-118.8	329.8
2024-03-06	10:59:00	36.98	9.34	169.10	210.96	5.05	303.23	23.70	23.06	19675	10219	28.96	60839	1382	1143	840	485	201	195	-18.9	-51.0	-110.0	350.7
2024-03-06	11:00:00	37.05	9.43	169.05	210.38	4.96	297.53	23.70	22.40	20200	10466	28.93	61046	1379	1143	839	485	202	195	-18.4	-48.5	-115.5	362.6
2024-03-06	11:01:00	36.84	9.36	168.77	211.95	4.89	293.55	23.70	23.42	19175	10253	28.57	60403	1387	1143	838	485	202	195	-9.1	-36.9	-95.6	379.1
2024-03-06	11:02:00	37.05	9.10	168.91	211.01	4.93	295.65	23.70	23.22	19869	10472	29.14	61377	1384	1144	834	485	201	195	-20.3	-51.0	-112.6	362.3
2024-03-06	11:03:00	37.16	9.16	167.82	210.29	4.88	293.03	23.70	23.46	19394	10337	28.88	60796	1384	1143	837	485	201	195	-13.6	-43.0	-102.7	372.8
2024-03-06	11:04:00	36.75	9.14	168.20	211.28	5.27	316.35	23.70	22.42	19788	10337	28.69	60194	1379	1143	835	485	202	195	-16.6	-48.8	-106.7	368.6

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHour	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-06	11:05:00	36.53	9.07	168.48	210.78	5.31	318.60	23.70	23.16	19600	10214	30.78	64677	1382	1142	832	485	201	195	-34.2	-72.6	-126.9	335.1
2024-03-06	11:06:00	37.05	9.31	168.82	211.46	5.01	300.83	23.70	22.34	19606	10343	29.01	61254	1381	1142	828	485	202	195	-17.1	-50.0	-108.2	350.8
2024-03-06	11:07:00	36.51	9.06	167.77	210.74	5.12	306.98	17.81	22.60	20219	10528	28.06	59357	1378	1142	837	485	201	195	-21.5	-49.5	-115.1	365.1
2024-03-06	11:08:00	36.60	9.05	168.15	209.97	5.12	307.20	23.25	22.64	19369	10275	28.44	59934	1383	1143	839	485	201	195	-9.0	-38.1	-94.0	379.4
2024-03-06	11:09:00	37.47	9.21	169.53	211.37	5.23	313.95	23.25	23.22	19981	10388	29.83	63084	1385	1143	839	485	201	195	-18.6	-52.8	-110.7	361.8
2024-03-06	11:10:00	37.14	9.35	169.01	211.19	4.87	292.35	23.25	22.64	19363	10388	28.65	60360	1386	1143	837	485	202	195	-13.8	-44.9	-102.2	374.1
2024-03-06	11:11:00	36.63	9.42	169.76	211.59	5.22	313.35	23.25	23.52	19563	10382	28.78	60403	1383	1143	835	485	202	195	-18.4	-48.4	-106.9	370.0
2024-03-06	11:12:00	36.12	9.20	168.24	211.91	4.94	296.33	23.25	23.34	19331	10253	30.34	63707	1388	1144	834	485	202	195	-31.1	-69.3	-121.9	329.4
2024-03-06	11:13:00	36.75	9.16	169.01	209.70	4.88	293.03	23.25	22.58	19756	10264	28.88	60766	1378	1144	824	485	202	195	-18.3	-48.8	-109.8	353.2
2024-03-06	11:14:00	36.57	9.18	168.67	209.97	5.33	319.58	23.25	22.52	20050	10483	28.39	59954	1381	1144	837	485	202	195	-17.3	-47.9	-115.3	367.3
2024-03-06	11:15:00	36.62	9.53	169.34	212.09	5.13	307.65	23.25	22.44	19188	10247	28.29	59946	1386	1143	840	485	202	195	-7.5	-35.4	-91.9	380.9
2024-03-06	11:16:00	36.87	9.06	168.86	210.47	7.87	471.98	23.25	22.66	19913	10371	28.94	60862	1384	1144	836	485	201	195	-19.7	-50.4	-112.7	363.2
2024-03-06	11:17:00	36.54	8.95	168.58	210.42	5.79	347.25	23.25	22.80	19250	10270	27.67	58163	1384	1144	827	485	201	195	-13.6	-45.6	-101.4	372.3
2024-03-06	11:18:00	36.57	9.04	168.48	209.97	5.50	329.78	23.25	22.40	19650	10371	29.27	61292	1378	1144	837	485	201	195	-17.3	-50.1	-107.1	368.6
2024-03-06	11:19:00	36.71	9.12	167.92	211.46	5.11	306.68	23.25	23.10	19400	10343	30.32	63511	1382	1144	849	485	201	195	-29.8	-67.9	-120.3	329.9
2024-03-06	11:20:00	36.15	9.11	168.63	210.83	5.28	317.03	23.25	23.36	19650	10326	28.90	60693	1377	1143	849	485	202	195	-18.4	-50.5	-110.1	349.7
2024-03-06	11:21:00	36.60	9.12	168.48	209.93	5.72	343.43	23.25	23.48	20300	10326	28.83	60875	1376	1142	859	485	202	195	-18.8	-47.1	-116.7	361.0
2024-03-06	11:22:00	36.33	9.42	169.48	211.64	4.93	295.73	23.25	22.52	19350	10214	27.84	58879	1382	1142	846	485	201	195	-5.8	-35.8	-92.1	377.0
2024-03-06	11:23:00	36.75	9.23	168.67	211.59	5.34	320.25	23.25	23.52	19900	10320	28.88	61142	1377	1143	861	485	201	195	-19.5	-51.4	-111.8	361.8
2024-03-06	11:24:00	36.26	9.15	169.62	211.86	5.15	308.78	23.25	22.76	19475	10320	27.86	58623	1377	1142	864	485	201	195	-13.9	-45.0	-101.7	372.9
2024-03-06	11:25:00	36.41	9.45	168.72	214.07	4.98	298.50	23.25	22.62	19931	10337	28.77	60316	1373	1141	868	485	201	195	-16.6	-47.6	-107.3	368.0
2024-03-06	11:26:00	36.38	9.17	168.91	212.72	4.98	298.65	23.25	22.96	19294	10337	30.14	63244	1376	1141	870	485	200	195	-30.3	-67.1	-122.0	331.5
2024-03-06	11:27:00	36.09	9.13	168.82	211.59	4.90	294.08	23.25	22.48	19769	10455	29.13	61333	1372	1140	870	485	200	194	-18.5	-51.0	-110.1	352.9
2024-03-06	11:28:00	36.26	9.33	169.81	211.28	5.34	320.63	23.25	23.36	20325	10455	28.38	60006	1369	1139	875	485	200	194	-18.3	-47.0	-116.3	364.6
2024-03-06	11:29:00	36.23	9.32	168.86	212.63	5.05	302.70	23.25	22.58	19144	10230	28.15	59603	1375	1139	883	485	200	194	-8.9	-39.4	-95.6	381.8
2024-03-06	11:30:00	39.84	9.40	169.05	212.00	5.10	305.85	23.25	22.84	20038	10360	28.66	60781	1374	1140	892	485	199	194	-17.4	-49.1	-110.7	364.8
2024-03-06	11:31:00	39.03	9.38	168.91	211.37	5.05	303.00	23.25	22.32	19375	10230	28.03	59215	1391	1142	891	485	200	194	-11.5	-43.0	-101.5	375.1
2024-03-06	11:32:00	37.38	9.17	169.05	210.56	5.08	305.03	23.25	23.18	19863	10225	28.97	60893	1391	1144	893	485	201	194	-12.9	-43.6	-104.0	369.9
2024-03-06	11:33:00	36.81	9.14	169.01	210.29	6.38	382.65	23.25	23.46	19525	10236	30.52	64093	1392	1146	894	485	202	194	-28.6	-67.1	-121.2	328.0
2024-03-06	11:34:00	37.19	9.22	169.29	212.13	4.96	297.53	23.25	23.30	19625	10337	29.23	61313	1386	1146	872	485	202	194	-19.6	-51.6	-110.7	357.9
2024-03-06	11:35:00	36.69	9.12	168.44	210.74	4.96	297.30	23.25	22.64	20238	10466	28.75	60243	1385	1145	870	485	202	194	-16.9	-46.5	-113.0	366.8
2024-03-06	11:36:00	36.75	9.12	169.67	212.81	5.14	308.25	23.25	22.68	19175	10236	28.61	60265	1388	1145	870	485	202	194	-6.4	-36.5	-91.1	379.3
2024-03-06	11:37:00	36.77	9.13	168.11	211.68	5.20	312.23	23.25	22.54	19788	10337	28.91	61040	1390	1146	852	485	202	194	-18.2	-49.0	-110.3	361.9
2024-03-06	11:38:00	36.89	8.89	168.63	209.97	5.12	307.13	23.25	23.06	19569	10337	28.80	60415	1388	1146	839	485	202	195	-11.9	-44.3	-100.2	371.3
2024-03-06	11:39:00	37.20	9.04	169.48	209.66	5.03	301.88	23.25	23.46	19638	10337	29.45	61625	1384	1146	823	485	202	195	-15.5	-47.8	-106.2	369.1
2024-03-06	11:40:00	36.93	8.99	167.68	211.73	4.87	292.35	23.25	22.32	19619	10219	30.32	63504	1387	1145	821	485	202	195	-30.5	-68.5	-122.9	328.3
2024-03-06	11:41:00	36.90	8.78	169.57	211.55	5.11	306.68	23.25	22.54	19644	10348	29.57	62062	1382	1145	830	485	202	195	-18.6	-49.0	-109.8	352.4
2024-03-06	11:42:00	37.08	9.12	168.72	210.83	5.08	304.73	23.25	22.78	20481	10478	28.70	60549	1376	1144	829	485	202	195	-20.5	-47.5	-116.6	370.9
2024-03-06	11:43:00	36.89	8.75	168.95	210.92	4.95	296.78	23.25	22.58	19169	10360	28.34	59849	1380	1143	820	485	202	195	-6.7	-33.5	-92.1	380.6
2024-03-06	11:44:00	36.80	9.26	169.05	213.26	4.93	295.65	23.25	23.26	19831	10444	29.06	61459	1380	1144	828	485	201	195	-18.9	-49.3	-111.2	362.4
2024-03-06	11:45:00	36.60	8.97	168.54	213.57	4.87	291.98	23.25	22.98	19544	10332	29.03	61078	1381	1143	822	485	201	195	-11.6	-42.9	-98.8	371.2
2024-03-06	11:46:00	36.29	9.07	169.14	211.77	4.87	292.13	23.25	22.36	19881	10337	29.20	61278	1375	1143	833	485	201	195	-15.9	-45.4	-106.1	368.1
2024-03-06	11:47:00	36.84	9.19	168.95	210.06	5.12	306.90	23.25	23.38	19444	10230	30.83	64748	1376	1142	829	485	200	195	-30.4	-67.5	-123.8	327.4
2024-03-06	11:48:00	36.54	8.94	168.82	212.27	5.04	302.63	23.25	22.44	19663	10236	28.86	60691	1371	1140	821	485	200	194	-20.2	-53.0	-110.8	351.6
2024-03-06	11:49:00	36.26	9.02	169.10	209.75	5.25	315.23	23.25	23.18	20244	10348	28.73	60594	1367	1139	823	485	200	194	-20.3	-48.1	-116.7	364.5
2024-03-06	11:50:00	37.05	8.92	169.25	210.65	5.34	320.40	23.25	23.36	19413	10242	28.83	61085	1371	1138	839	485	200	194	-7.6	-36.9	-93.6	376.3
2024-03-06	11:51:00	36.24	8.92	169.34	212.22	5.05	303.23	23.25	22.48	19681	10343	29.05	61647	1371	1138	841	485	199	194	-20.6	-51.8	-112.2	362.7
2024-03-06	11:52:00	36.53	9.05	169.44	211.19	4.89	293.10	23.25	22.44	19725	10343	29.04	61249	1374	1138	842	485	199	194	-12.3	-42.6	-102.0	371.4
2024-03-06	11:53:00	36.50	9.13	168.95	210.87	5.05	302.70	23.25	22.74	19681	10354	28.90	61213	1369	1138	852	485	199	194	-16.6	-46.8	-107.9	367.5
2024-03-06	11:54:00	36.44	9.23	169.10	211.95	5.11	306.83	23.25	22.52	19550	10461	30.96	65312	1372	1138	858	485	199	194	-30.6	-68.4	-124.1	328.7
2024-03-06	11:55:00	37.07	9.50	169.81	212.40	5.23	313.88	23.25	23.28	19813	10360	29.70	62607	1368	1138	866	485	199	194	-18.0	-48.0	-108.7	351.4
2024-03-06	11:56:00	36.29	9.05	168.72	209.84	4.96	297.75	23.25	22.48	20344	10360	29.12	61768	1365	1138	870	485	199	193	-18.8	-48.4	-116.0	366.6
2024-03-06	11:57:00	36.42	8.77	169.01	212.45	5.22	313.13	23.25	22.50	19350	10230	28.54	60588	1370	1138	866	485	199	193	-8.5	-37.8	-94.1	380.5
2024-03-06	11:58:00	36.53	9.02	169.20	212.09	5.04	302.18	23.25	22.62	19919	10270	29.10	61762	1371	1139	864	485	199	193	-17.9	-50.1	-110.4	360.8
2024-03-06	11:59:00	36.15	8.97	168.24	210.87	4.92	295.28	23.25	23.36	19650	10135	28.73	60671	1371	1139	862	485	198	193	-13.5	-42.6	-101.0	373.0
2024-03-06	12:00:00	36.69	9.28	168.67	212.76	4.78	286.65	23.25	22.90	19769	10343	29.07	61614	1367	1139	859	485	199	193	-16.3	-48.1	-106.8	368.4
2024-03-06	12:01:00	36.65	9.10	168.67	210.33	6.24	374.48	23.25	22.66	19463	10225	30.84	65094	1372	1139	867	485	198	193	-29.9	-68.1	-120.3	330.6
2024-03-06	12:02:00	37.11	9.25	169.34	211.14	5.23	313.80	23.25	22.48	19563	10332	29.38	62235	1369	1139	868	485	199	193	-16.6	-47.0	-108.0	351.8
2024-03-06	12:03:00	37.01	9.42	169.57	211.37	5.00	300.08	23.25	22.74	20231	10444	28.51	60505	1368	1139	868	484	199	193	-18.5	-47.9	-116.0	364.5
2024-03-06	12:04:00	38.04	8.96	169.01	211.41	4.91	294.83	23.25	22.40	19250	10315	28.57	60656	1375	1140	875	484	200	193	-6.9	-36.5	-92.0	379.8
2024-03-06	12:05:00	37.14	9.08	168.44	212.36	6.32	379.28	23.25	23.52	19831	10427	28.96	61733	1379	1142	866	484	200	193	-20.0	-53.6	-113.1	364.9
2024-03-06	12:06:00	37.38	9.10	169.14	211.37	6.16	369.45	23.18	23.22	19575	10433	28.60	60475	1382	1142	865	484	200	193	-12.1	-41.9	-101.3	373.9
2024-03-06	12:07:00	37.70	9.12	169.05	210.87	5.11	306.53	23.18	23.42	19556	10332	29.38	62155	1381	1143	869	484	200	193	-15.5	-46.4	-107.0	369.3
2024-03-06	12:08:00	37.40	8.83	168.72	210.78	4.95	297.08	23.18	23.06	19519	10225	29.72	62440	1383	1143	867	484	200	193	-28.5	-68.4	-120.6	331.8
2024-03-06	12:09:00	36.57	9.27	168.91	210.56	5.20	311.93	23.18	22.48	19756	10281	28.77	60609	1375	1143	865	484	201	194	-17.5	-48.6	-109.7	352.4

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHour	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-06	12:10:00	36.74	8.94	169.14	210.11	5.99	359.40	23.18	22.46	20131	10393	28.95	61212	1377	1142	868	484	201	194	-20.3	-47.5	-116.6	363.2
2024-03-06	12:11:00	36.90	9.18	169.14	210.38	4.89	293.40	23.18	22.96	19263	10180	28.55	60458	1381	1143	867	484	201	194	-7.7	-37.9	-94.0	380.0
2024-03-06	12:12:00	36.81	8.84	168.48	210.69	5.01	300.75	23.18	23.38	19838	10421	29.50	62558	1379	1143	860	484	201	194	-19.3	-51.4	-112.4	362.0
2024-03-06	12:13:00	36.29	8.68	168.63	208.67	5.42	324.98	23.18	23.28	19456	10298	29.56	62080	1379	1143	857	484	201	194	-14.3	-46.1	-104.0	377.2
2024-03-06	12:14:00	36.89	9.22	169.34	209.93	4.91	294.45	23.18	23.46	19856	10399	28.99	60898	1372	1143	857	485	201	194	-12.9	-42.9	-105.3	366.8
2024-03-06	12:15:00	36.35	9.19	168.39	209.97	5.13	307.80	23.18	22.96	19406	10298	31.11	65448	1378	1143	849	485	201	194	-29.7	-67.8	-120.1	329.7
2024-03-06	12:16:00	37.14	9.44	168.77	211.05	4.88	292.80	23.18	22.50	19631	10399	29.34	61912	1373	1143	846	485	202	194	-15.9	-45.9	-109.1	351.0
2024-03-06	12:17:00	36.48	8.96	168.77	210.78	5.27	315.98	23.18	23.10	20288	10393	28.94	61270	1375	1143	843	485	202	194	-17.9	-48.3	-117.3	362.9
2024-03-06	12:18:00	36.20	9.05	169.95	211.28	4.75	284.93	23.18	22.36	19344	10292	29.11	61583	1379	1143	840	485	201	194	-7.6	-36.6	-93.5	380.1
2024-03-06	12:19:00	37.40	9.16	169.20	211.19	5.05	302.93	23.18	23.30	19788	10388	29.04	61492	1379	1144	836	485	201	194	-18.5	-49.9	-111.3	361.7
2024-03-06	12:20:00	36.83	9.08	167.64	210.60	4.83	289.65	23.18	23.24	19450	10281	29.16	61143	1382	1145	845	485	201	194	-11.6	-41.9	-99.7	372.5
2024-03-06	12:21:00	36.77	8.98	169.57	212.00	6.36	381.38	23.18	23.44	19681	10298	29.41	61611	1377	1145	839	485	201	195	-12.5	-46.0	-105.4	367.6
2024-03-06	12:22:00	37.01	9.09	168.54	210.15	4.85	290.85	23.18	22.68	19281	10298	30.44	63741	1384	1145	835	485	201	195	-29.3	-69.1	-120.5	330.5
2024-03-06	12:23:00	36.45	9.31	169.57	210.87	5.09	305.48	23.18	22.66	19706	10298	29.62	62051	1378	1145	832	485	202	195	-16.4	-47.9	-109.2	351.8
2024-03-06	12:24:00	36.21	9.12	169.57	212.09	5.13	307.65	23.18	22.86	20263	10388	29.47	62097	1378	1145	831	485	202	195	-17.8	-47.3	-114.9	363.4
2024-03-06	12:25:00	36.47	9.45	169.95	210.96	4.94	296.55	23.18	22.66	19244	10281	28.70	60592	1379	1145	833	485	202	195	-6.6	-36.0	-92.3	379.1
2024-03-06	12:26:00	37.44	9.37	169.91	212.27	5.22	313.28	23.18	23.40	19856	10275	29.17	61308	1383	1146	818	485	201	195	-16.1	-47.0	-109.7	363.0
2024-03-06	12:27:00	37.49	9.32	167.11	212.36	5.46	327.60	23.18	22.50	19519	10169	28.50	59966	1388	1146	818	485	201	195	-13.0	-44.1	-101.6	374.5
2024-03-06	12:28:00	37.46	9.12	168.95	210.20	5.13	307.95	23.18	23.14	19656	10185	29.22	61148	1383	1147	813	485	201	195	-14.9	-44.3	-106.1	369.2
2024-03-06	12:29:00	36.35	9.09	168.72	209.79	5.05	303.23	23.18	22.58	19288	10303	31.44	65747	1387	1148	810	485	202	195	-27.2	-66.6	-120.2	331.4
2024-03-06	12:30:00	36.23	9.13	169.14	211.64	6.01	360.30	23.18	23.04	19488	10197	29.64	62060	1380	1148	814	485	202	195	-18.2	-48.1	-110.4	353.2
2024-03-06	12:31:00	35.85	9.06	168.39	211.64	4.87	292.43	23.18	23.08	20300	10343	29.66	62423	1378	1147	809	486	202	195	-21.4	-48.1	-116.0	362.4
2024-03-06	12:32:00	36.74	9.08	169.67	209.61	4.76	285.75	23.18	23.30	19256	10230	28.80	60736	1380	1147	807	486	201	195	-7.4	-36.1	-92.6	377.3
2024-03-06	12:33:00	37.20	9.02	169.25	211.37	5.37	322.13	23.18	22.70	19856	10337	29.75	62834	1383	1147	792	486	201	195	-17.1	-51.0	-111.4	362.1
2024-03-06	12:34:00	37.89	8.97	167.58	210.47	6.47	388.35	23.18	22.38	19381	10326	28.41	59779	1386	1146	789	486	201	195	-11.5	-42.5	-101.4	375.4
2024-03-06	12:35:00	37.68	9.21	169.62	211.64	5.04	302.40	23.18	22.48	19669	10348	29.98	62792	1386	1147	788	486	202	195	-14.1	-46.4	-105.7	369.8
2024-03-06	12:36:00	37.04	9.05	169.20	211.64	5.01	300.60	23.18	23.04	19194	10348	30.98	64849	1392	1149	787	486	202	195	-28.2	-67.8	-120.0	330.6
2024-03-06	12:37:00	36.99	9.50	169.53	211.82	4.80	287.70	23.18	23.40	19600	10360	29.40	61721	1384	1149	792	486	203	195	-16.7	-49.4	-109.0	354.0
2024-03-06	12:38:00	35.55	9.18	168.58	210.96	5.75	344.78	23.18	22.60	20181	10354	28.71	60645	1383	1148	796	486	203	195	-18.8	-47.0	-115.9	366.1
2024-03-06	12:39:00	36.41	8.73	168.72	209.84	5.63	337.65	23.18	22.98	19094	10129	28.47	59599	1388	1147	784	486	202	195	-7.7	-36.9	-93.3	380.8
2024-03-06	12:40:00	37.02	8.90	168.67	211.10	5.95	357.15	23.18	22.98	19756	10466	29.29	61643	1383	1146	781	486	202	195	-17.4	-48.6	-111.5	360.4
2024-03-06	12:41:00	36.90	9.28	167.92	210.60	4.92	295.05	23.18	22.72	19500	10365	28.98	60788	1386	1145	775	486	202	195	-10.3	-38.4	-100.5	371.9
2024-03-06	12:42:00	36.53	8.94	168.63	210.29	4.87	292.35	23.18	22.38	19425	10348	29.18	61039	1383	1144	777	486	202	195	-14.1	-45.9	-105.6	366.8
2024-03-06	12:43:00	37.04	9.05	168.63	209.30	4.91	294.45	23.18	23.30	19450	10242	30.67	64286	1385	1143	779	486	202	195	-27.2	-67.4	-120.4	327.9
2024-03-06	12:44:00	36.27	8.96	169.48	210.29	5.10	305.70	23.18	23.30	19731	10365	28.72	60307	1376	1142	782	486	202	195	-17.5	-49.6	-109.3	351.7
2024-03-06	12:45:00	36.80	8.95	169.25	210.65	6.44	386.63	23.18	22.44	20425	10365	29.31	61752	1377	1141	785	486	202	195	-18.9	-44.9	-116.7	368.3
2024-03-06	12:46:00	36.38	9.15	169.67	211.37	5.65	339.23	23.18	23.46	19325	10253	28.74	60588	1378	1141	786	486	202	195	-7.1	-36.8	-94.1	379.9
2024-03-06	12:47:00	36.63	8.75	169.25	212.54	4.96	297.45	23.18	22.46	19838	10337	29.70	62733	1380	1141	783	486	202	195	-19.4	-52.5	-111.3	362.6
2024-03-06	12:48:00	36.57	9.24	168.30	211.50	4.89	293.18	23.18	23.32	19419	10214	28.57	60057	1382	1141	787	486	202	195	-12.1	-42.9	-101.4	373.1
2024-03-06	12:49:00	37.10	9.16	169.01	210.87	5.31	318.75	23.18	22.88	19481	10326	29.25	61196	1381	1142	795	486	202	195	-16.1	-44.9	-108.2	368.6
2024-03-06	12:50:00	36.74	9.06	168.77	211.37	4.84	290.63	23.18	23.30	19481	10214	31.08	65054	1383	1142	804	486	202	195	-24.3	-63.5	-119.1	329.8
2024-03-06	12:51:00	36.81	9.12	169.53	210.65	4.91	294.60	23.18	22.78	19669	10326	29.12	60632	1383	1142	790	486	202	195	-16.2	-48.3	-107.1	351.3
2024-03-06	12:52:00	37.05	8.94	169.29	210.29	5.68	340.80	23.18	23.20	20025	10427	28.90	60785	1382	1143	796	486	202	195	-14.7	-45.8	-113.7	362.3
2024-03-06	12:53:00	37.26	9.03	169.34	210.33	4.77	285.98	23.18	22.46	19106	10326	28.08	59186	1386	1142	801	486	202	195	-5.5	-33.8	-92.3	378.1
2024-03-06	12:54:00	36.41	8.92	169.05	212.00	5.03	301.58	23.18	23.26	19950	10360	29.24	61392	1385	1143	807	486	202	195	-16.6	-48.3	-109.9	361.3
2024-03-06	12:55:00	36.60	9.01	168.77	210.51	5.03	301.73	23.18	23.48	19113	10258	28.72	60128	1383	1144	807	487	202	195	-11.1	-41.5	-99.6	370.9
2024-03-06	12:56:00	37.28	9.10	169.20	210.83	4.82	289.20	23.18	22.94	19725	10287	29.00	60264	1381	1144	795	487	202	195	-12.9	-43.3	-104.1	366.2
2024-03-06	12:57:00	36.09	9.14	168.39	208.76	5.00	299.93	23.18	22.54	19294	10388	30.34	63386	1388	1144	803	487	202	195	-27.2	-66.4	-119.1	328.1
2024-03-06	12:58:00	37.64	9.29	169.20	211.41	5.06	303.60	23.18	23.30	19675	10388	29.13	60934	1382	1144	807	487	202	195	-15.2	-45.4	-108.9	351.6
2024-03-06	12:59:00	37.01	9.49	169.67	211.19	4.81	288.68	23.18	23.38	20069	10393	28.82	60519	1387	1144	815	487	203	195	-16.3	-44.9	-114.0	363.6
2024-03-06	13:00:00	36.96	9.06	168.63	211.28	5.07	303.98	23.18	22.52	19175	10169	28.84	60516	1391	1145	815	487	203	195	-4.4	-34.8	-89.6	378.7
2024-03-06	13:01:00	36.99	9.25	168.44	210.02	5.00	300.00	23.18	23.22	19806	10393	29.31	61563	1388	1146	809	487	202	195	-17.8	-48.8	-111.5	364.1
2024-03-06	13:02:00	37.25	8.88	168.86	209.34	4.88	292.50	23.18	22.48	19538	10185	28.34	59219	1389	1147	804	487	202	195	-9.8	-39.9	-98.7	373.4
2024-03-06	13:03:00	37.01	9.15	168.91	211.41	4.87	291.90	23.18	23.32	19588	10298	29.32	61085	1384	1147	800	487	202	196	-14.7	-45.6	-107.1	368.8
2024-03-06	13:04:00	35.48	9.33	169.05	209.07	4.89	293.48	23.18	22.74	19231	10208	29.73	62035	1387	1146	795	487	202	196	-25.8	-65.1	-119.4	328.3
2024-03-06	13:05:00	36.90	9.09	169.62	211.59	4.91	294.83	23.18	22.36	19700	10348	28.98	60667	1376	1145	792	487	203	195	-17.0	-47.0	-109.7	350.2
2024-03-06	13:06:00	36.98	9.28	169.14	209.25	5.13	307.73	23.18	22.36	20031	10337	28.55	60026	1378	1144	792	487	203	195	-18.2	-43.9	-115.9	361.8
2024-03-06	13:07:00	36.14	8.93	169.05	210.96	5.20	312.15	23.18	23.40	19275	10208	28.23	59393	1384	1144	790	487	203	195	-6.0	-35.3	-93.3	377.8
2024-03-06	13:08:00	36.60	9.08	168.95	209.93	5.40	323.93	23.18	22.46	19850	10309	28.91	60743	1385	1144	779	487	203	195	-18.2	-50.1	-112.3	360.9
2024-03-06	13:09:00	37.02	9.14	170.19	212.04	5.02	301.05	23.18	23.06	19419	10309	28.49	59686	1388	1145	788	487	203	196	-10.7	-41.8	-100.7	370.9
2024-03-06	13:10:00	37.67	6.76	169.81	212.36	4.95	297.23	23.18	23.34	19675	10405	28.80	59824	1386	1145	797	487	203	196	-11.1	-42.1	-104.6	366.4
2024-03-06	13:11:00	37.65	9.11	168.77	212.63	5.94	356.63	23.18	22.46	19400	10292	30.49	63619	1393	1146	799	487	203	196	-23.9	-60.5	-116.3	327.8
2024-03-06	13:12:00	36.98	9.00	168.39	211.86	7.59	455.48	23.85	23.06	19531	10399	28.75	60341	1388	1147	803	487	203	196	-14.0	-46.0	-107.0	352.2
2024-03-06	13:13:00	36.81	9.20	167.92	211.37	4.92	295.05	23.85	23.50	19944	10399	28.72	59999	1389	1148	805	487	204	196	-17.0	-44.4	-116.1	365.9
2024-03-06	13:14:00	37.37	9.21	168.20	211.41	4.99	299.55	23.85	22.56	19206	10298	28.62	59733	1392	1149	796	487	204	196	-5.9	-33.3	-93.6	380.6

		Waste Flows							Flows	Air Flows				Temperatures							Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHour	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-06	13:15:00	37.52	8.84	168.54	211.14	5.02	300.90	23.85	23.36	19925	10332	28.98	60733	1393	1151	790	487	204	196	-16.1	-47.3	-109.4	361.1
2024-03-06	13:16:00	37.26	8.97	168.86	212.00	5.19	311.10	23.85	23.40	19456	10230	28.36	59036	1396	1152	788	487	204	196	-9.9	-39.6	-101.0	372.2
2024-03-06	13:17:00	37.28	9.06	169.01	212.36	5.02	301.43	23.85	22.90	19575	10219	28.65	59434	1389	1152	786	487	204	197	-13.7	-44.0	-105.0	368.0
2024-03-06	13:18:00	37.34	8.71	168.91	212.99	4.84	290.40	23.85	23.32	19425	10292	30.20	62760	1396	1152	782	488	204	197	-24.8	-62.6	-119.0	329.1
2024-03-06	13:19:00	37.53	9.46	169.76	212.31	5.65	338.85	23.85	23.40	19681	10326	29.21	60903	1392	1152	777	487	205	197	-14.2	-44.4	-106.6	350.8
2024-03-06	13:20:00	38.37	9.21	169.44	211.86	5.54	332.40	23.85	22.50	20106	10427	29.08	61151	1391	1152	777	488	205	197	-17.1	-47.1	-115.2	365.1
2024-03-06	13:21:00	37.85	9.10	169.01	212.63	5.27	316.35	23.85	23.42	18963	10326	28.40	59538	1402	1153	766	488	205	197	-3.3	-30.6	-88.7	377.4
2024-03-06	13:22:00	36.03	9.11	168.63	210.74	4.89	293.10	23.85	22.46	19825	10354	29.01	60679	1399	1153	745	488	204	197	-20.8	-53.8	-115.1	373.8
2024-03-06	13:23:00	35.67	9.07	168.15	210.74	5.20	312.15	23.85	22.92	19481	10247	28.02	58082	1395	1153	734	488	204	197	-12.1	-41.4	-100.2	376.3
2024-03-06	13:24:00	36.03	9.23	168.82	212.90	5.12	307.43	23.85	22.54	19738	10270	28.73	59437	1386	1151	732	488	204	197	-14.1	-43.9	-105.5	369.8
2024-03-06	13:25:00	36.36	8.92	168.82	211.82	5.58	334.95	23.85	23.10	19425	10365	31.03	64430	1386	1150	720	488	204	197	-28.4	-65.6	-120.4	331.4
2024-03-06	13:26:00	35.84	9.19	169.14	210.29	5.09	305.55	23.85	23.28	19631	10365	28.89	60134	1378	1149	712	488	204	197	-17.9	-48.5	-111.0	353.9
2024-03-06	13:27:00	35.70	8.88	168.35	210.96	5.08	304.50	23.85	23.18	20319	10376	28.78	60416	1377	1147	709	488	203	197	-19.4	-50.5	-117.5	366.0
2024-03-06	13:28:00	35.85	9.09	169.14	211.46	5.00	299.85	23.85	23.06	19181	10163	28.38	59736	1383	1146	710	488	203	197	-9.7	-39.3	-96.0	382.3
2024-03-06	13:29:00	36.66	9.17	168.24	211.41	5.31	318.75	23.85	23.42	19869	10399	28.94	61055	1379	1146	715	488	203	196	-17.1	-47.0	-110.8	362.6
2024-03-06	13:30:00	36.96	9.21	168.77	212.13	5.48	328.88	23.85	23.36	19419	10292	28.16	59209	1383	1145	722	488	203	196	-9.8	-40.9	-99.8	375.1
2024-03-06	13:31:00	37.31	9.21	169.48	212.40	4.89	293.63	23.85	22.76	19663	10393	29.26	61318	1381	1146	733	488	203	196	-11.6	-41.6	-104.1	369.6

March 06/2024	Waste Flows							Flows	Air Flows				Temperatures							Pressures			
	Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	SecondaryA	SecondaryB	Quench	SprayDryer	Stack	Incinerator	SDA Inlet	SD Outlet	Baghouse
Test 2	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	Lbs/h	PV-236	PV-209	FT-260-VEL	FT-260-REFDRYHOUR	TE-240	T-241A	T-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
Units	LPM	LPM	LPM	LPM	LPM	SCFM	LPM	SC-PAC-FT	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
Max	39.84	9.84	170.62	214.34	7.92	475.20	23.89	23.58	20550	10562	31.44	66368	1402	1153	929	488	205	197	-3.3	-30.6	-88.7	384.4
Min	35.48	6.76	167.11	208.67	4.71	282.53	17.81	22.22	18963	10129	27.67	58082	1354	1130	709	480	197	192	-34.5	-72.6	-126.9	327.4
Average	36.90	9.13	168.92	211.44	5.25	314.94	23.43	22.92	19700	10332	29.17	61539	1377	1141	849	484	201	194	-17.6	-48.9	-108.7	361.2
Variance	0.28	0.06	0.26	0.99	0.23	835.90	0.18	0.14	103874	6264	0.53	2344711	96	26	2248	6	3	2	41.2	80.0	76.2	229.0

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	T-260-REFDRYHo	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-07	8:36:00	36.78	9.38	165.31	211.50	4.76	285.45	23.74	24.82	19463	10315	28.93	61055	1428	1134	872	467	207	199	-8.9	-43.8	-101.0	390.4
2024-03-07	8:37:00	36.99	9.43	165.60	208.49	4.75	285.08	23.74	25.38	19975	10416	29.45	61976	1430	1134	853	467	205	199	-19.5	-56.6	-119.0	372.6
2024-03-07	8:38:00	36.72	9.14	164.79	209.84	4.74	284.33	23.74	24.64	19513	10309	28.92	60172	1427	1133	845	467	205	199	-15.4	-52.1	-110.7	384.5
2024-03-07	8:39:00	36.62	9.24	165.22	210.47	4.82	288.90	23.74	25.58	19663	10410	29.22	60639	1422	1134	844	467	205	199	-17.4	-54.4	-113.5	379.3
2024-03-07	8:40:00	36.60	9.03	164.70	209.61	4.75	284.85	23.74	24.66	19538	10410	31.23	65080	1424	1133	851	467	204	199	-33.7	-77.3	-135.3	339.4
2024-03-07	8:41:00	36.68	9.04	164.94	209.52	4.76	285.75	23.74	25.48	19638	10421	29.34	61328	1420	1133	852	467	204	198	-20.3	-58.4	-117.7	363.9
2024-03-07	8:42:00	36.56	9.08	164.98	210.83	4.75	285.00	23.74	25.56	20281	10416	29.16	61240	1420	1132	852	467	204	198	-18.5	-55.4	-120.1	379.8
2024-03-07	8:43:00	36.87	9.39	165.60	210.06	4.75	284.78	23.74	25.66	19406	10303	27.94	58771	1428	1132	852	467	203	198	-9.6	-44.0	-103.2	391.5
2024-03-07	8:44:00	36.89	9.36	165.84	209.97	4.76	285.30	23.74	25.64	20069	10405	29.47	62085	1429	1131	843	468	203	197	-21.2	-58.5	-122.3	375.3
2024-03-07	8:45:00	36.48	8.55	164.60	210.74	4.78	286.65	23.74	25.02	19569	10298	28.79	60350	1431	1131	841	468	203	197	-16.4	-53.8	-112.5	386.6
2024-03-07	8:46:00	36.69	8.94	165.54	209.93	4.76	285.30	23.74	24.56	19744	10326	29.54	61990	1426	1132	844	468	203	197	-18.5	-54.1	-118.7	382.5
2024-03-07	8:47:00	36.17	9.36	164.64	208.67	4.74	284.48	23.74	24.64	19713	10326	31.13	65092	1429	1132	845	468	203	197	-35.7	-78.5	-139.7	342.4
2024-03-07	8:48:00	36.66	9.46	164.84	210.51	4.75	285.15	23.74	24.88	19794	10348	28.79	60352	1421	1132	845	468	203	197	-21.4	-60.3	-120.8	367.0
2024-03-07	8:49:00	36.69	9.09	164.84	209.30	4.73	283.65	23.74	25.36	20281	10573	28.60	60564	1421	1131	844	468	203	197	-19.8	-54.8	-122.5	382.0
2024-03-07	8:50:00	36.78	9.03	164.94	210.20	4.78	286.50	23.74	24.64	19419	10354	28.58	60268	1428	1131	834	468	203	197	-10.3	-44.3	-103.5	393.2
2024-03-07	8:51:00	36.69	9.26	164.88	210.11	4.75	284.93	23.74	25.36	20044	10455	28.68	60567	1427	1131	824	468	202	197	-23.2	-62.0	-123.2	377.2
2024-03-07	8:52:00	36.41	8.81	164.27	210.15	4.77	285.98	23.74	25.18	19644	10455	29.34	61436	1428	1130	831	469	202	197	-16.8	-55.8	-112.1	386.4
2024-03-07	8:53:00	36.60	9.12	166.12	210.78	4.80	287.85	23.74	24.76	19706	10343	29.31	61412	1420	1130	831	469	202	197	-19.1	-56.0	-119.0	383.0
2024-03-07	8:54:00	36.74	8.96	164.94	209.48	4.72	283.35	23.74	25.60	19631	10337	31.58	66296	1424	1130	842	469	202	197	-36.8	-80.0	-139.2	339.8
2024-03-07	8:55:00	36.89	9.37	165.35	210.65	4.77	285.90	23.74	25.28	20063	10410	29.72	62550	1418	1130	841	469	202	196	-20.0	-57.5	-120.0	363.6
2024-03-07	8:56:00	36.41	9.19	164.55	211.10	4.75	284.93	23.74	25.60	20344	10539	29.59	62471	1417	1130	844	469	202	196	-21.3	-58.5	-123.3	382.8
2024-03-07	8:57:00	36.65	9.37	165.22	210.38	4.73	284.03	23.74	24.82	19544	10332	28.82	60916	1428	1131	845	469	201	196	-11.8	-44.6	-104.5	392.4
2024-03-07	8:58:00	36.53	9.21	164.98	210.24	4.77	286.35	23.74	24.66	20119	10438	28.99	61346	1425	1131	851	469	201	196	-23.9	-62.9	-123.7	375.9
2024-03-07	8:59:00	36.42	8.93	164.27	211.32	4.75	284.85	23.74	25.56	19663	10433	29.20	61529	1426	1131	857	469	201	196	-18.9	-53.6	-115.1	385.2
2024-03-07	9:00:00	36.20	8.95	165.78	210.02	4.78	286.65	23.74	25.50	19825	10433	29.17	61306	1419	1130	865	469	201	196	-20.9	-58.1	-119.5	381.3
2024-03-07	9:01:00	36.41	9.22	165.12	209.39	4.71	282.45	23.74	25.62	19669	10309	30.80	64712	1423	1130	870	469	201	196	-36.5	-81.6	-140.0	340.6
2024-03-07	9:02:00	36.39	9.03	165.22	210.65	4.74	284.33	23.74	25.28	20019	10416	29.39	61923	1417	1130	873	469	201	196	-21.8	-60.1	-120.9	365.3
2024-03-07	9:03:00	36.48	9.06	165.12	211.14	4.74	284.40	23.74	24.68	20444	10523	28.98	61705	1414	1130	875	469	201	195	-21.4	-57.5	-124.2	382.1
2024-03-07	9:04:00	36.38	9.29	165.26	212.00	4.72	282.90	23.74	25.38	19394	10298	28.78	61052	1422	1129	881	469	201	195	-13.8	-46.9	-106.1	393.0
2024-03-07	9:05:00	36.27	9.13	165.26	211.28	4.70	282.08	23.74	25.54	20050	10393	29.64	62766	1418	1129	880	469	200	195	-24.1	-61.9	-124.0	375.1
2024-03-07	9:06:00	36.51	9.38	164.08	211.64	4.69	281.55	23.74	25.28	19581	10281	29.04	61500	1422	1129	884	469	200	195	-18.7	-54.6	-114.8	385.3
2024-03-07	9:07:00	36.69	9.08	165.31	210.96	4.73	283.50	23.74	24.60	19800	10393	29.46	62422	1414	1130	885	469	200	195	-21.5	-59.6	-119.9	383.6
2024-03-07	9:08:00	36.15	8.74	164.17	210.69	4.73	283.50	23.74	24.62	19900	10393	30.43	64283	1418	1129	887	469	200	195	-38.0	-82.4	-141.5	341.9
2024-03-07	9:09:00	35.90	9.00	164.88	211.59	4.68	280.73	23.74	24.58	20006	10433	29.56	62262	1410	1129	873	469	200	195	-21.0	-57.5	-122.3	366.1
2024-03-07	9:10:00	36.08	9.04	164.45	211.64	4.68	281.03	23.74	24.58	20363	10438	29.16	61834	1410	1128	852	469	200	195	-23.6	-59.5	-123.9	385.5
2024-03-07	9:11:00	36.32	8.91	164.70	208.94	4.71	282.68	23.74	24.80	19194	10337	28.60	61006	1418	1127	836	469	200	195	-12.1	-48.3	-103.9	393.5
2024-03-07	9:12:00	36.84	8.67	164.64	210.60	4.70	282.00	23.74	25.32	20119	10551	29.24	62186	1418	1128	833	469	199	194	-23.8	-62.5	-125.3	377.3
2024-03-07	9:13:00	36.65	8.97	165.54	210.20	4.67	280.28	23.74	25.48	19613	10326	28.62	60983	1422	1129	838	469	199	194	-17.9	-54.3	-114.0	385.0
2024-03-07	9:14:00	36.53	9.33	165.07	209.48	4.74	284.40	23.74	24.60	19975	10433	29.33	61759	1417	1129	847	469	200	195	-18.0	-55.0	-119.6	381.6
2024-03-07	9:15:00	37.17	9.32	165.69	211.55	4.71	282.38	23.74	25.02	19944	10332	30.81	65125	1418	1130	852	469	200	195	-35.6	-79.3	-139.6	341.3
2024-03-07	9:16:00	37.31	9.39	165.12	210.96	4.73	283.65	23.74	24.94	19856	10326	29.31	61854	1417	1130	856	469	200	195	-22.7	-60.0	-122.0	366.2
2024-03-07	9:17:00	36.53	8.61	164.27	210.15	4.72	283.43	23.74	24.70	20419	10444	29.05	61474	1414	1130	860	469	200	194	-20.6	-55.3	-123.4	383.8
2024-03-07	9:18:00	36.74	8.96	165.12	210.92	4.73	283.65	23.74	24.86	19463	10219	28.72	60993	1422	1130	864	469	200	194	-11.7	-45.9	-105.7	395.2
2024-03-07	9:19:00	36.83	8.86	164.88	209.84	4.71	282.83	23.74	24.62	20000	10337	29.41	62733	1420	1130	864	469	200	194	-23.2	-59.1	-123.6	375.6
2024-03-07	9:20:00	36.59	9.10	164.94	210.11	4.70	281.78	23.74	24.74	19725	10421	28.77	60864	1423	1130	867	469	200	194	-18.7	-55.5	-116.4	386.2
2024-03-07	9:21:00	36.65	8.99	165.93	211.23	4.75	284.85	23.74	24.74	19944	10556	29.51	62339	1413	1130	868	469	200	195	-21.5	-59.5	-119.3	382.3
2024-03-07	9:22:00	36.69	8.94	164.79	209.84	4.70	282.00	23.74	25.32	19700	10348	30.76	65160	1418	1130	869	469	200	195	-39.9	-83.5	-144.9	343.6
2024-03-07	9:23:00	37.05	9.22	165.78	212.00	4.73	283.95	23.74	25.52	19775	10427	29.57	62475	1412	1130	873	469	201	195	-21.6	-59.5	-123.5	366.4
2024-03-07	9:24:00	36.51	9.11	165.03	211.19	4.69	281.48	23.74	24.60	20388	10534	29.51	62598	1412	1130	878	469	201	195	-22.1	-57.1	-124.7	381.9
2024-03-07	9:25:00	37.26	9.21	165.88	212.54	4.74	284.40	23.74	24.76	19525	10332	29.17	61739	1416	1130	885	469	201	195	-10.6	-45.5	-105.5	394.1
2024-03-07	9:26:00	36.60	9.13	165.41	211.91	4.71	282.68	23.74	25.50	19988	10433	29.14	61964	1418	1130	885	469	200	195	-25.5	-64.3	-126.3	377.9
2024-03-07	9:27:00	36.63	9.10	163.94	210.47	4.78	286.50	23.74	25.60	19775	10320	29.16	61694	1418	1131	888	469	200	195	-17.2	-54.6	-115.3	386.2
2024-03-07	9:28:00	36.63	9.09	165.26	211.46	4.73	283.58	23.74	24.60	19900	10326	29.63	62363	1413	1131	889	469	200	195	-22.7	-61.6	-122.3	386.6
2024-03-07	9:29:00	36.03	8.92	164.88	212.00	4.73	283.88	23.74	25.70	19756	10315	31.43	66170	1415	1131	891	469	200	195	-38.5	-82.0	-142.3	341.6
2024-03-07	9:30:00	36.09	8.68	165.12	209.93	4.70	281.85	23.74	24.86	19975	10315	29.78	62826	1407	1130	889	469	200	195	-22.8	-60.0	-123.1	366.3
2024-03-07	9:31:00	36.09	8.85	164.17	210.56	4.72	283.13	23.74	24.48	20588	10416	29.11	61769	1408	1129	888	469	200	194	-22.0	-60.0	-125.1	385.1
2024-03-07	9:32:00	36.21	9.24	165.41	211.01	4.74	284.33	23.74	25.56	19588	10315	29.25	62266	1414	1128	886	469	200	194	-13.3	-47.6	-105.9	393.9
2024-03-07	9:33:00	36.21	9.04	164.98	210.29	4.75	285.08	23.74	25.14	20025	10545	30.13	64107	1409	1128	884	469	199	194	-24.7	-64.0	-126.7	376.5
2024-03-07	9:34:00	36.15	8.87	163.98	210.60	4.72	282.90	23.74	25.36	19769	10315	28.75	60936	1410	1128	886	469	200	194	-19.2	-53.6	-117.1	388.1
2024-03-07	9:35:00	35.88	9.28	165.60	210.83	4.73	283.80	23.74	25.52	19863	10427	29.56	62395	1404	1128	887	469	200	195	-22.4	-59.4	-122.6	384.4
2024-03-07	9:36:00	37.11	8.99	164.84	212.09	4.76	285.45	23.74	25.38	19781	10427	32.02	67607	1410	1127	890	469	200	195	-36.2	-78.1	-139.6	342.4
2024-03-07	9:37:00	36.41	9.35	165.97	211.64	4.86	291.45	21.41	25.16	19856	10449	29.32	62158	1406	1127	893	469	200	194	-22.8	-60.0	-123.6	367.9
2024-03-07	9:38:00	35.81	9.07	163.80	209.79	4.74	284.33	23.81	24.94	20369	10449	29.11	61930	1406	1126	894	469	200	194	-24.1	-61.1	-127.4	385.3
2024-03-07	9:39:00	35.78	9.32	164.51	211.10	4.67	279.90	23.81	25.62	19438	10343	28.90	61646	1414	1126	896	469	200	194	-11.5	-47.1	-105.0	392.8
2024-03-07	9:40:00	36.39	8.49	165.35	210.65	4.70	282.23	23.81	24.48	20175	10337	30.10	64068	1410	1126	895	469	199	194	-26.9	-65.6	-126.9	379.3
2024-03-07	9:41:00	36.11	8.90	164.70	210.38	4.67	280.20	23.81	25.28	19863	10320	28.93	61344	1413	1125	887	469	199	194	-19.3	-55.9	-117.8	387.7

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	T-260-REFDRYHo	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-07	9:42:00	35.90	9.22	165.65	211.68	4.66	279.83	23.81	25.14	19944	10427	29.96	63511	1407	1125	889	469	199	194	-22.9	-60.4	-121.6	385.3
2024-03-07	9:43:00	36.45	8.76	164.64	210.83	4.69	281.10	23.81	25.28	19738	10427	30.97	65790	1411	1126	896	469	199	194	-36.5	-80.1	-141.6	342.4
2024-03-07	9:44:00	36.50	9.03	166.12	212.36	4.66	279.60	23.81	25.18	19788	10438	29.69	63145	1404	1125	894	469	199	194	-22.6	-58.9	-123.5	366.6
2024-03-07	9:45:00	36.99	8.80	165.12	214.74	4.69	281.18	23.81	24.58	20338	10421	29.13	62169	1408	1125	900	469	199	194	-22.0	-58.1	-124.4	382.9
2024-03-07	9:46:00	36.57	9.05	165.22	211.95	4.67	280.28	23.81	25.58	19444	10320	28.58	61049	1415	1126	900	469	199	194	-13.1	-48.8	-106.2	393.5
2024-03-07	9:47:00	36.77	9.04	164.88	211.14	4.62	277.43	23.81	24.92	20006	10427	29.14	62230	1414	1127	901	469	198	194	-23.7	-63.5	-124.0	377.6
2024-03-07	9:48:00	36.59	8.91	164.94	211.95	4.68	280.95	23.81	25.28	19781	10320	28.64	60714	1417	1127	902	469	198	194	-17.2	-53.6	-114.5	386.9
2024-03-07	9:49:00	36.59	9.05	165.74	211.14	4.61	276.75	23.81	25.48	20081	10320	29.07	61317	1410	1128	902	468	198	194	-21.1	-57.5	-121.6	383.3
2024-03-07	9:50:00	36.47	9.00	164.55	211.55	4.67	280.20	23.81	25.58	19831	10320	31.26	66022	1418	1127	902	468	199	194	-39.9	-82.6	-144.3	347.3
2024-03-07	9:51:00	36.08	8.91	165.26	210.92	4.62	277.20	23.81	25.48	19750	10421	29.49	62461	1409	1126	901	468	199	194	-21.9	-58.6	-123.5	367.1
2024-03-07	9:52:00	36.66	9.11	165.65	211.64	4.63	277.50	23.81	24.92	20531	10523	28.96	61601	1411	1126	904	468	199	193	-22.8	-58.5	-125.1	385.3
2024-03-07	9:53:00	36.50	8.95	165.45	212.76	4.67	280.43	23.81	24.54	19325	10298	28.59	60932	1417	1126	904	468	199	193	-11.9	-43.9	-106.5	395.1
2024-03-07	9:54:00	36.62	9.12	165.12	211.41	4.71	282.83	23.81	25.08	20044	10421	29.48	62908	1416	1128	902	468	198	193	-24.2	-61.9	-123.8	378.9
2024-03-07	9:55:00	36.45	8.77	165.50	212.00	4.66	279.83	23.81	25.34	19613	10309	28.67	60662	1414	1128	902	468	198	193	-15.8	-49.6	-114.0	388.1
2024-03-07	9:56:00	36.95	9.17	165.88	213.30	4.61	276.68	23.81	25.14	19844	10410	29.38	61831	1408	1128	867	468	198	193	-20.7	-57.0	-120.5	386.2
2024-03-07	9:57:00	36.68	9.10	165.31	211.50	4.64	278.48	23.81	24.78	19638	10399	30.84	65142	1413	1129	865	468	198	193	-36.9	-81.3	-141.0	341.6
2024-03-07	9:58:00	36.18	8.69	165.22	214.11	4.66	279.30	23.81	25.36	19881	10292	29.88	63351	1409	1129	868	468	198	193	-23.6	-62.0	-122.6	366.3
2024-03-07	9:59:00	36.71	8.83	164.17	212.27	4.62	277.05	23.81	24.82	20388	10399	28.87	61399	1407	1128	867	468	198	193	-22.0	-56.6	-123.8	383.0
2024-03-07	10:00:00	36.38	9.35	164.98	213.35	4.68	280.65	23.81	25.12	19338	10303	27.98	59606	1411	1128	864	468	198	193	-15.3	-50.3	-108.7	396.6
2024-03-07	10:01:00	36.23	9.32	164.55	211.01	4.75	284.78	23.81	25.10	20188	10421	28.95	61615	1408	1129	864	468	198	193	-27.2	-65.0	-127.1	378.4
2024-03-07	10:02:00	36.38	9.01	164.55	211.32	4.69	281.18	23.81	24.64	19581	10315	28.93	61434	1409	1129	862	468	198	193	-17.6	-52.6	-114.0	385.7
2024-03-07	10:03:00	36.71	9.00	165.31	212.58	4.71	282.83	23.81	24.74	19794	10449	29.09	61364	1402	1128	865	468	198	193	-23.0	-60.1	-122.4	384.8
2024-03-07	10:04:00	35.97	9.23	164.84	212.54	4.62	276.90	23.81	24.60	19738	10348	30.30	64198	1405	1128	873	468	198	193	-38.2	-80.5	-142.2	343.4
2024-03-07	10:05:00	36.41	9.02	165.26	212.18	4.62	277.20	23.81	25.68	19838	10472	28.83	61363	1402	1127	871	468	198	193	-23.2	-61.5	-122.3	366.8
2024-03-07	10:06:00	35.97	9.13	164.94	211.59	4.66	279.38	23.81	24.86	20550	10551	28.87	61641	1401	1126	869	468	198	193	-25.7	-62.0	-129.6	387.0
2024-03-07	10:07:00	36.17	9.04	165.88	212.76	4.68	281.03	23.81	24.56	19356	10230	28.68	61356	1406	1126	873	468	198	193	-12.6	-43.9	-108.3	394.6
2024-03-07	10:08:00	36.30	8.97	165.45	212.00	4.64	278.40	23.81	25.28	19975	10551	29.35	62846	1404	1126	870	468	197	193	-25.0	-62.9	-125.9	379.5
2024-03-07	10:09:00	35.94	9.05	164.04	211.46	4.69	281.55	23.81	24.58	19725	10337	28.42	60550	1407	1126	870	468	197	193	-22.0	-58.9	-117.8	389.6
2024-03-07	10:10:00	36.12	9.22	166.21	213.26	4.80	288.08	23.81	24.86	19750	10438	28.97	61532	1402	1126	871	468	197	193	-24.8	-63.4	-122.6	386.5
2024-03-07	10:11:00	35.73	8.92	164.55	211.10	4.75	285.23	23.81	24.64	19850	10438	30.91	65751	1402	1124	872	468	197	193	-40.4	-84.3	-143.9	342.8
2024-03-07	10:12:00	36.11	9.04	165.26	211.64	4.82	289.13	23.81	25.12	19881	10438	29.07	61940	1394	1123	877	468	197	192	-24.8	-63.5	-125.4	368.1
2024-03-07	10:13:00	36.78	8.82	164.64	211.10	4.86	291.45	23.81	25.16	20300	10545	29.50	63076	1395	1122	880	468	198	192	-24.3	-59.4	-129.2	386.8
2024-03-07	10:14:00	37.02	8.96	165.31	211.73	4.91	294.38	23.81	24.76	19313	10348	28.19	60356	1406	1123	887	468	198	192	-10.2	-44.5	-104.1	393.1
2024-03-07	10:15:00	36.62	8.77	165.17	211.37	4.93	296.03	23.81	24.92	19869	10343	29.31	62755	1405	1124	889	468	197	192	-23.4	-60.3	-125.1	377.6
2024-03-07	10:16:00	36.26	8.82	165.31	212.45	4.86	291.68	23.81	25.36	19619	10225	28.58	60792	1405	1125	896	468	197	192	-21.4	-59.9	-118.2	389.8
2024-03-07	10:17:00	36.77	9.00	165.65	211.82	4.77	286.28	23.81	25.18	19844	10309	28.94	61387	1403	1125	901	468	198	193	-22.2	-58.5	-121.2	383.2
2024-03-07	10:18:00	36.20	9.05	164.32	210.96	4.80	288.08	23.81	24.80	19531	10298	30.68	64970	1408	1126	900	468	198	193	-39.2	-82.4	-143.9	344.7
2024-03-07	10:19:00	36.42	9.28	164.94	212.09	4.82	289.35	23.81	24.84	19881	10399	28.97	61637	1405	1126	898	468	198	193	-22.2	-59.8	-122.8	367.3
2024-03-07	10:20:00	36.02	9.09	164.64	211.32	4.82	289.05	23.81	24.60	20581	10511	29.06	62093	1404	1127	894	468	198	192	-22.3	-57.5	-124.8	385.9
2024-03-07	10:21:00	35.82	8.85	165.26	213.84	4.81	288.30	23.81	25.54	19150	10410	28.37	60595	1414	1127	898	468	198	192	-14.0	-47.0	-106.1	394.8
2024-03-07	10:22:00	36.23	8.98	165.50	214.52	5.02	301.28	23.81	24.60	20050	10511	29.18	62139	1412	1128	899	468	198	192	-24.2	-61.8	-125.6	378.9
2024-03-07	10:23:00	36.15	9.15	164.55	212.40	4.81	288.83	23.81	25.66	19638	10399	28.74	61036	1412	1128	898	468	198	193	-16.9	-53.5	-114.1	387.0
2024-03-07	10:24:00	36.42	8.82	165.12	212.04	4.89	293.55	23.81	24.90	19831	10393	29.14	61817	1409	1129	892	468	198	193	-23.0	-60.5	-122.7	384.9
2024-03-07	10:25:00	36.15	9.39	165.22	211.28	4.87	292.43	23.81	24.48	19550	10315	31.08	65758	1412	1129	892	468	198	193	-38.8	-83.1	-142.5	343.0
2024-03-07	10:26:00	36.27	9.16	165.97	211.64	4.86	291.45	23.81	25.10	19738	10303	28.83	61145	1409	1129	892	468	199	193	-22.6	-60.5	-123.0	367.4
2024-03-07	10:27:00	36.42	8.99	164.94	211.68	4.88	292.58	23.81	25.54	20319	10405	28.56	61162	1409	1129	895	468	199	193	-20.5	-57.3	-124.7	384.7
2024-03-07	10:28:00	36.62	9.06	165.26	211.46	4.91	294.83	23.81	25.52	19206	10287	28.78	61300	1417	1129	898	468	199	193	-9.4	-42.8	-104.9	395.3
2024-03-07	10:29:00	36.20	9.26	164.88	212.22	4.85	290.78	23.81	25.14	19863	10405	29.01	61699	1414	1130	902	468	199	193	-22.5	-59.4	-123.4	376.6
2024-03-07	10:30:00	36.17	9.01	164.75	212.67	4.81	288.75	23.81	24.98	19513	10292	29.15	61742	1416	1129	899	468	199	193	-19.4	-55.8	-114.9	388.7
2024-03-07	10:31:00	36.29	9.40	165.03	212.90	4.83	289.73	23.81	25.62	19719	10506	28.91	60995	1412	1129	899	468	199	193	-23.0	-61.1	-121.1	385.1
2024-03-07	10:32:00	36.20	9.34	164.64	212.94	4.90	293.70	23.81	24.70	19538	10382	30.83	65115	1415	1129	898	468	199	193	-39.6	-82.4	-143.4	343.4
2024-03-07	10:33:00	36.56	8.93	165.26	212.54	4.97	298.20	23.81	24.66	19756	10405	29.37	62263	1408	1128	900	468	199	193	-21.2	-59.3	-121.4	365.9
2024-03-07	10:34:00	36.09	8.82	165.03	213.08	4.81	288.83	23.81	24.42	20206	10545	28.49	60649	1407	1128	903	468	199	193	-21.9	-58.4	-124.6	383.7
2024-03-07	10:35:00	36.56	9.07	165.07	212.31	4.96	297.75	23.81	25.48	19456	10320	28.47	60683	1415	1127	903	468	199	193	-12.8	-47.3	-105.2	394.4
2024-03-07	10:36:00	36.59	8.85	165.50	212.58	4.89	293.25	23.81	25.26	19819	10348	28.95	61977	1411	1128	900	468	198	193	-23.4	-60.9	-123.5	376.6
2024-03-07	10:37:00	36.03	9.13	165.12	212.00	4.92	294.98	23.81	24.74	19550	10225	28.67	60778	1413	1128	902	468	198	193	-17.4	-53.5	-115.3	387.8
2024-03-07	10:38:00	35.69	8.99	164.70	211.14	4.83	289.80	23.81	25.56	19781	10303	29.31	61953	1410	1127	903	468	198	193	-25.0	-64.5	-123.8	385.8
2024-03-07	10:39:00	35.82	8.93	165.03	212.22	4.87	292.20	23.81	25.06	19550	10309	30.83	65223	1412	1126	904	468	198	193	-39.1	-82.3	-142.3	342.4
2024-03-07	10:40:00	36.54	8.89	165.12	212.81	4.88	292.73	23.81	24.94	19788	10309	29.44	62455	1407	1126	905	468	198	193	-23.4	-60.6	-122.0	366.8
2024-03-07	10:41:00	36.06	8.96	164.60	212.85	5.02	301.13	23.81	25.74	20163	10517	28.80	61066	1408	1126	909	468	198	193	-20.0	-57.0	-124.0	382.9
2024-03-07	10:42:00	35.94	9.00	164.98	213.26	4.89	293.48	23.81	25.54	19363	10287	28.38	60352	1413	1125	917	468	198	193	-14.1	-51.0	-106.4	394.7
2024-03-07	10:43:00	35.99	9.31	165.17	213.12	4.87	292.28	23.81	25.16	20056	10292	28.61	60954	1409	1125	923	468	197	193	-25.8	-64.9	-126.9	379.1
2024-03-07	10:44:00	35.67	8.83	164.36	212.49	5.01	300.53	23.81	25.36	19575	10393	28.60	60652	1411	1125	924	468	197	193	-18.7	-54.8	-116.6	387.8
2024-03-07	10:45:00	36.12	9.00	164.98	212.63	4.82	289.13	23.70	25.38	19744	10354	29.01	61307	1404	1125	928	468	197	193	-24.0	-61.9	-123.4	385.4
2024-03-07	10:46:00	36.06	9.32	165.03	212.99	4.88	292.80	23.70	25.32	19475	10354	30.38	64568	1420	1125	928	468	197	193	-38.8	-83.0	-142.1	344.9
2024-03-07	10:47:00	36.08	9.01	165.50	213.48	4.83	288.45	23.70	25.54	19800	10354	28.95	61473	1417	1124	930	468	197	193	-24.7	-61.1	-123.4	367.1

		Waste Flows							Flows	Air Flows				Temperatures							Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	T-260-REFDRYHo	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-07	10:48:00	35.64	8.68	164.45	213.62	4.91	294.30	23.70	25.08	20344	10461	28.32	60431	1415	1124	935	468	197	192	-28.3	-62.5	-131.1	386.1
2024-03-07	10:49:00	36.26	8.90	165.12	213.35	4.89	293.48	23.70	24.62	19275	10360	27.97	59746	1421	1124	942	468	197	192	-13.5	-48.6	-107.3	394.4
2024-03-07	10:50:00	35.79	8.85	165.17	213.48	5.00	299.78	23.70	25.24	20031	10472	28.82	61509	1418	1125	944	468	197	192	-25.0	-62.8	-126.3	378.0
2024-03-07	10:51:00	35.87	8.96	164.27	212.36	5.01	300.53	23.70	25.28	19469	10371	28.95	61513	1419	1125	946	468	197	192	-18.5	-56.4	-117.2	387.6
2024-03-07	10:52:00	36.23	8.87	165.17	212.76	5.00	300.45	23.70	24.60	19688	10500	28.96	61207	1416	1124	949	468	197	192	-21.7	-59.6	-121.2	384.6
2024-03-07	10:53:00	35.90	8.96	164.41	213.17	4.83	289.73	23.70	25.56	19538	10382	30.52	64755	1420	1124	945	468	197	192	-40.2	-87.1	-142.0	346.9
2024-03-07	10:54:00	36.02	9.10	165.17	212.58	4.99	300.23	23.70	25.64	19825	10371	28.86	61475	1416	1124	941	468	197	192	-25.1	-63.1	-124.4	370.2
2024-03-07	10:55:00	36.00	8.90	165.03	212.18	5.02	301.35	23.70	24.54	20294	10348	29.06	62008	1411	1123	936	468	197	192	-21.4	-56.9	-124.8	384.1
2024-03-07	10:56:00	35.66	9.10	165.88	213.53	4.91	294.75	23.70	25.10	19263	10337	28.40	60732	1418	1121	932	468	197	192	-14.5	-50.5	-107.3	398.0
2024-03-07	10:57:00	35.40	9.05	164.88	212.04	4.94	296.55	23.70	25.32	19956	10461	28.44	60837	1414	1122	942	468	196	192	-26.2	-64.1	-127.9	380.8
2024-03-07	10:58:00	35.97	8.98	164.60	214.79	5.00	300.45	23.70	24.70	19563	10348	28.51	60773	1423	1123	947	468	196	192	-19.0	-57.0	-116.9	389.4
2024-03-07	10:59:00	36.42	8.95	164.51	212.49	4.93	295.73	23.70	24.88	19844	10449	28.45	60402	1417	1123	929	468	196	192	-23.2	-63.0	-122.4	385.7
2024-03-07	11:00:00	35.60	8.80	164.60	214.20	4.88	292.58	23.70	25.42	19538	10449	30.66	65158	1417	1123	920	468	196	192	-39.2	-83.8	-143.1	344.9
2024-03-07	11:01:00	36.54	9.24	165.35	214.34	4.88	293.03	23.70	26.12	19844	10449	28.72	61188	1423	1124	918	468	197	192	-24.7	-62.1	-125.9	368.1
2024-03-07	11:02:00	35.72	8.97	165.31	211.68	4.86	291.30	23.70	26.08	20431	10449	28.78	61849	1415	1124	923	468	197	192	-25.6	-62.1	-129.6	384.4
2024-03-07	11:03:00	35.67	8.85	164.13	213.84	4.79	287.55	23.70	26.18	19488	10337	28.24	60457	1418	1124	919	468	197	192	-16.5	-52.0	-109.6	397.1
2024-03-07	11:04:00	35.63	8.96	165.69	214.20	4.86	292.35	23.70	26.64	20056	10337	28.62	61312	1413	1123	917	468	196	192	-27.4	-66.4	-127.9	380.3
2024-03-07	11:05:00	36.23	8.99	165.03	212.94	4.86	291.83	23.70	25.96	19656	10332	28.67	61074	1416	1123	918	468	196	192	-21.0	-59.5	-117.4	389.2
2024-03-07	11:06:00	35.76	9.15	165.45	213.35	4.93	296.18	23.70	26.66	19925	10421	28.45	60446	1418	1122	923	468	196	192	-22.9	-61.9	-122.7	386.1
2024-03-07	11:07:00	35.69	9.11	164.64	212.22	4.81	288.75	23.70	26.28	19694	10309	30.33	64518	1416	1122	922	468	196	192	-39.9	-83.3	-149.0	345.3
2024-03-07	11:08:00	35.73	8.79	165.78	212.90	4.91	294.45	23.70	26.68	19919	10433	28.64	61096	1416	1122	917	468	196	192	-25.7	-63.0	-126.8	369.1
2024-03-07	11:09:00	35.88	8.92	164.84	211.73	4.80	291.00	23.70	25.70	20456	10539	28.48	60893	1411	1122	900	468	196	191	-27.2	-59.1	-127.7	388.8
2024-03-07	11:10:00	35.49	9.18	165.31	214.61	4.80	287.78	23.70	25.68	19194	10309	28.47	60862	1420	1122	893	468	196	191	-15.0	-49.9	-110.2	398.3
2024-03-07	11:11:00	36.48	9.14	165.54	212.67	4.81	288.68	23.70	26.32	20031	10511	29.65	63428	1417	1123	893	468	196	191	-25.4	-64.4	-127.0	379.8
2024-03-07	11:12:00	35.85	9.23	165.17	212.58	4.81	288.75	23.70	25.88	19631	10376	28.38	60459	1421	1123	901	468	196	191	-19.9	-56.5	-117.7	388.9
2024-03-07	11:13:00	36.20	9.36	165.50	212.04	4.82	290.03	23.70	26.10	19663	10376	28.89	61567	1416	1124	903	468	196	191	-23.9	-60.6	-123.9	387.4
2024-03-07	11:14:00	35.97	9.07	164.79	212.58	4.76	285.83	23.70	26.36	19531	10270	30.81	65545	1419	1124	906	468	196	191	-39.0	-81.9	-141.7	345.9
2024-03-07	11:15:00	36.56	8.99	165.31	212.99	4.79	286.20	23.70	25.90	19794	10264	28.93	61674	1421	1124	915	468	197	191	-22.8	-59.5	-124.4	369.9
2024-03-0	11:16:00	36.62	9.55	164.88	214.88	4.77	286.43	23.70	26.38	20313	10494	29.13	62309	1416	1125	918	468	197	191	-21.9	-57.9	-127.8	385.0
2024-03-07	11:17:00	36.23	9.44	165.03	215.73	4.71	282.75	23.70	25.74	19225	10270	28.12	60150	1421	1126	917	468	197	191	-12.7	-47.4	-107.3	396.4
2024-03-07	11:18:00	35.88	9.06	165.07	211.91	4.83	289.58	23.70	25.94	20038	10382	28.53	61003	1412	1127	915	468	196	191	-24.5	-62.4	-128.0	380.4
2024-03-07	11:19:00	36.09	9.12	164.17	212.54	4.80	288.08	23.70	26.68	19500	10382	28.11	60032	1421	1127	915	468	197	191	-19.6	-55.6	-118.2	389.8
2024-03-0	11:20:00	35.63	9.20	165.41	213.35	4.77	286.43	23.70	25.72	19794	10466	28.42	60132	1412	1126	915	468	197	192	-21.2	-59.1	-122.3	385.0
2024-03-07	11:21:00	36.27	9.38	164.98	212.76	4.91	294.75	23.70	26.40	19794	10365	30.55	64738	1416	1125	912	468	197	192	-41.3	-85.8	-144.8	346.0
2024-03-07	11:22:00	35.91	9.48	166.07	213.39	5.02	301.35	23.70	26.56	19738	10405	28.95	61506	1418	1125	911	468	197	192	-23.4	-61.4	-125.2	368.3
2024-03-07	11:23:00	35.28	9.38	165.41	213.30	5.00	300.15	23.70	26.70	20425	10506	28.37	60541	1412	1125	911	468	197	192	-27.7	-63.8	-131.4	390.8
2024-03-07	11:24:00	36.00	9.21	165.31	214.02	4.82	289.73	23.70	25.70	19375	10292	28.19	60357	1426	1125	912	468	197	192	-13.7	-48.5	-107.5	397.1
2024-03-07	11:25:00	36.24	9.30	165.17	214.52	4.75	285.15	23.70	25.84	19875	10410	28.96	61926	1416	1125	917	468	196	192	-25.7	-65.1	-126.5	377.7
2024-03-07	11:26:00	35.67	9.43	164.27	214.07	4.87	292.80	23.70	43.34	19438	10410	28.65	61076	1420	1126	917	468	196	192	-19.3	-56.4	-116.2	389.4
2024-03-07	11:27:00	35.63	9.11	165.26	213.35	5.11	306.75	23.70	65.16	19625	10421	29.08	61685	1418	1126	917	468	196	192	-23.9	-63.5	-123.8	389.7
2024-03-07	11:28:00	35.82	9.07	165.07	214.25	4.88	285.75	23.70	65.16	19588	10421	30.43	64571	1417	1125	917	469	196	192	-40.7	-87.0	-148.7	344.7
2024-03-07	11:29:00	36.12	9.48	164.64	212.81	4.88	292.88	23.70	80.00	19725	10427	28.73	60812	1415	1125	907	468	196	191	-25.1	-63.4	-125.8	367.9
2024-03-07	11:30:00	36.23	9.07	164.13	213.35	4.79	287.63	23.70	80.00	20194	10438	28.29	60432	1413	1125	908	469	196	191	-24.8	-61.8	-128.7	384.4
2024-03-07	11:31:00	36.77	9.17	164.41	213.39	5.52	331.05	23.70	79.94	19188	10315	28.18	60389	1419	1124	908	468	196	191	-10.1	-42.8	-104.8	392.9
2024-03-07	11:32:00	36.62	9.03	164.27	213.12	4.80	287.93	23.70	79.92	20150	10421	28.75	61591	1420	1125	905	468	195	191	-23.8	-61.9	-128.4	380.7
2024-03-07	11:33:00	35.22	9.35	164.75	213.17	4.73	283.58	23.70	80.00	19525	10320	28.13	59983	1423	1126	908	469	196	191	-18.7	-54.4	-116.5	387.4
2024-03-07	11:34:00	36.47	9.29	167.25	215.24	4.63	277.65	23.70	80.00	19688	10320	28.91	61346	1419	1126	908	469	196	191	-22.8	-60.1	-122.1	385.9
2024-03-07	11:35:00	35.87	9.50	165.65	214.92	4.64	278.25	23.70	28.42	19669	10219	30.43	64563	1423	1125	916	469	196	191	-37.4	-82.8	-140.8	345.4
2024-03-07	11:36:00	35.46	9.43	165.03	213.66	4.62	276.90	23.70	28.62	19738	10332	29.21	62071	1418	1125	912	469	196	191	-26.2	-65.1	-124.4	370.5
2024-03-07	11:37:00	36.23	9.24	165.26	213.12	4.64	278.40	23.70	27.80	20300	10438	28.51	60858	1417	1125	923	469	196	191	-23.5	-60.6	-128.9	385.3
2024-03-07	11:38:00	36.36	9.36	165.54	212.90	4.65	279.08	23.70	28.32	19094	10292	28.29	60096	1420	1124	914	469	196	191	-12.1	-48.4	-105.7	396.1
2024-03-07	11:39:00	35.90	9.08	164.51	212.45	4.70	281.18	23.70	71.38	19900	10393	28.84	61470	1418	1124	914	469	195	191	-24.2	-62.1	-126.4	379.4
2024-03-07	11:40:00	35.82	9.26	164.94	212.81	4.63	277.95	23.70	71.60	19419	10393	28.62	60437	1413	1124	923	469	195	191	-20.8	-56.9	-118.1	388.6
2024-03-07	11:41:00	36.24	9.36	165.84	214.34	4.67	278.85	23.70	71.74	19781	10393	28.54	60513	1415	1123	918	469	195	191	-23.5	-61.9	-121.5	385.3
2024-03-07	11:42:00	35.57	9.41	165.74	214.52	4.65	278.70	23.70	71.76	19600	10292	30.41	64543	1418	1123	918	469	195	191	-40.2	-85.6	-145.4	346.6
2024-03-07	11:43:00	36.18	9.20	165.97	214.65	4.64	277.28	23.70	71.06	19688	10393	28.99	61760	1418	1123	928	469	195	191	-23.5	-62.5	-123.4	367.9
2024-03-07	11:44:00	35.13	8.99	164.41	214.02	4.65	279.23	23.70	71.44	20231	10618	28.84	61666	1414	1123	918	469	195	191	-24.8	-61.6	-128.7	387.4
2024-03-07	11:45:00	35.42	9.28	164.55	213.17	4.61	276.53	23.70	29.92	19094	10405	28.15	60208	1416	1122	917	469	195	191	-15.5	-49.6	-106.9	396.3
2024-03-07	11:46:00	35.34	9.30	164.94	213.17	4.64	278.33	23.70	28.34	19850	10438	29.24	62314	1414	1122	933	469	194	191	-26.5	-66.1	-128.3	380.5
2024-03-07	11:47:00	35.46	8.94	163.98	213.12	4.61	276.45	23.70	28.58	19494	10214	28.40	60491	1416	1122	928	469	195	191	-21.7	-59.5	-119.4	390.1
2024-03-07	11:48:00	35.09	9.50	164.98	213.17	4.67	280.43	23.70	28.76	19750	10433	29.06	61763	1412	1122	929	469	195	191	-23.5	-61.8	-123.7	386.1
2024-03-07	11:49:00	35.70	9.21	164.45	213.62	4.58	274.95	23.70	28.72	19394	10326	30.96	65927	1413	1122	932	469	195	191	-40.7	-86.1	-144.0	345.8
2024-03-07	11:50:00	35.79	9.31	165.45	213.21	4.63	277.73	23.70	28.80	19606	10427	28.87	61637	1411	1122	944	469	195	191	-26.2	-65.4	-128.3	370.4
2024-03-07	11:51:00	36.17	9.06	165.22	214.11	4.61	276.60	23.70	28.18	20431	10517	28.74	61322	1412	1122	941	469	195	190	-24.3	-61.1	-128.3	385.1
2024-03-07	11:52:00	36.20	9.21	165.50	215.46	4.65	279.00	23.78	28.44	19144	10287	28.38	60908	1418	1121	935	469	195	190	-13.8	-49.9	-107.5	395.8
2024-03-07	11:53:00	35.79	9.37	165.65	214.52	4.62	276.90	23.78	27.74	19944	10399	29.13	62153	1416	1122	929	469	194	190	-25.8	-63.8	-128.2	380.5

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	T-260-REFDRYHo	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-07	11:54:00	36.12	9.08	164.08	214.29	4.64	277.50	23.78	28.48	19463	10388	28.92	61622	1418	1123	933	469	194	190	-19.3	-55.3	-117.7	388.7
2024-03-07	11:55:00	35.64	9.42	165.07	212.90	4.64	278.40	23.78	28.98	19713	10489	28.81	60964	1414	1124	939	469	195	190	-24.6	-63.3	-121.9	385.5
2024-03-07	11:56:00	35.67	9.18	165.41	213.39	4.63	277.20	23.78	28.10	19544	10275	30.34	64504	1414	1124	934	469	195	190	-39.3	-84.0	-147.5	345.1
2024-03-07	11:57:00	35.99	9.35	165.07	213.98	4.65	278.78	23.78	27.94	19794	10292	29.11	61922	1412	1123	926	469	195	190	-21.9	-57.9	-123.7	367.7
2024-03-07	11:58:00	35.99	9.20	164.60	215.01	4.61	276.53	23.78	27.96	20338	10382	28.39	60951	1414	1122	924	469	195	190	-25.3	-62.4	-125.9	386.2
2024-03-07	11:59:00	35.57	9.44	165.31	213.62	4.64	278.25	23.78	28.00	19188	10281	28.29	60562	1417	1122	924	469	195	190	-16.5	-50.6	-108.3	396.6
2024-03-07	12:00:00	35.43	9.23	165.93	213.08	4.62	277.43	23.78	28.30	19950	10489	29.23	62592	1414	1122	922	469	194	190	-27.0	-66.9	-128.0	379.8
2024-03-07	12:01:00	35.75	9.19	165.17	213.75	4.61	276.83	23.78	28.38	19438	10365	28.06	59736	1414	1122	921	469	194	190	-21.2	-58.8	-117.5	388.4
2024-03-07	12:02:00	36.00	9.24	164.98	214.07	4.64	278.55	23.78	28.46	19663	10433	28.77	61193	1412	1122	906	469	194	190	-23.3	-62.6	-122.8	385.7
2024-03-07	12:03:00	35.31	8.99	164.36	213.89	4.62	277.35	23.78	28.54	19613	10455	30.68	65280	1414	1121	914	469	194	190	-39.7	-84.4	-145.8	345.6
2024-03-07	12:04:00	35.36	9.06	165.12	212.81	4.63	278.03	23.78	28.06	19738	10472	28.81	61439	1409	1120	908	469	194	190	-24.3	-62.1	-126.5	367.0
2024-03-07	12:05:00	35.88	9.11	165.45	212.67	4.61	276.75	23.78	28.04	20175	10455	29.00	62156	1405	1119	900	469	194	190	-24.2	-60.9	-129.1	384.8
2024-03-07	12:06:00	35.88	9.33	165.78	213.17	4.63	277.73	23.78	28.64	19338	10253	27.70	59407	1416	1119	908	469	194	190	-14.5	-49.8	-107.8	395.4
2024-03-07	12:07:00	35.66	9.32	164.51	213.98	4.64	278.33	23.78	28.44	20044	10360	29.03	62276	1412	1120	913	469	194	190	-28.3	-67.6	-129.8	381.0
2024-03-07	12:08:00	36.62	9.47	164.60	214.20	4.68	280.58	23.78	28.74	19738	10360	29.57	63205	1420	1120	907	469	194	190	-21.6	-58.6	-119.2	390.9
2024-03-07	12:09:00	35.58	9.29	164.98	213.62	4.65	278.85	23.78	28.18	19825	10466	28.74	61148	1415	1122	915	469	194	190	-26.1	-65.5	-126.8	387.6
2024-03-07	12:10:00	36.32	9.30	165.03	213.17	4.64	278.48	23.78	28.06	19475	10365	31.19	66364	1415	1123	917	469	194	190	-36.7	-80.6	-141.3	343.4
2024-03-07	12:11:00	36.63	9.09	165.74	214.07	4.69	281.18	23.78	28.66	19800	10466	29.02	61772	1419	1123	909	469	195	190	-24.6	-64.5	-126.4	369.8
2024-03-07	12:12:00	35.82	9.00	164.36	212.22	4.65	279.15	23.78	28.70	20331	10573	28.40	60854	1411	1123	911	469	195	190	-21.0	-56.5	-126.7	383.1
2024-03-07	12:13:00	36.32	9.04	165.35	213.39	4.63	277.80	23.78	28.86	19219	10230	28.30	60380	1421	1122	901	469	195	190	-12.8	-49.9	-108.3	396.1
2024-03-07	12:14:00	36.05	9.03	165.26	213.21	4.63	277.58	23.78	28.56	20000	10332	28.99	62135	1415	1122	909	469	194	190	-25.4	-65.5	-126.8	379.6
2024-03-07	12:15:00	35.70	9.24	164.64	214.07	4.66	279.68	23.78	28.50	19575	10320	28.44	60964	1421	1122	911	469	195	190	-20.6	-58.4	-116.9	388.1
2024-03-07	12:16:00	35.93	9.17	165.60	213.98	4.63	277.80	23.78	27.88	19744	10444	28.66	61385	1417	1123	910	469	195	190	-23.2	-61.4	-125.1	385.4
2024-03-07	12:17:00	35.16	9.22	164.55	212.49	4.61	276.30	23.78	28.08	19588	10332	30.56	65058	1416	1123	903	469	195	190	-41.1	-87.8	-146.5	345.4
2024-03-07	12:18:00	36.75	9.32	165.26	212.99	4.65	278.93	23.78	28.58	19606	10472	28.74	61304	1416	1123	906	469	195	190	-24.0	-62.5	-127.5	368.3
2024-03-07	12:19:00	35.91	9.34	164.45	214.88	4.65	278.78	23.78	27.94	20513	10567	28.67	61465	1412	1123	911	469	195	190	-22.7	-59.4	-129.6	383.5
2024-03-07	12:20:00	35.97	9.35	164.98	214.16	4.66	279.60	23.78	28.46	19425	10354	28.20	60410	1418	1122	914	469	195	190	-12.1	-47.5	-108.9	393.9
2024-03-07	12:21:00	35.73	9.35	164.60	212.94	4.65	278.85	23.78	71.24	20119	10360	29.30	62784	1417	1122	905	469	194	190	-25.4	-63.8	-126.8	378.2
2024-03-07	12:22:00	35.37	9.24	164.64	214.20	4.65	278.93	23.78	76.46	19613	10360	28.45	60464	1416	1122	897	469	194	190	-17.8	-55.5	-116.4	386.1
2024-03-07	12:23:00	36.06	9.06	165.22	215.42	4.66	279.60	23.78	76.20	19769	10247	29.00	61687	1416	1122	893	469	194	190	-20.7	-59.5	-122.9	383.6
2024-03-07	12:24:00	35.67	9.14	164.94	212.72	4.69	281.18	23.78	76.66	19844	10360	30.30	64580	1414	1122	892	469	194	190	-40.0	-86.1	-147.5	342.8
2024-03-07	12:25:00	36.03	9.51	165.74	213.98	4.67	279.90	23.78	76.48	19838	10466	28.80	61593	1418	1122	893	469	195	190	-23.9	-62.1	-126.8	368.7
2024-03-07	12:26:00	35.00	9.23	163.89	214.25	4.68	280.73	23.78	76.48	20413	10466	28.18	60442	1409	1122	898	469	195	190	-25.1	-61.6	-127.6	385.5
2024-03-07	12:27:00	36.45	9.18	164.64	212.81	4.64	278.18	23.78	79.12	19300	10365	28.63	61353	1418	1121	881	469	195	190	-13.7	-48.8	-109.1	396.0
2024-03-07	12:28:00	36.63	9.10	164.64	213.17	4.54	272.55	23.78	79.20	20006	10371	28.53	61225	1418	1122	885	469	194	190	-24.1	-61.3	-127.1	379.1
2024-03-07	12:29:00	36.00	9.26	163.65	214.47	4.68	281.03	23.78	79.04	19519	10253	28.03	59916	1419	1122	881	469	194	190	-18.2	-54.5	-116.9	384.8
2024-03-07	12:30:00	36.81	9.28	164.75	213.44	4.66	279.30	23.78	52.60	19738	10270	28.75	61288	1417	1124	880	469	195	190	-20.5	-57.5	-122.1	384.4
2024-03-07	12:31:00	36.17	9.42	164.36	213.44	4.68	281.03	23.78	29.52	19488	10270	30.95	65966	1421	1125	891	469	195	190	-38.9	-81.9	-144.0	344.3
2024-03-07	12:32:00	36.23	9.14	164.27	213.26	4.66	279.60	23.78	29.72	19806	10388	28.67	61167	1417	1125	888	469	195	190	-25.0	-64.1	-126.4	368.4
2024-03-07	12:33:00	36.53	9.22	165.03	213.39	4.68	280.65	23.78	29.54	20313	10517	28.88	61840	1417	1125	893	469	195	190	-23.5	-58.0	-128.4	384.1
2024-03-07	12:34:00	36.90	9.05	164.88	214.97	4.69	281.33	23.78	30.42	19288	10382	27.76	59721	1424	1124	887	469	196	190	-13.5	-48.5	-108.6	396.7
2024-03-07	12:35:00	36.75	9.22	164.70	215.24	4.66	279.53	23.78	30.52	19844	10528	29.08	62457	1423	1124	873	470	195	190	-25.1	-62.1	-127.4	380.9
2024-03-07	12:36:00	35.70	9.28	164.60	213.48	4.66	279.83	23.78	30.40	19594	10309	28.94	61819	1426	1124	865	470	195	190	-18.8	-55.3	-118.8	389.4
2024-03-07	12:37:00	36.29	9.37	164.94	212.76	4.75	284.93	23.78	30.04	19656	10320	28.98	61568	1423	1124	859	470	195	190	-21.7	-58.9	-121.0	384.4
2024-03-07	12:38:00	35.69	9.18	163.61	213.30	4.65	279.23	23.78	30.24	19569	10320	30.84	65745	1425	1124	859	470	196	190	-40.3	-81.6	-144.0	345.9
2024-03-07	12:39:00	36.93	9.60	168.63	214.38	4.66	279.45	23.78	30.16	19694	10449	28.77	61421	1424	1124	859	470	196	190	-22.4	-60.8	-123.9	369.8
2024-03-07	12:40:00	36.26	9.26	164.22	213.57	4.67	280.43	23.78	30.00	20294	10455	28.41	60906	1421	1124	851	470	196	190	-21.8	-56.4	-127.7	383.1
2024-03-07	12:41:00	36.32	9.45	165.69	214.38	4.78	286.65	23.78	30.34	19150	10320	28.61	61320	1424	1123	853	470	196	190	-10.5	-45.1	-106.6	395.8
2024-03-07	12:42:00	35.96	9.25	164.22	213.48	4.69	281.48	23.78	30.08	20038	10478	28.90	62212	1425	1123	854	470	195	190	-22.6	-61.3	-126.2	382.4
2024-03-07	12:43:00	36.44	9.30	164.08	214.52	4.71	283.95	23.78	30.56	19456	10354	28.63	61295	1424	1123	847	470	195	190	-17.7	-53.1	-117.6	391.1
2024-03-07	12:44:00	36.17	9.42	164.88	213.84	4.68	280.65	23.78	30.46	19856	10354	29.38	62348	1423	1123	843	470	195	190	-20.3	-57.0	-120.5	385.3
2024-03-07	12:45:00	36.68	9.29	164.64	215.96	4.67	280.35	23.78	29.96	19600	10253	30.98	65958	1425	1123	848	470	195	190	-37.2	-80.8	-145.2	343.8
2024-03-07	12:46:00	36.48	8.89	164.32	212.81	4.71	282.75	23.78	29.54	19831	10360	29.18	62245	1417	1123	844	470	195	190	-21.9	-59.4	-124.1	368.1
2024-03-07	12:47:00	36.57	9.05	164.64	213.89	4.75	284.55	23.78	30.44	20313	10500	28.55	61397	1414	1124	849	470	196	190	-23.4	-59.9	-125.6	386.4
2024-03-07	12:48:00	36.45	9.52	165.69	213.48	4.75	284.85	23.78	30.00	19238	10292	28.03	59984	1421	1125	850	470	196	190	-12.6	-46.4	-107.5	395.8
2024-03-07	12:49:00	36.02	9.16	165.07	214.25	4.69	280.28	23.78	30.34	20138	10365	29.33	62811	1422	1126	843	470	196	190	-22.8	-61.1	-125.7	379.2
2024-03-07	12:50:00	35.72	9.17	164.36	213.71	4.78	286.80	23.78	29.70	19544	10365	28.36	60231	1419	1127	842	470	196	190	-17.6	-55.3	-116.6	389.7
2024-03-07	12:51:00	35.96	9.37	165.74	213.89	4.71	283.35	23.78	29.74	19688	10360	29.19	61736	1421	1128	842	470	197	191	-18.6	-56.4	-120.3	386.8
2024-03-07	12:52:00	35.76	8.47	165.41	214.38	4.70	282.23	23.78	29.74	19356	10360	30.38	64471	1420	1129	848	470	197	191	-38.0	-81.9	-141.6	343.9
2024-03-07	12:53:00	35.40	9.42	164.60	214.34	4.74	284.10	23.78	29.66	19788	10354	28.84	61174	1415	1129	835	470	197	191	-23.4	-61.4	-124.5	368.0
2024-03-07	12:54:00	36.23	9.14	165.22	213.35	4.67	280.43	23.78	30.58	20213	10478	28.57	60822	1414	1128	830	470	197	191	-21.6	-57.9	-127.8	383.2
2024-03-07	12:55:00	35.97	9.17	164.45	212.76	4.74	284.18	23.78	30.58	19413	10360	28.58	61162	1422	1128	822	470	197	191	-10.2	-44.9	-105.6	395.1
2024-03-07	12:56:00	36.92	9.13	165.60	213.26	4.72	282.98	23.78	29.76	20063	10500	28.76	61275	1418	1129	812	471	197	191	-23.4	-62.0	-127.8	380.1
2024-03-07	12:57:00	36.63	9.25	164.75	213.71	4.74	284.48	23.78	30.38	19363	10393	29.04	61719	1419	1129	790	471	197	191	-15.8	-53.4	-116.7	389.0
2024-03-07	12:58:00	35.58	9.36	165.45	214.52	4.75	284.78	23.78	30.20	19819	10275	29.25	61600	1421	1130	775	471	197	191	-19.9	-58.4	-122.1	385.4
2024-03-07	12:59:00	35.79	9.02	165.22	213.57	4.69	281.33	23.78	29.52	19438	10281	30.98	65972	1421	1130	755	471	197	191	-37.0	-82.3	-141.2	344.8

		Waste Flows							Flows	Air Flows				Temperatures						Pressures			
		Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	Secondary	SecondaryB	Quench	SDA	Stack	Incinerator	SDA Inlet	BH Inlet	BH dP
		LPM	LPM	LPM	LPM	LPM	SCFM	LPM	Lbs/h	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
$Date	$Time	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	SC-PAC-FT	PV-236	PV-209	FT-260-VEL	T-260-REFDRYHO	TE-240	TE-241A	TE-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
2024-03-07	13:00:00	36.93	9.41	165.17	215.64	4.73	284.33	23.78	30.10	19681	10287	28.94	61193	1416	1130	756	471	198	191	-23.3	-61.8	-124.4	368.4
2024-03-07	13:01:00	35.90	9.09	164.17	214.61	4.68	281.03	23.78	30.14	20175	10421	29.02	61733	1411	1130	750	471	198	191	-21.5	-58.0	-127.4	383.8
2024-03-07	13:02:00	35.54	9.01	163.94	215.37	4.76	283.95	23.78	29.98	19244	10292	28.76	61128	1418	1130	731	471	197	191	-11.5	-46.3	-107.2	396.3
2024-03-07	13:03:00	35.91	8.93	164.84	216.14	4.72	283.20	23.78	29.72	19794	10393	29.39	62475	1416	1130	726	471	197	191	-23.6	-61.3	-127.0	377.7
2024-03-07	13:04:00	35.37	9.08	164.98	214.65	4.71	283.13	23.78	30.18	19525	10405	28.94	61301	1417	1131	715	471	197	191	-17.5	-55.8	-116.7	386.8
2024-03-07	13:05:00	35.88	9.27	165.35	213.98	4.72	282.98	23.78	29.80	19681	10416	29.20	61624	1415	1131	697	471	197	191	-19.7	-56.0	-122.5	382.9
2024-03-07	13:06:00	36.24	9.31	164.75	213.75	4.72	283.05	23.78	29.80	19525	10315	30.66	64847	1415	1130	688	471	197	191	-34.3	-78.0	-141.7	343.0
2024-03-07	13:07:00	36.45	9.31	163.85	214.38	4.69	281.33	23.78	29.42	19550	10337	29.43	62409	1418	1130	686	471	197	191	-21.9	-60.9	-123.7	366.4
2024-03-07	13:08:00	36.03	9.43	163.42	214.34	4.69	281.33	23.78	30.46	20438	10337	28.86	61740	1412	1131	691	472	197	191	-22.1	-59.5	-125.7	382.4
2024-03-07	13:09:00	36.20	9.14	164.94	214.29	4.72	283.43	23.78	30.56	19163	10337	28.62	60920	1418	1131	697	472	197	191	-13.3	-49.8	-108.5	396.8
2024-03-07	13:10:00	35.81	9.16	164.17	213.08	4.69	281.40	23.78	30.46	19956	10360	29.06	61867	1416	1131	687	472	197	191	-24.0	-63.3	-125.1	379.3
2024-03-07	13:11:00	34.86	9.09	163.98	214.34	4.68	280.73	23.78	30.18	19513	10264	28.78	60866	1413	1131	682	472	197	191	-18.4	-55.4	-115.7	388.3
2024-03-07	13:12:00	35.04	8.95	165.22	214.83	4.65	278.78	23.78	29.78	19706	10421	29.37	62193	1413	1131	672	472	197	191	-22.9	-60.1	-122.0	386.0
2024-03-07	13:13:00	35.36	9.17	164.27	213.57	4.62	278.03	23.78	30.48	19300	10438	30.65	64959	1411	1130	656	472	197	191	-36.4	-80.1	-146.3	342.4
2024-03-07	13:14:00	35.85	9.47	164.98	213.44	4.65	278.78	23.78	30.42	19769	10332	28.87	61508	1415	1130	646	472	197	191	-21.9	-58.4	-122.8	365.6
2024-03-07	13:15:00	36.05	9.25	164.70	214.61	4.64	277.65	23.78	30.16	20250	10461	29.42	62795	1411	1129	644	472	197	191	-21.0	-56.0	-123.5	383.6
2024-03-07	13:16:00	36.38	9.39	165.35	216.50	4.65	278.78	23.78	30.42	19288	10337	28.82	61789	1420	1130	638	472	197	191	-12.3	-45.5	-104.5	394.1
2024-03-07	13:17:00	35.31	9.24	165.31	214.02	4.62	277.35	23.78	29.50	19825	10478	28.99	61697	1421	1131	631	472	196	191	-24.0	-63.5	-128.5	379.2
2024-03-07	13:18:00	36.00	9.27	164.41	215.64	4.71	282.45	23.78	29.54	19419	10376	28.67	60777	1419	1132	644	472	197	191	-19.0	-55.5	-115.0	388.6
2024-03-07	13:19:00	35.43	9.16	165.31	215.01	4.61	278.40	23.78	29.98	19713	10382	29.33	61845	1417	1132	643	472	197	191	-21.9	-58.0	-121.4	386.4
2024-03-07	13:20:00	36.06	9.31	164.98	213.39	4.63	277.73	23.78	29.52	19644	10382	31.43	66343	1419	1132	644	472	197	191	-36.1	-77.3	-141.5	343.9
2024-03-07	13:21:00	36.11	9.10	165.31	213.75	4.68	280.58	23.78	29.50	19706	10376	29.16	61362	1417	1132	645	473	198	191	-20.2	-58.5	-122.0	366.5
2024-03-07	13:22:00	35.58	8.85	164.41	213.08	4.61	276.53	23.78	29.52	20438	10376	28.45	60190	1413	1132	646	473	198	191	-25.5	-61.8	-128.6	385.1
2024-03-07	13:23:00	36.47	9.47	165.74	214.61	4.58	274.58	23.78	29.70	19306	10163	28.87	61350	1423	1132	643	473	198	192	-10.2	-45.1	-105.3	393.3
2024-03-07	13:24:00	36.26	9.23	164.22	214.38	4.57	274.35	23.78	30.10	19931	10360	29.27	61991	1416	1133	637	473	198	192	-24.4	-62.9	-126.6	378.8
2024-03-07	13:25:00	36.72	9.19	164.84	215.91	4.67	280.43	23.78	30.46	19544	10247	29.09	61511	1422	1133	638	473	198	192	-17.8	-55.9	-116.9	387.3
2024-03-07	13:26:00	36.18	9.45	165.54	214.88	4.54	272.63	23.78	30.34	19731	10455	29.00	61081	1418	1133	634	473	198	192	-24.2	-63.4	-124.1	389.9
2024-03-07	13:27:00	35.99	9.19	164.64	214.92	4.56	273.68	23.78	30.22	19538	10332	30.81	65163	1417	1134	631	473	198	192	-34.7	-78.6	-138.9	341.8
2024-03-07	13:28:00	36.32	9.24	164.98	213.35	4.55	274.13	23.78	30.48	19763	10438	29.57	62367	1419	1134	623	473	198	192	-19.8	-59.5	-122.5	367.2
2024-03-07	13:29:00	35.66	9.10	164.60	215.06	4.54	272.55	23.78	30.26	20175	10421	28.67	60745	1414	1134	628	473	198	192	-25.0	-61.0	-128.4	383.4
2024-03-07	13:30:00	36.90	9.08	164.17	213.39	4.56	274.88	23.78	29.76	19275	10320	28.45	60286	1424	1133	635	473	198	192	-8.6	-42.8	-105.5	392.6
2024-03-07	13:31:00	36.42	9.42	164.98	213.62	4.67	280.28	23.78	29.88	19988	10461	29.47	62502	1417	1133	625	473	198	192	-21.1	-60.1	-124.6	375.8
2024-03-07	13:32:00	35.40	9.03	163.98	214.83	4.56	274.88	23.78	30.46	19588	10253	28.54	60317	1421	1134	623	473	198	192	-17.5	-55.8	-116.4	388.9
2024-03-07	13:33:00	37.83	9.69	164.79	213.80	4.59	275.63	23.78	30.22	19631	10253	28.90	60835	1427	1135	633	473	198	193	-18.2	-56.0	-118.2	382.6
2024-03-07	13:34:00	36.18	9.42	164.51	214.79	4.58	274.50	23.78	29.72	19394	10360	30.85	65006	1426	1136	637	473	199	193	-35.0	-78.6	-139.0	342.0
2024-03-07	13:35:00	36.56	9.47	165.60	216.18	4.59	275.48	23.78	29.62	19538	10343	28.88	60847	1418	1138	639	473	199	193	-19.6	-56.6	-122.1	365.5
2024-03-07	13:36:00	35.37	9.38	164.41	213.57	4.58	274.95	23.78	29.58	20050	10343	28.91	61028	1414	1138	642	473	199	193	-21.9	-57.1	-123.5	383.9
2024-03-07	13:37:00	36.63	9.01	165.12	213.93	4.59	275.48	23.78	29.84	19100	10236	28.21	59566	1422	1137	635	473	199	193	-10.6	-47.6	-106.1	394.1
2024-03-07	13:38:00	36.65	9.12	165.26	215.33	4.64	278.25	23.78	30.50	19894	10466	29.16	61492	1421	1137	623	473	199	193	-22.8	-63.0	-125.4	377.4
2024-03-07	13:39:00	36.65	9.32	165.65	214.43	4.57	274.43	23.78	30.04	19350	10337	28.51	59869	1424	1137	615	473	199	193	-16.4	-51.9	-113.4	387.9
2024-03-07	13:40:00	35.72	9.21	165.31	214.47	4.60	276.08	23.78	29.58	19856	10225	29.08	61110	1415	1137	620	474	199	193	-20.7	-58.9	-121.5	383.5
2024-03-07	13:41:00	34.88	9.24	165.74	213.35	4.58	274.50	23.78	29.50	19431	10225	30.41	63797	1418	1137	613	474	199	193	-37.2	-79.6	-141.3	342.4
2024-03-07	13:42:00	36.18	9.42	166.68	214.65	4.61	276.60	23.78	30.32	19538	10421	29.05	60821	1417	1135	611	474	199	193	-21.1	-58.0	-122.6	366.1
2024-03-07	13:43:00	35.72	9.30	165.50	214.97	4.63	276.98	23.78	30.30	20188	10534	28.46	60020	1416	1135	618	474	199	193	-19.3	-55.4	-120.9	381.9
2024-03-07	13:44:00	35.96	9.56	166.02	214.92	4.63	277.73	23.78	29.76	19113	10320	28.19	59500	1424	1135	619	474	199	193	-10.2	-45.6	-103.3	392.3
2024-03-07	13:45:00	36.03	9.20	164.70	214.52	4.58	273.08	23.78	30.20	19669	10539	29.40	62032	1416	1136	612	474	199	193	-21.9	-59.5	-124.4	377.3
2024-03-07	13:46:00	35.88	9.16	165.03	213.57	4.57	274.35	23.78	29.68	19356	10433	28.81	60527	1414	1136	597	474	199	193	-17.1	-52.9	-115.8	384.6
2024-03-07	13:47:00	35.01	9.33	166.02	213.03	4.56	273.75	23.78	29.98	19775	10332	29.00	60576	1409	1136	580	474	199	193	-19.4	-54.4	-119.8	381.0
2024-03-07	13:48:00	34.95	8.90	164.45	214.07	4.60	275.85	23.78	30.20	19469	10219	31.08	65243	1416	1136	588	474	198	193	-36.0	-79.4	-139.2	340.3

March 07/2024	Waste Flows							Flows	Air Flows				Temperatures						Pressures			
	Rich	Emulsion	Lean	Alkaline	TDU Flow	TDU Flow	Leachate	PAC	Primary	Secondary	Stack Velocity	Stack Flow	Primary	SecondaryA	SecondaryB	Quench	SprayDryer	Stack	Incinerator	SDA Inlet	SD Outlet	Baghouse
Test 3	FT-229	FT-219C	FT-223	PV-207	FT-313B	FT-313	PV-211	Lbs/h	PV-236	PV-209	FT-260-VEL	T-260-REFDRYHO	TE-240	T-241A	T-241B	TE-203	TE-204	TE-258	PT-242A	PT-249	PT-615	PDT-622
Units	LPM	LPM	LPM	LPM	LPM	SCFM	LPM	SC-PAC-FT	m3/h	m3/h	m/s	Rm3/Hr	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	Degrees C	mmH2O	mmH2O	mmH2O	mmH2O
Max	37.83	9.69	168.63	216.50	5.52	331.05	23.81	80.00	20588	10618	32.02	67607	1431	1138	949	474	207	199	-8.6	-42.8	-101.0	398.3
Min	34.86	8.47	163.42	208.49	4.54	272.55	21.41	24.42	19094	10163	27.70	58771	1394	1119	580	467	194	190	-41.3	-87.8	-149.0	339.4
Average	36.16	9.14	165.01	212.79	4.73	283.80	23.75	30.66	19765	10381	29.16	61934	1416	1127	852	469	197	192	-23.0	-60.9	-123.2	377.3
Variance	0.23	0.04	0.34	2.51	0.01	49.25	0.02	166.91	107730	6574	0.63	2515784	36	16	8773	3	6	5	56.0	103.4	110.7	256.7

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-05	9:36:00	17.2	23.7	9.07	47.0	27.5	9.78	0.72	188.3	124.7	24.1	62.0
2024-03-05	9:37:00	16.7	23.7	9.13	47.2	35.0	9.78	0.82	189.6	112.9	27.8	63.2
2024-03-05	9:38:00	20.8	23.7	9.26	47.4	38.4	9.78	0.68	193.3	99.4	31.4	65.6
2024-03-05	9:39:00	37.6	23.7	9.38	47.6	39.3	9.78	0.68	200.7	95.5	25.4	65.6
2024-03-05	9:40:00	52.7	23.7	9.47	47.9	35.6	9.56	1.11	201.8	85.8	17.5	65.6
2024-03-05	9:41:00	60.6	23.7	9.47	48.0	38.6	9.35	0.68	196.2	81.6	19.0	65.6
2024-03-05	9:42:00	62.0	23.7	9.51	48.0	39.2	9.35	0.80	193.2	98.4	24.6	65.6
2024-03-05	9:43:00	63.9	23.7	9.57	48.1	61.9	9.35	0.68	203.9	84.1	25.3	66.9
2024-03-05	9:44:00	81.4	23.7	9.62	48.3	40.6	9.35	1.21	201.6	86.7	22.8	66.9
2024-03-05	9:45:00	100.7	23.7	9.72	48.5	39.4	9.13	0.45	204.6	61.6	21.5	68.7
2024-03-05	9:46:00	93.4	23.7	9.66	48.6	39.5	9.13	0.72	205.2	64.3	25.8	67.5
2024-03-05	9:47:00	86.7	23.7	9.60	48.5	34.0	9.13	1.10	205.2	83.4	29.0	64.4
2024-03-05	9:48:00	75.9	22.5	9.50	48.2	37.7	9.13	0.76	208.0	97.4	32.0	64.4
2024-03-05	9:49:00	67.9	22.5	9.45	48.1	39.4	9.13	1.21	199.7	85.2	36.1	64.4
2024-03-05	9:50:00	67.2	22.5	9.51	48.0	45.9	9.34	1.06	200.7	84.0	39.6	67.7
2024-03-05	9:51:00	73.3	22.5	9.56	48.3	34.7	9.34	1.10	202.8	84.0	40.2	67.7
2024-03-05	9:52:00	80.5	22.5	9.66	48.4	39.5	9.34	0.27	214.0	85.8	34.9	67.7
2024-03-05	9:53:00	76.8	22.5	9.58	48.4	36.0	9.13	1.07	212.5	85.8	34.1	66.5
2024-03-05	9:54:00	75.1	22.5	9.54	48.3	37.1	9.13	0.98	201.2	76.9	25.5	65.5
2024-03-05	9:55:00	71.9	22.5	9.43	48.1	33.6	9.13	0.95	201.2	76.9	26.9	62.4
2024-03-05	9:56:00	69.3	22.5	9.41	48.0	32.0	9.35	1.28	197.5	79.5	28.6	64.9
2024-03-05	9:57:00	64.7	22.5	9.37	47.9	45.9	9.35	1.56	187.9	71.1	25.1	67.5
2024-03-05	9:58:00	65.5	22.5	9.43	48.1	33.7	9.35	1.21	184.8	73.9	22.9	66.1
2024-03-05	9:59:00	72.1	22.5	9.47	48.2	35.1	9.35	0.85	199.9	92.8	35.1	66.1
2024-03-05	10:00:00	72.1	22.5	9.47	48.1	33.3	9.35	1.26	199.9	115.7	41.6	66.1
2024-03-05	10:01:00	64.7	22.5	9.45	48.0	34.8	9.35	1.10	193.2	113.7	33.5	66.1
2024-03-05	10:02:00	56.0	22.5	9.41	47.8	32.2	9.35	0.53	186.2	99.0	32.8	66.1
2024-03-05	10:03:00	53.7	22.5	9.40	47.8	31.4	9.35	1.18	182.4	63.2	31.6	63.7
2024-03-05	10:04:00	52.8	22.5	9.38	47.8	50.1	9.35	1.33	178.2	62.6	32.2	65.8
2024-03-05	10:05:00	69.4	22.5	9.45	48.0	34.0	9.35	1.26	183.7	57.3	44.1	65.8
2024-03-05	10:06:00	84.9	22.5	9.52	48.2	37.5	9.35	0.76	197.1	57.3	37.7	67.2
2024-03-05	10:07:00	85.3	22.5	9.51	48.2	36.0	9.35	1.22	197.1	82.1	32.5	67.2
2024-03-05	10:08:00	81.5	22.5	9.45	48.1	35.9	9.35	1.00	197.1	82.1	35.5	65.2
2024-03-05	10:09:00	70.7	22.5	9.37	47.8	33.6	9.35	1.10	194.5	79.6	34.5	63.0
2024-03-05	10:10:00	64.1	22.5	9.35	47.8	31.8	9.35	1.41	194.5	78.5	37.2	63.0
2024-03-05	10:11:00	61.3	21.5	9.34	47.7	47.5	9.35	0.50	187.6	76.3	37.7	65.3
2024-03-05	10:12:00	71.9	21.5	9.41	47.9	34.6	9.35	1.22	188.9	86.3	32.5	65.3
2024-03-05	10:13:00	84.0	21.5	9.47	48.1	34.7	9.35	1.25	188.9	74.2	23.7	66.3
2024-03-05	10:14:00	87.9	21.5	9.44	48.1	35.8	9.35	1.07	177.5	88.2	29.8	65.0
2024-03-05	10:15:00	84.6	21.5	9.40	48.0	34.0	9.35	1.13	175.6	90.3	34.8	63.8
2024-03-05	10:16:00	79.0	21.5	9.34	47.8	34.9	9.35	0.97	175.6	72.9	34.6	63.8
2024-03-05	10:17:00	76.2	21.5	9.32	47.8	33.3	9.35	1.25	174.5	53.7	33.3	63.8
2024-03-05	10:18:00	76.0	21.5	9.33	47.7	48.5	9.35	1.17	170.7	65.6	37.8	66.4
2024-03-05	10:19:00	96.5	21.5	9.42	47.9	34.1	9.56	0.98	179.0	64.7	40.4	66.4
2024-03-05	10:20:00	106.8	21.5	9.50	48.1	35.6	9.56	1.17	193.6	71.2	33.9	66.4
2024-03-05	10:21:00	100.0	21.5	9.46	48.1	33.5	9.36	1.32	193.6	70.2	30.3	63.6
2024-03-05	10:22:00	92.0	21.5	9.40	48.0	32.9	9.36	1.07	193.6	84.4	15.9	62.1
2024-03-05	10:23:00	85.8	21.5	9.30	47.7	33.8	9.36	0.57	185.4	97.4	32.0	62.1
2024-03-05	10:24:00	81.7	21.5	9.27	47.7	31.4	9.36	1.03	171.5	78.1	28.0	62.1
2024-03-05	10:25:00	80.5	21.5	9.29	47.6	42.6	9.57	0.65	170.1	71.9	20.2	67.3
2024-03-05	10:26:00	86.1	21.5	9.35	47.8	32.5	9.57	0.91	167.1	60.4	26.8	67.3
2024-03-05	10:27:00	90.8	21.5	9.42	48.0	33.7	9.57	0.65	177.8	60.4	34.8	63.7
2024-03-05	10:28:00	79.6	21.5	9.37	48.0	34.2	9.57	0.92	170.2	75.6	17.4	60.5
2024-03-05	10:29:00	77.9	21.5	9.34	47.8	33.3	9.57	0.98	177.4	90.1	26.3	60.5
2024-03-05	10:30:00	77.3	21.5	9.29	47.6	33.5	9.57	0.48	189.7	87.7	39.2	61.9
2024-03-05	10:31:00	77.3	21.5	9.26	47.5	33.7	9.57	0.98	191.3	87.7	43.2	61.9
2024-03-05	10:32:00	78.1	21.5	9.28	47.4	44.9	9.57	0.92	195.4	61.8	35.9	65.8
2024-03-05	10:33:00	86.1	21.5	9.36	47.7	35.4	9.57	1.03	196.9	59.9	30.2	66.9
2024-03-05	10:34:00	94.4	21.5	9.46	47.9	39.1	9.57	0.57	176.9	76.2	16.4	61.9
2024-03-05	10:35:00	96.2	21.5	9.42	47.9	36.2	9.57	1.43	168.6	81.2	17.4	60.9
2024-03-05	10:36:00	96.0	21.5	9.36	47.8	33.0	9.57	1.10	168.6	82.8	25.9	59.6
2024-03-05	10:37:00	95.5	20.5	9.27	47.5	35.6	9.57	0.83	186.8	73.6	43.8	61.5
2024-03-05	10:38:00	92.2	20.5	9.23	47.5	33.1	9.57	1.02	188.8	76.5	50.0	61.5
2024-03-05	10:39:00	89.3	20.5	9.22	47.5	45.8	9.57	1.00	187.0	76.5	42.2	64.2
2024-03-05	10:40:00	94.9	20.5	9.30	47.7	33.4	9.57	1.10	176.0	66.8	30.7	64.2
2024-03-05	10:41:00	101.1	20.5	9.35	47.8	34.1	9.57	0.57	176.0	68.6	33.4	61.2
2024-03-05	10:42:00	99.3	20.5	9.30	47.8	37.4	9.57	0.78	172.5	73.5	33.9	60.1
2024-03-05	10:43:00	91.0	20.5	9.28	47.6	37.3	9.57	0.35	172.5	59.1	21.0	58.7
2024-03-05	10:44:00	85.0	20.5	9.25	47.5	37.0	9.57	0.57	171.4	70.2	26.1	61.0

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-05	10:45:00	80.0	20.5	9.30	47.4	39.1	9.57	1.18	175.8	78.9	29.4	61.0
2024-03-05	10:46:00	77.2	20.5	9.44	47.5	58.7	9.57	0.87	187.6	81.8	38.1	64.3
2024-03-05	10:47:00	91.2	20.5	9.62	47.9	38.2	9.57	1.06	207.4	92.7	32.8	64.3
2024-03-05	10:48:00	96.9	20.5	9.77	48.0	40.9	9.31	0.87	207.4	106.1	12.1	64.3
2024-03-05	10:49:00	81.3	20.5	9.77	48.1	41.2	9.09	1.33	224.8	94.4	15.9	62.5
2024-03-05	10:50:00	73.6	20.5	9.76	48.1	36.4	9.09	0.92	222.0	90.1	24.7	61.2
2024-03-05	10:51:00	70.4	20.5	9.69	48.0	38.7	9.09	0.63	222.0	80.9	33.0	61.2
2024-03-05	10:52:00	67.7	20.5	9.66	47.9	43.2	9.09	1.18	222.0	76.4	41.1	61.2
2024-03-05	10:53:00	67.4	20.5	9.69	47.8	57.6	9.09	1.03	233.1	86.3	41.4	63.4
2024-03-05	10:54:00	82.8	20.5	9.76	48.1	38.9	9.09	1.07	242.7	76.6	48.4	65.7
2024-03-05	10:55:00	86.2	20.5	9.83	48.2	38.6	9.09	1.37	247.2	61.6	40.8	65.7
2024-03-05	10:56:00	71.1	20.5	9.77	48.3	40.0	9.09	1.22	250.2	60.5	38.0	62.9
2024-03-05	10:57:00	63.2	20.5	9.72	48.2	34.8	9.09	0.11	246.9	62.9	21.4	60.3
2024-03-05	10:58:00	55.4	20.5	9.65	48.1	39.8	9.09	0.27	238.4	72.1	28.2	63.1
2024-03-05	10:59:00	51.8	20.5	9.66	48.1	38.0	9.09	0.88	231.9	82.2	28.3	63.1
2024-03-05	11:00:00	50.2	20.5	9.70	48.1	50.5	9.09	0.92	227.0	71.8	25.1	65.8
2024-03-05	11:01:00	62.4	20.5	9.75	48.3	36.5	9.09	1.43	234.8	83.4	33.6	65.8
2024-03-05	11:15:00	66.5	19.6	9.62	48.2	35.0	9.29	1.25	205.4	75.4	21.9	65.4
2024-03-05	11:16:00	71.0	19.6	9.64	48.3	33.5	9.29	0.83	207.1	76.2	29.6	62.5
2024-03-05	11:17:00	68.4	19.6	9.52	48.2	34.5	9.29	1.31	216.5	102.9	33.5	62.5
2024-03-05	11:18:00	60.4	19.6	9.47	48.0	34.7	9.29	1.26	218.0	107.8	33.5	62.5
2024-03-05	11:19:00	53.2	19.6	9.36	47.7	31.9	9.29	0.67	190.2	94.0	23.7	61.0
2024-03-05	11:20:00	48.6	19.6	9.30	47.5	31.6	9.29	1.22	181.3	91.5	34.1	61.0
2024-03-05	11:21:00	46.4	19.6	9.31	47.4	47.0	9.51	1.10	176.1	96.7	35.4	62.2
2024-03-05	11:22:00	56.5	19.6	9.40	47.6	32.2	9.51	1.26	186.4	80.5	32.2	62.2
2024-03-05	11:23:00	67.2	19.6	9.47	47.8	31.5	9.51	1.56	193.0	60.5	23.1	63.6
2024-03-05	11:24:00	61.8	19.6	9.40	47.8	34.8	9.51	1.15	193.0	64.4	18.1	63.6
2024-03-05	11:25:00	58.3	18.5	9.33	47.7	30.2	9.51	1.56	196.3	82.0	33.3	61.2
2024-03-05	11:26:00	57.7	18.5	9.29	47.5	32.9	9.51	0.46	203.2	95.4	35.8	61.2
2024-03-05	11:27:00	57.0	17.3	9.25	47.4	35.3	9.51	0.92	202.1	83.9	31.6	61.2
2024-03-05	11:28:00	56.9	17.3	9.27	47.4	45.3	9.51	1.22	184.6	68.0	29.8	61.2
2024-03-05	11:29:00	66.6	17.3	9.34	47.7	34.0	9.51	1.03	173.1	66.4	21.5	62.2
2024-03-05	11:30:00	73.5	17.3	9.37	47.8	31.4	9.51	0.91	190.7	67.5	11.7	59.4
2024-03-05	11:31:00	73.6	17.3	9.31	47.8	34.4	9.51	0.90	196.3	85.4	14.2	59.4
2024-03-05	11:32:00	72.6	16.3	9.29	47.6	34.7	9.51	0.91	196.3	77.1	25.0	58.0
2024-03-05	11:33:00	66.4	16.3	9.20	47.4	34.3	9.51	0.76	195.3	75.5	34.3	58.0
2024-03-05	11:34:00	63.5	16.3	9.17	47.4	33.7	9.51	1.02	199.8	84.1	28.2	58.0
2024-03-05	11:35:00	63.1	16.3	9.23	47.4	41.7	9.51	0.85	201.9	88.2	35.4	61.7
2024-03-05	11:36:00	72.7	16.3	9.31	47.7	32.9	9.51	1.18	203.1	97.8	43.5	61.7
2024-03-05	11:37:00	79.6	16.3	9.37	47.9	35.9	9.51	1.11	207.0	79.2	44.2	60.6
2024-03-05	11:38:00	80.5	16.3	9.34	47.9	38.0	9.51	1.12	204.2	63.9	25.8	59.5
2024-03-05	11:39:00	80.4	16.3	9.32	47.8	35.6	9.51	0.88	205.5	69.7	29.6	59.5
2024-03-05	11:40:00	79.4	16.3	9.24	47.7	33.7	9.51	0.65	198.2	66.2	33.7	59.5
2024-03-05	11:41:00	75.8	16.3	9.20	47.6	33.3	9.51	0.53	196.6	47.8	30.4	59.5
2024-03-05	11:42:00	72.0	16.3	9.19	47.5	38.8	9.51	0.88	195.0	66.1	33.0	59.5
2024-03-05	11:43:00	72.9	16.3	9.24	47.7	34.4	9.51	1.57	197.2	70.7	35.5	59.5
2024-03-05	11:44:00	76.1	16.3	9.29	47.8	32.4	9.51	1.10	207.9	68.9	39.5	59.5
2024-03-05	11:45:00	76.2	16.3	9.23	47.7	33.4	9.51	0.87	196.8	71.9	22.4	57.1
2024-03-05	11:46:00	76.4	16.3	9.16	47.6	32.0	9.51	0.81	198.2	102.1	26.4	57.1
2024-03-05	11:47:00	76.4	16.3	9.08	47.3	35.2	9.51	0.35	193.2	108.2	19.3	57.1
2024-03-05	11:48:00	76.7	16.3	9.05	47.2	33.8	9.72	1.25	192.1	70.6	24.1	57.1
2024-03-05	11:49:00	75.8	16.3	9.07	47.2	48.1	9.72	0.45	189.7	68.8	22.6	58.4
2024-03-05	11:50:00	86.4	16.3	9.18	47.5	33.8	9.72	1.61	192.9	79.4	29.2	59.4
2024-03-05	11:51:00	97.6	16.3	9.27	47.6	35.0	9.72	0.91	207.4	66.3	33.2	60.6
2024-03-05	11:52:00	93.9	15.3	9.24	47.6	121.3	9.51	1.28	204.9	58.8	39.9	58.1
2024-03-05	11:53:00	110.2	15.3	9.23	47.6	34.6	9.51	0.61	198.1	58.8	30.9	56.4
2024-03-05	11:54:00	117.6	15.3	9.14	47.5	25.3	9.51	0.61	198.1	82.7	27.2	54.5
2024-03-05	11:55:00	92.4	15.3	8.92	47.1	25.0	9.51	0.53	192.7	81.8	23.9	50.4
2024-03-05	11:56:00	51.6	15.3	8.63	46.4	25.4	9.73	0.35	183.0	81.8	20.4	51.5
2024-03-05	11:57:00	29.8	15.3	8.48	46.1	24.4	10.23	0.61	183.0	102.2	24.4	51.5
2024-03-05	11:58:00	22.8	15.3	8.42	45.9	22.6	10.43	0.72	188.6	98.2	29.5	51.5
2024-03-05	11:59:00	18.7	15.3	8.32	45.7	23.6	10.43	0.83	188.1	114.8	27.3	50.1
2024-03-05	12:00:00	16.4	15.3	8.24	45.5	22.8	10.43	0.57	186.5	110.5	22.5	47.9
2024-03-05	12:01:00	14.3	15.3	8.16	45.3	26.3	10.67	0.22	184.2	95.2	29.7	50.6
2024-03-05	12:02:00	14.4	15.3	8.22	45.3	32.6	10.67	1.22	185.2	88.3	27.7	57.8
2024-03-05	12:03:00	36.7	15.3	8.48	45.6	47.1	10.88	0.83	187.9	73.7	29.3	64.7
2024-03-05	12:04:00	69.5	15.3	8.82	46.6	35.3	10.55	1.26	191.2	76.5	36.2	65.7
2024-03-05	12:05:00	94.1	15.3	9.09	47.1	36.0	10.26	1.25	193.7	104.2	34.5	64.5
2024-03-05	12:06:00	100.3	15.3	9.16	47.5	35.5	9.76	0.72	202.1	104.0	23.7	64.5

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-05	12:07:00	102.6	16.3	9.18	47.5	32.9	9.76	1.02	209.0	88.7	31.8	60.5
2024-03-05	12:08:00	102.5	16.3	9.11	47.4	38.0	9.76	0.00	195.7	88.7	33.6	60.5
2024-03-05	12:09:00	102.4	16.3	9.08	47.3	36.2	9.76	1.13	189.2	77.1	22.0	60.5
2024-03-05	12:10:00	113.4	16.3	9.10	47.3	46.0	9.76	1.22	176.0	65.2	17.2	62.7
2024-03-05	12:11:00	139.2	16.3	9.15	47.5	37.8	9.76	1.15	176.0	67.2	29.3	62.7
2024-03-05	12:12:00	157.6	16.3	9.25	47.7	40.0	9.76	0.83	186.6	63.4	25.2	64.0
2024-03-05	12:13:00	158.3	16.3	9.23	47.7	39.6	9.54	1.25	186.6	66.6	16.4	62.2
2024-03-05	12:14:00	142.3	16.3	9.25	47.7	34.2	9.54	1.11	179.8	72.2	22.4	58.3
2024-03-05	12:15:00	126.5	16.3	9.25	47.5	43.7	9.54	0.42	179.8	72.2	17.4	58.3
2024-03-05	12:16:00	113.1	16.3	9.32	47.7	34.0	9.54	1.48	179.8	62.5	31.1	58.3
2024-03-05	12:17:00	109.8	16.3	9.38	47.6	42.2	9.54	0.96	179.8	62.5	26.9	60.3
2024-03-05	12:18:00	109.9	16.3	9.43	47.8	38.5	9.54	1.07	181.7	72.7	26.9	60.3
2024-03-05	12:19:00	112.4	16.3	9.51	47.9	39.1	9.54	1.10	202.4	79.1	28.3	61.6
2024-03-05	12:20:00	107.4	16.3	9.47	47.9	37.6	9.31	0.80	207.6	78.4	32.3	59.3
2024-03-05	12:21:00	92.0	16.3	9.48	47.8	32.5	9.31	0.98	223.0	78.4	40.6	58.1
2024-03-05	12:22:00	79.9	16.3	9.47	47.7	36.3	9.31	0.77	223.0	78.4	38.2	59.5
2024-03-05	12:23:00	71.9	16.3	9.47	47.7	38.4	9.31	0.45	206.4	91.0	26.4	59.5
2024-03-05	12:24:00	70.1	16.3	9.55	47.7	50.8	9.31	0.81	224.4	92.1	16.4	63.5
2024-03-05	12:25:00	78.8	16.3	9.68	48.0	37.8	9.31	0.92	248.3	94.6	20.6	64.5
2024-03-05	12:26:00	83.2	16.3	9.78	48.3	38.1	9.11	0.98	248.3	95.9	27.2	64.5
2024-03-05	12:27:00	71.3	16.3	9.76	48.4	38.8	9.11	1.03	236.7	75.7	29.0	64.5
2024-03-05	12:28:00	60.7	16.3	9.77	48.4	33.7	9.11	1.06	230.5	71.7	27.4	60.1
2024-03-05	12:29:00	50.5	16.3	9.74	48.2	37.2	9.11	0.50	221.4	83.8	27.2	60.1
2024-03-05	12:30:00	43.3	16.3	9.70	48.2	37.3	9.11	1.06	229.9	87.3	30.4	60.1
2024-03-05	12:31:00	41.9	16.3	9.73	48.1	44.9	9.11	1.10	238.7	69.9	30.4	63.3
2024-03-05	12:32:00	44.6	16.3	9.79	48.3	38.1	9.11	0.90	243.5	76.9	27.2	65.6
2024-03-05	12:33:00	49.3	16.3	9.86	48.5	36.7	9.11	0.95	243.5	93.2	34.1	66.9
2024-03-05	12:34:00	46.7	16.3	9.79	48.5	39.5	8.88	1.10	223.4	85.5	19.1	66.9
2024-03-05	12:35:00	42.4	17.3	9.77	48.4	34.2	8.88	1.11	223.4	81.9	25.9	65.7
2024-03-05	12:36:00	39.2	17.3	9.74	48.2	38.5	8.88	0.83	230.4	91.6	40.8	65.7
2024-03-05	12:37:00	37.3	17.3	9.75	48.2	39.3	8.88	1.11	233.3	104.4	45.0	65.7
2024-03-05	12:38:00	37.0	18.5	9.84	48.3	51.0	8.88	1.33	234.8	89.4	43.6	68.6
2024-03-05	12:39:00	44.3	18.5	9.91	48.6	36.8	8.88	1.32	248.1	86.4	32.1	69.7
2024-03-05	12:40:00	48.9	18.5	9.97	48.8	33.9	8.88	1.11	249.3	81.0	16.7	66.9
2024-03-05	12:41:00	45.9	18.5	9.88	48.8	34.6	8.67	1.11	236.0	112.7	17.6	66.9
2024-03-05	12:42:00	41.4	18.5	9.83	48.6	39.6	8.67	1.13	236.0	113.9	24.8	66.9
2024-03-05	12:43:00	34.6	18.5	9.76	48.4	35.3	8.88	0.75	231.8	106.4	28.3	68.1
2024-03-05	12:44:00	32.4	18.5	9.77	48.3	32.9	8.88	1.31	231.8	102.4	28.3	68.1
2024-03-05	12:45:00	31.3	18.5	9.82	48.2	41.7	8.88	0.98	232.4	107.7	18.7	70.4
2024-03-05	12:46:00	31.8	18.5	9.88	48.5	35.4	8.88	0.80	236.2	85.7	22.1	71.5
2024-03-05	12:47:00	32.9	19.5	9.91	48.7	37.5	8.88	1.22	246.9	78.1	34.2	71.5
2024-03-05	12:48:00	32.9	19.5	9.86	48.7	35.1	8.88	1.41	246.9	100.6	34.1	70.3
2024-03-05	12:49:00	31.0	19.5	9.83	48.6	36.5	8.88	0.67	242.6	116.2	34.1	70.3
2024-03-05	12:50:00	30.0	20.6	9.77	48.5	35.5	8.88	0.72	236.1	99.9	27.3	70.3
2024-03-05	12:51:00	28.6	20.6	9.80	48.5	34.8	8.88	1.33	236.1	99.9	37.1	70.3
2024-03-05	12:52:00	28.1	20.6	9.82	48.6	49.8	8.88	1.02	236.1	101.2	25.2	71.6
2024-03-05	12:53:00	34.5	21.6	9.89	48.8	35.2	8.88	0.95	255.4	102.8	17.9	71.6
2024-03-05	12:54:00	43.4	21.6	9.89	48.9	33.7	8.88	0.98	243.6	98.1	17.0	73.4
2024-03-05	12:55:00	44.1	21.6	9.77	48.8	34.4	8.88	1.48	227.5	88.3	20.4	71.9
2024-03-05	12:56:00	41.5	21.6	9.67	48.6	32.6	8.88	1.30	225.9	81.1	26.7	71.9
2024-03-05	12:57:00	37.7	22.7	9.57	48.4	33.6	8.88	0.30	216.5	85.9	30.8	71.9
2024-03-05	12:58:00	36.4	22.7	9.53	48.2	31.8	9.10	1.13	200.7	97.5	34.4	71.9
2024-03-05	12:59:00	35.8	22.7	9.50	48.2	40.6	9.10	0.92	211.6	83.4	37.8	73.7
2024-03-05	13:00:00	41.1	23.8	9.55	48.5	32.9	9.31	1.18	224.3	81.7	33.7	73.7
2024-03-05	13:01:00	51.0	23.8	9.64	48.6	36.1	9.31	0.85	226.9	88.5	25.6	73.7
2024-03-05	13:02:00	51.4	24.8	9.61	48.6	35.5	9.31	0.96	216.3	110.1	25.7	73.7
2024-03-05	13:03:00	51.6	24.8	9.56	48.5	32.3	9.31	1.10	208.3	105.1	32.9	73.7
2024-03-05	13:04:00	54.0	24.8	9.47	48.2	34.3	9.31	0.68	199.4	116.3	32.3	72.7
2024-03-05	13:05:00	60.3	24.8	9.41	48.0	33.5	9.31	1.33	196.6	88.9	21.4	71.0
2024-03-05	13:06:00	66.6	24.8	9.43	48.0	47.6	9.31	0.98	202.9	55.5	26.0	73.4
2024-03-05	13:07:00	80.9	24.8	9.53	48.2	33.7	9.31	1.31	216.3	58.9	31.5	73.4
2024-03-05	13:08:00	84.4	24.8	9.63	48.3	36.7	9.31	1.10	209.7	73.2	28.7	70.9
2024-03-05	13:09:00	82.1	24.8	9.63	48.3	37.4	9.31	1.03	209.7	64.9	26.2	69.5
2024-03-05	13:10:00	74.4	24.8	9.65	48.2	35.0	9.31	0.53	223.6	96.2	19.9	69.5
2024-03-05	13:11:00	65.7	24.8	9.66	48.1	38.8	9.31	0.91	218.5	96.2	30.6	70.5
2024-03-05	13:12:00	58.4	24.8	9.70	48.2	35.5	9.31	0.87	211.7	80.5	26.3	70.5
2024-03-05	13:13:00	55.9	24.8	9.80	48.3	53.1	9.31	1.43	216.3	65.8	29.9	73.9
2024-03-05	13:14:00	56.7	24.8	9.91	48.5	36.1	9.08	1.75	221.7	68.4	18.3	73.9
2024-03-05	13:15:00	58.6	24.8	10.00	48.7	38.9	9.08	1.06	235.2	92.5	10.3	73.9

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-05	13:16:00	58.2	24.8	9.92	48.7	37.3	8.83	1.21	231.2	89.2	15.9	71.1
2024-03-05	13:17:00	55.9	24.8	9.87	48.6	34.8	8.83	0.63	227.1	89.4	25.2	68.2
2024-03-05	13:18:00	52.3	24.8	9.81	48.5	35.8	8.83	0.68	221.4	100.7	38.1	68.2
2024-03-05	13:19:00	48.0	24.8	9.81	48.4	34.5	8.83	1.02	233.7	90.6	40.0	71.0
2024-03-05	13:20:00	46.4	24.8	9.84	48.4	53.1	8.83	1.37	235.7	101.9	38.5	75.3
2024-03-05	13:21:00	48.6	24.8	9.92	48.6	35.4	8.83	2.13	237.3	78.8	39.8	75.3
2024-03-05	13:22:00	53.2	24.8	10.02	48.8	38.2	8.83	0.98	245.2	87.4	39.5	73.5
2024-03-05	13:23:00	53.4	24.8	10.01	48.8	37.4	8.83	1.48	245.2	102.3	35.7	71.1
2024-03-05	13:24:00	47.1	24.8	10.00	48.8	32.8	8.83	1.30	245.2	98.6	30.9	69.1
2024-03-05	13:25:00	40.2	24.8	9.95	48.7	35.5	8.83	0.61	248.3	109.5	27.5	70.8
2024-03-05	13:26:00	37.6	24.8	9.92	48.6	32.2	8.83	1.36	248.3	121.7	26.3	70.8
2024-03-05	13:27:00	36.5	24.8	9.91	48.5	43.1	8.83	1.21	237.6	106.6	28.4	73.6
2024-03-05	13:28:00	37.3	24.8	9.98	48.7	35.6	8.83	1.67	233.1	122.6	20.0	74.6
2024-03-05	13:29:00	40.2	24.8	10.06	48.8	34.4	8.83	1.40	241.0	115.3	21.7	74.6
2024-03-05	13:30:00	39.6	24.8	10.00	48.7	35.3	8.83	1.31	249.7	98.1	33.7	73.6
2024-03-05	13:31:00	36.1	24.8	9.96	48.7	32.5	8.83	1.21	252.4	78.7	30.9	70.0
2024-03-05	13:32:00	32.6	24.8	9.88	48.5	36.0	8.83	0.76	250.1	94.3	32.1	70.0
2024-03-05	13:33:00	31.8	24.8	9.86	48.4	33.9	8.83	1.57	251.3	110.9	27.1	70.0
2024-03-05	13:34:00	30.6	24.8	9.91	48.4	46.4	8.83	1.45	236.6	98.1	32.2	75.5
2024-03-05	13:35:00	32.8	24.8	10.01	48.6	37.8	8.83	1.87	236.6	82.4	29.7	75.5
2024-03-05	13:36:00	36.9	24.8	10.12	48.8	36.8	8.83	1.52	249.9	90.6	32.3	76.1
2024-03-05	13:37:00	36.5	24.8	10.08	48.9	38.3	8.62	1.63	237.7	94.8	40.4	76.1
2024-03-05	13:38:00	32.3	24.8	10.03	48.9	38.0	8.62	1.26	233.2	94.8	36.7	70.2
2024-03-05	13:39:00	28.5	24.8	9.92	48.7	34.7	8.62	0.80	233.2	97.6	31.6	70.2
2024-03-05	13:40:00	27.7	24.8	9.87	48.6	36.1	8.62	1.50	233.8	92.2	35.7	70.2
2024-03-05	13:41:00	27.8	24.8	9.94	48.6	45.3	8.84	1.52	231.7	107.5	28.7	73.7
2024-03-05	13:42:00	33.4	24.8	10.02	48.8	37.8	8.84	1.48	238.4	109.7	21.9	74.9
2024-03-05	13:43:00	39.3	24.8	10.07	48.9	39.0	8.84	1.00	241.5	92.0	31.2	74.9
2024-03-05	13:44:00	39.8	24.8	10.02	48.9	37.7	8.62	1.10	238.4	105.6	25.7	74.9
2024-03-05	13:45:00	38.6	24.8	10.01	48.8	32.7	8.62	1.11	226.4	104.5	20.6	71.8
2024-03-05	13:46:00	31.8	24.8	9.94	48.7	35.7	8.62	1.30	226.4	106.8	19.2	71.8
2024-03-05	13:47:00	27.7	24.8	9.91	48.6	39.1	8.62	1.51	223.4	94.8	27.1	73.3
2024-03-05	13:48:00	26.3	24.8	9.93	48.6	41.7	8.83	1.06	243.0	111.0	35.1	76.3
2024-03-05	13:49:00	27.1	24.8	10.00	48.8	35.0	8.83	1.00	245.2	121.7	34.0	76.3
2024-03-05	13:50:00	30.6	24.8	10.05	49.0	35.6	8.83	1.13	245.2	121.7	34.0	76.3
2024-03-05	13:51:00	30.7	24.8	9.95	48.9	35.7	8.61	1.71	239.9	111.3	33.2	75.1
2024-03-05	13:52:00	29.7	24.8	9.90	48.8	32.5	8.61	1.28	232.9	105.4	33.1	72.9
2024-03-05	13:53:00	27.3	24.8	9.85	48.5	34.6	8.61	0.92	210.3	98.2	18.9	75.1
2024-03-05	13:54:00	25.7	24.8	9.81	48.4	38.0	8.84	1.67	210.3	81.8	18.4	75.1
2024-03-05	13:55:00	25.7	24.8	9.82	48.4	47.1	8.84	1.33	210.3	82.7	19.4	77.3
2024-03-05	13:56:00	34.2	24.8	9.88	48.6	34.3	8.84	1.22	233.7	95.6	21.0	77.3
2024-03-05	13:57:00	38.7	24.8	9.94	48.8	33.9	8.84	1.56	229.4	113.3	23.9	77.3
2024-03-05	13:58:00	37.5	24.8	9.87	48.8	34.6	8.84	1.40	227.2	122.3	41.4	73.4
2024-03-05	13:59:00	34.3	24.8	9.84	48.7	31.9	8.84	1.40	227.2	114.6	43.6	73.4
2024-03-05	14:00:00	28.2	24.8	9.74	48.5	32.6	8.84	1.22	227.2	114.6	40.8	72.2
2024-03-05	14:01:00	24.0	24.8	9.67	48.4	34.9	8.84	1.56	227.2	136.1	33.0	72.2
2024-03-05	14:02:00	24.5	24.8	9.71	48.3	41.3	9.05	1.71	224.4	112.9	40.4	75.0
2024-03-05	14:03:00	35.6	24.8	9.77	48.5	36.2	9.05	1.75	214.8	103.5	41.4	75.0
2024-03-05	14:04:00	41.5	24.8	9.83	48.7	33.4	9.05	1.45	218.4	109.1	32.3	73.9
2024-03-05	14:05:00	41.4	24.8	9.76	48.7	34.4	9.05	1.87	218.4	106.7	40.1	73.9
2024-03-05	14:06:00	39.1	24.8	9.74	48.6	33.2	9.05	1.41	222.1	92.0	47.3	73.9
2024-03-05	14:07:00	34.5	24.8	9.68	48.4	32.5	9.05	0.92	222.1	91.0	34.1	73.9
2024-03-05	14:08:00	31.6	24.8	9.64	48.3	35.8	9.05	1.65	210.9	94.7	24.9	72.8
2024-03-05	14:09:00	31.1	24.8	9.66	48.3	42.7	9.05	1.45	215.5	94.7	35.0	74.7
2024-03-05	14:10:00	31.3	24.8	9.76	48.6	33.3	9.05	1.72	235.0	84.9	36.7	74.7
2024-03-05	14:11:00	34.0	24.8	9.86	48.8	37.0	9.05	1.40	222.3	124.4	36.1	76.5
2024-03-05	14:12:00	36.3	24.8	9.84	48.8	35.2	9.05	2.06	222.3	139.8	39.0	75.0
2024-03-05	14:13:00	36.3	24.8	9.80	48.7	32.8	9.05	1.78	226.3	119.6	45.2	75.0
2024-03-05	14:14:00	32.3	24.8	9.72	48.5	31.9	9.05	1.18	216.4	131.2	36.7	73.8
2024-03-05	14:15:00	29.0	24.8	9.68	48.4	31.7	9.05	1.75	210.4	109.7	25.5	73.8
2024-03-05	14:16:00	28.1	24.8	9.66	48.3	42.1	9.05	1.37	207.9	114.5	30.7	76.3
2024-03-05	14:17:00	33.6	24.8	9.74	48.5	33.9	9.05	1.82	226.1	92.1	27.2	76.3
2024-03-05	14:18:00	40.5	24.8	9.80	48.6	32.9	9.05	1.02	226.1	95.9	28.4	76.3
2024-03-05	14:19:00	41.6	24.8	9.77	48.6	35.2	9.05	1.57	211.6	102.7	29.6	74.9
2024-03-05	14:20:00	40.9	24.8	9.74	48.6	33.2	9.05	1.52	210.4	108.1	34.4	72.2
2024-03-05	14:21:00	37.2	24.8	9.68	48.4	33.8	9.05	1.11	209.2	112.4	41.3	72.2
2024-03-05	14:22:00	36.2	24.8	9.67	48.3	31.8	9.05	1.67	215.9	116.5	39.9	72.2
2024-03-05	14:23:00	35.9	24.8	9.71	48.3	43.8	9.05	0.97	215.9	110.6	23.5	75.9
2024-03-05	14:24:00	41.1	24.8	9.78	48.5	32.6	9.05	1.82	215.9	81.0	27.8	75.9

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-05	14:25:00	48.1	24.8	9.82	48.6	33.5	9.05	1.56	218.8	73.5	33.7	74.4
2024-03-05	14:26:00	48.3	24.8	9.72	48.6	35.4	9.05	1.78	216.8	75.1	27.4	73.2
2024-03-05	14:27:00	47.2	24.8	9.65	48.4	32.5	9.05	1.61	216.8	102.5	31.5	71.6
2024-03-05	14:28:00	44.9	24.8	9.58	48.3	35.0	9.05	0.85	206.3	93.2	36.1	71.6
2024-03-05	14:29:00	44.4	24.8	9.60	48.2	33.7	9.05	1.68	209.8	74.9	29.0	71.6
2024-03-05	14:30:00	44.3	24.8	9.67	48.3	46.0	9.05	1.41	226.5	82.5	31.5	76.8
2024-03-05	14:31:00	45.5	24.8	9.76	48.5	33.6	9.05	1.18	227.9	86.0	31.7	76.8
2024-03-05	14:32:00	47.6	24.8	9.82	48.7	33.9	9.05	1.43	227.9	98.6	28.7	75.6
2024-03-05	14:33:00	47.8	24.8	9.75	48.7	35.0	9.05	1.43	221.0	110.4	28.7	73.0
2024-03-05	14:34:00	46.5	24.8	9.71	48.6	32.4	9.05	1.37	230.8	110.4	20.8	69.2
2024-03-05	14:35:00	41.6	24.8	9.62	48.4	33.7	9.05	1.11	208.5	122.1	23.5	70.9
2024-03-05	14:36:00	38.7	24.8	9.56	48.2	34.2	9.05	1.30	197.2	110.4	24.9	70.9
2024-03-05	14:37:00	38.1	24.8	9.55	48.1	44.9	9.05	1.61	193.7	76.8	21.4	73.0
2024-03-05	14:38:00	46.7	24.8	9.63	48.3	34.0	9.27	1.93	192.4	91.7	12.3	73.0
2024-03-05	14:39:00	54.5	25.8	9.71	48.5	36.3	9.27	1.33	209.2	107.5	21.8	74.7
2024-03-05	14:40:00	55.1	25.8	9.67	48.4	37.3	9.07	2.40	204.0	85.3	27.3	74.7
2024-03-05	14:41:00	53.9	25.8	9.65	48.4	32.7	9.07	1.00	204.0	83.5	31.2	71.7
2024-03-05	14:42:00	47.9	25.8	9.59	48.3	34.7	9.07	1.17	193.8	73.4	20.4	71.7
2024-03-05	14:43:00	42.9	25.8	9.55	48.2	32.5	9.07	2.02	193.8	84.2	15.8	71.7
2024-03-05	14:44:00	41.7	25.8	9.58	48.1	44.4	9.07	1.41	199.6	88.5	25.3	73.3
2024-03-05	14:45:00	44.5	25.8	9.66	48.4	33.2	9.27	1.68	211.8	84.4	37.5	74.3
2024-03-05	14:46:00	49.1	25.8	9.71	48.5	34.9	9.27	1.56	211.8	86.9	38.8	75.5
2024-03-05	14:47:00	49.3	25.8	9.61	48.4	37.0	9.07	2.33	211.6	103.8	30.3	72.7
2024-03-05	14:48:00	49.3	25.8	9.54	48.2	35.2	9.07	1.83	196.8	96.1	28.4	68.3
2024-03-05	14:49:00	49.4	25.8	9.45	48.0	35.4	9.07	1.18	188.7	74.6	29.9	68.3
2024-03-05	14:50:00	49.4	25.8	9.45	47.9	35.7	9.30	1.32	202.2	57.2	29.9	69.3
2024-03-05	14:51:00	48.5	25.8	9.53	47.9	41.7	9.30	1.30	203.4	58.5	29.1	79.6
2024-03-05	14:52:00	52.6	25.8	9.67	48.2	34.6	9.30	1.90	204.5	75.6	30.0	78.2
2024-03-05	14:53:00	58.4	25.8	9.75	48.4	35.4	9.30	1.86	204.5	63.8	26.2	71.1
2024-03-05	14:54:00	58.4	25.8	9.67	48.4	36.9	9.07	2.17	197.7	70.2	26.1	71.1
2024-03-05	14:55:00	57.5	25.8	9.57	48.2	33.0	9.07	1.21	202.8	87.6	29.4	68.7
2024-03-05	14:56:00	56.2	25.8	9.50	48.0	36.7	9.07	1.00	194.3	104.4	19.0	68.7
2024-03-05	14:57:00	55.8	25.8	9.46	48.0	36.1	9.28	1.56	194.3	96.9	23.8	70.0
2024-03-05	14:58:00	55.5	25.8	9.50	48.0	39.1	9.28	1.46	193.3	113.8	27.6	72.2
2024-03-05	14:59:00	57.2	25.8	9.56	48.1	35.6	9.28	1.95	193.3	114.6	20.4	72.2
2024-03-05	15:00:00	60.1	25.8	9.63	48.2	34.8	9.28	1.63	197.8	101.1	13.3	73.3
2024-03-05	15:01:00	59.4	25.8	9.59	48.3	36.0	9.28	1.48	211.5	104.4	27.1	72.2
2024-03-05	15:02:00	54.1	25.8	9.55	48.1	31.6	9.28	1.57	210.1	109.9	32.3	69.5
2024-03-05	15:03:00	49.4	25.8	9.50	48.0	33.9	9.28	1.11	203.4	116.5	30.9	69.5
2024-03-05	15:04:00	45.3	25.8	9.46	48.0	34.1	9.28	1.65	198.6	103.3	25.0	69.5
2024-03-05	15:05:00	44.1	25.8	9.50	47.9	41.8	9.28	1.75	197.2	103.0	18.8	71.8
2024-03-05	15:06:00	53.7	25.8	9.55	48.1	37.2	9.28	1.93	192.3	79.6	12.5	71.8
2024-03-05	15:07:00	64.1	25.8	9.64	48.2	34.5	9.28	1.46	189.5	74.3	23.9	71.8
2024-03-05	15:08:00	63.2	25.8	9.65	48.3	36.7	9.28	1.87	185.3	86.4	40.3	71.8
2024-03-05	15:09:00	55.9	25.8	9.67	48.2	31.6	9.28	1.60	206.5	101.3	32.2	68.9
2024-03-05	15:10:00	48.5	25.8	9.61	48.0	35.1	9.28	1.18	210.8	90.6	30.4	68.9
2024-03-05	15:11:00	45.4	25.8	9.56	48.0	37.0	9.28	1.57	209.4	80.9	25.6	68.9
2024-03-05	15:12:00	45.1	25.8	9.60	47.9	40.4	9.28	1.43	210.6	85.4	25.6	72.2

March 05/2024	Main Analyzers										
	CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
Test 1	PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
Units	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
Max	158.3	25.8	10.12	49.0	121.3	10.88	2.40	255.4	139.8	50.0	79.6
Min	14.3	15.3	8.16	45.3	22.6	8.61	0.00	167.1	47.8	10.3	47.9
Average	59.7	21.7	9.55	48.1	36.8	9.25	1.14	209.4	88.1	29.4	67.2
Variance	631.3	12.3	0.10	0.3	48.5	0.13	0.15	457.2	293.6	55.1	37.4

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-06	8:55:00	35.4	33.2	10.13	49.3	34.9	9.30	1.82	364.6	84.6	23.8	64.8
2024-03-06	8:56:00	34.6	33.2	10.16	49.2	46.7	9.30	1.40	367.4	65.7	31.1	69.3
2024-03-06	8:57:00	36.8	33.2	10.25	49.4	35.5	9.30	1.45	370.9	71.7	29.5	69.3
2024-03-06	8:58:00	40.1	33.2	10.31	49.6	33.9	9.30	1.07	371.9	84.1	33.3	68.1
2024-03-06	8:59:00	40.1	33.2	10.27	49.5	35.2	9.30	1.61	374.4	99.4	29.8	65.8
2024-03-06	9:00:00	38.1	33.2	10.20	49.4	34.1	9.30	1.45	366.7	90.9	28.0	63.5
2024-03-06	9:01:00	36.4	33.2	10.13	49.2	38.1	9.30	1.06	363.9	90.9	27.0	63.5
2024-03-06	9:02:00	35.7	33.2	10.11	49.2	36.9	9.30	1.33	362.6	101.6	17.2	67.1
2024-03-06	9:03:00	35.6	33.2	10.14	49.2	44.9	9.30	1.17	366.9	80.5	18.2	68.9
2024-03-06	9:04:00	37.6	33.2	10.21	49.5	37.2	9.30	1.75	362.7	63.4	5.1	70.2
2024-03-06	9:05:00	43.4	33.2	10.32	49.6	36.5	9.30	1.30	370.6	87.0	14.8	71.3
2024-03-06	9:06:00	43.7	33.2	10.27	49.5	36.8	9.30	1.47	370.6	87.0	19.2	69.4
2024-03-06	9:07:00	40.0	33.2	10.22	49.4	34.6	9.30	2.11	379.2	74.7	19.8	66.0
2024-03-06	9:08:00	36.2	33.2	10.14	49.3	35.6	9.30	0.67	367.0	78.2	10.9	66.0
2024-03-06	9:09:00	35.4	33.2	10.08	49.1	34.4	9.30	1.52	355.7	75.8	7.2	67.2
2024-03-06	9:10:00	34.8	33.2	10.11	49.0	45.0	9.30	1.78	373.3	87.7	20.7	68.6
2024-03-06	9:11:00	36.6	33.2	10.20	49.3	38.3	9.30	2.25	385.5	99.7	30.2	69.8
2024-03-06	9:12:00	41.6	33.2	10.28	49.6	37.5	9.30	1.61	389.1	85.2	23.8	69.8
2024-03-06	9:13:00	41.9	33.2	10.26	49.6	37.3	9.30	1.68	384.9	66.2	0.0	69.8
2024-03-06	9:14:00	41.1	33.2	10.19	49.5	33.4	9.30	1.67	370.5	70.4	0.5	66.7
2024-03-06	9:15:00	36.5	33.2	10.10	49.3	36.8	9.30	0.95	370.5	70.4	11.6	66.7
2024-03-06	9:16:00	33.1	33.2	10.03	49.1	38.7	9.30	1.72	346.0	79.3	18.5	65.6
2024-03-06	9:17:00	32.5	33.0	10.05	49.1	42.7	9.43	1.33	346.0	69.9	18.5	67.6
2024-03-06	9:18:00	33.0	33.0	10.13	49.3	37.2	9.43	2.52	351.8	74.3	3.5	67.6
2024-03-06	9:19:00	35.0	33.0	10.17	49.4	36.7	9.43	1.71	363.6	75.5	8.5	68.7
2024-03-06	9:20:00	35.0	33.0	10.11	49.4	39.1	9.43	1.41	373.7	92.0	17.1	68.7
2024-03-06	9:21:00	34.7	33.0	10.07	49.3	35.2	9.43	1.52	378.1	117.0	29.4	67.2
2024-03-06	9:22:00	33.1	33.0	10.02	49.2	39.2	9.43	1.82	373.6	107.0	24.3	67.2
2024-03-06	9:23:00	32.8	33.0	10.02	49.1	42.3	9.43	1.56	366.9	105.3	27.9	69.2
2024-03-06	9:24:00	32.6	33.0	10.06	49.1	49.6	9.43	1.71	360.3	96.3	24.5	69.2
2024-03-06	9:25:00	41.2	33.0	10.20	49.4	39.1	9.43	1.87	364.6	110.2	18.7	70.2
2024-03-06	9:26:00	44.8	33.0	10.27	49.6	37.1	9.43	1.47	367.9	94.7	19.3	70.2
2024-03-06	9:27:00	43.4	33.0	10.18	49.6	39.2	9.23	1.43	365.6	93.5	10.9	69.2
2024-03-06	9:28:00	39.0	33.0	10.10	49.5	35.5	9.23	1.60	365.8	72.7	21.0	67.0
2024-03-06	9:29:00	36.7	33.0	10.01	49.2	37.9	9.23	1.07	363.6	81.4	27.4	67.0
2024-03-06	9:30:00	35.0	33.0	9.95	49.1	39.3	9.43	1.87	357.9	83.2	28.5	67.0
2024-03-06	9:31:00	34.0	33.0	9.93	49.0	47.5	9.43	1.26	357.9	107.4	28.5	67.0
2024-03-06	9:32:00	34.3	33.0	10.01	49.2	40.2	9.43	1.60	359.1	86.7	24.9	67.0
2024-03-06	9:33:00	41.9	33.0	10.16	49.4	38.4	9.43	1.47	385.2	74.8	18.5	69.2
2024-03-06	9:34:00	42.1	33.0	10.17	49.5	41.9	9.43	1.47	372.8	103.3	14.6	69.2
2024-03-06	9:35:00	41.2	33.0	10.15	49.4	36.4	9.43	1.60	371.0	118.6	8.5	67.8
2024-03-06	9:36:00	38.5	33.0	10.07	49.2	39.9	9.43	0.71	380.8	114.8	16.4	67.8
2024-03-06	9:37:00	37.6	33.0	10.04	49.1	36.6	9.43	1.37	382.6	74.3	23.5	67.8
2024-03-06	9:38:00	37.2	33.0	10.02	49.0	49.7	9.43	1.56	378.3	50.4	23.2	69.4
2024-03-06	9:39:00	38.7	33.0	10.10	49.2	38.3	9.43	1.76	369.3	50.4	16.3	69.4
2024-03-06	9:40:00	45.9	33.0	10.18	49.4	37.9	9.43	1.53	371.9	84.9	24.5	67.3
2024-03-06	9:41:00	45.9	33.0	10.14	49.4	40.3	9.43	1.30	369.5	90.3	18.6	67.3
2024-03-06	9:42:00	45.7	33.0	10.07	49.3	36.4	9.43	1.67	356.8	91.5	18.6	67.3
2024-03-06	9:43:00	44.6	33.0	10.07	49.0	40.0	9.43	1.02	356.8	91.5	22.6	70.2
2024-03-06	9:44:00	42.3	33.0	10.05	49.0	38.7	9.43	1.43	357.8	84.0	31.5	68.6
2024-03-06	9:45:00	41.9	33.0	10.07	49.0	47.4	9.43	1.71	357.8	72.5	34.2	68.6
2024-03-06	9:46:00	42.0	33.0	10.09	49.2	38.8	9.43	1.67	374.0	81.4	32.1	68.6
2024-03-06	9:47:00	43.4	33.0	10.11	49.3	39.2	9.43	1.25	375.2	93.2	27.8	69.6
2024-03-06	9:48:00	43.6	33.0	10.07	49.3	40.6	9.43	1.36	370.3	76.1	41.3	66.8
2024-03-06	9:49:00	42.9	33.0	10.08	49.3	39.5	9.43	1.47	369.2	97.0	34.9	66.8
2024-03-06	9:50:00	40.2	32.0	10.04	49.1	41.1	9.43	0.76	371.9	84.2	24.6	66.8
2024-03-06	9:51:00	39.1	32.0	10.03	49.1	40.0	9.43	1.43	352.2	101.9	14.3	68.4
2024-03-06	9:52:00	39.1	32.0	10.07	49.1	50.0	9.43	1.52	348.7	104.5	5.9	69.6
2024-03-06	9:53:00	42.9	32.0	10.14	49.3	41.7	9.43	1.43	351.7	92.5	11.5	69.6
2024-03-06	9:54:00	47.6	32.0	10.20	49.4	40.4	9.43	1.68	368.2	80.1	33.8	68.6
2024-03-06	9:55:00	47.6	32.0	10.18	49.4	44.2	9.43	1.82	370.8	63.9	36.3	67.3
2024-03-06	9:56:00	46.7	32.0	10.17	49.4	40.3	9.43	1.52	369.2	75.9	20.9	65.3
2024-03-06	9:57:00	44.3	32.0	10.12	49.3	41.7	9.43	1.03	367.7	73.9	15.5	65.3
2024-03-06	9:58:00	43.0	32.0	10.11	49.2	41.6	9.43	1.63	373.2	63.2	20.6	66.5
2024-03-06	9:59:00	42.5	32.0	10.13	49.2	54.4	9.43	1.63	370.7	68.4	17.2	69.1
2024-03-06	10:00:00	43.5	32.0	10.22	49.4	42.3	9.43	1.48	368.6	73.5	1.0	69.1
2024-03-06	10:01:00	46.3	32.0	10.30	49.5	40.0	9.43	1.53	358.1	71.8	11.5	69.1
2024-03-06	10:02:00	46.1	32.0	10.23	49.5	43.0	9.18	1.33	353.6	84.8	17.9	66.2
2024-03-06	10:03:00	42.7	32.0	10.17	49.4	41.0	9.18	1.56	382.5	103.1	17.9	66.2

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-06	10:04:00	40.4	32.0	10.11	49.2	43.2	9.18	1.36	373.8	85.7	15.8	66.2
2024-03-06	10:05:00	40.0	32.0	10.10	49.2	41.3	9.18	1.93	363.1	73.4	12.0	66.2
2024-03-06	10:06:00	40.0	32.0	10.14	49.2	49.8	9.39	1.30	370.9	84.2	18.2	69.5
2024-03-06	10:07:00	40.1	32.0	10.23	49.4	40.6	9.39	1.87	373.2	67.3	0.0	70.8
2024-03-06	10:08:00	40.5	32.0	10.30	49.5	40.6	9.39	1.40	386.0	64.3	12.4	68.9
2024-03-06	10:09:00	40.6	32.0	10.25	49.5	42.1	9.16	1.98	378.7	83.8	26.3	67.7
2024-03-06	10:10:00	39.8	32.0	10.20	49.4	38.6	9.16	1.77	377.8	82.7	19.4	64.1
2024-03-06	10:11:00	38.7	32.0	10.12	49.2	41.4	9.16	1.02	373.4	95.3	7.8	64.1
2024-03-06	10:12:00	37.7	32.0	10.09	49.1	42.2	9.16	1.56	366.0	95.3	11.1	65.6
2024-03-06	10:13:00	37.1	32.0	10.15	49.1	55.8	9.38	1.32	364.6	72.0	15.4	70.6
2024-03-06	10:14:00	38.1	32.0	10.26	49.4	43.3	9.38	1.37	375.3	76.4	20.3	70.6
2024-03-06	10:15:00	42.3	32.0	10.37	49.6	46.5	9.38	1.21	394.0	76.4	35.1	71.6
2024-03-06	10:16:00	43.0	32.0	10.33	49.6	46.1	9.13	1.76	389.1	69.8	35.1	68.2
2024-03-06	10:17:00	42.2	32.0	10.31	49.6	40.3	9.13	1.43	391.9	72.9	28.5	65.4
2024-03-06	10:18:00	40.0	32.0	10.25	49.4	43.4	9.13	1.06	381.4	76.6	21.3	65.4
2024-03-06	10:19:00	37.1	32.0	10.21	49.4	41.4	9.13	2.15	368.2	76.6	16.2	65.4
2024-03-06	10:20:00	35.1	32.0	10.19	49.3	57.9	9.13	1.61	368.2	100.2	16.2	71.6
2024-03-06	10:21:00	36.3	32.0	10.25	49.5	43.1	9.34	1.83	373.7	84.5	20.3	71.6
2024-03-06	10:22:00	41.4	32.0	10.33	49.7	42.0	9.34	1.60	381.2	73.3	21.2	71.6
2024-03-06	10:23:00	42.3	32.0	10.27	49.6	42.7	9.14	1.93	362.4	72.3	23.3	68.6
2024-03-06	10:24:00	40.6	32.0	10.21	49.5	39.1	9.14	1.86	367.5	75.0	28.1	63.2
2024-03-06	10:25:00	38.7	32.0	10.13	49.3	42.4	9.14	1.45	367.5	66.2	26.1	63.2
2024-03-06	10:26:00	38.7	32.0	10.09	49.2	45.1	9.36	2.06	384.3	66.2	21.1	65.9
2024-03-06	10:27:00	39.0	32.0	10.12	49.2	57.0	9.36	1.33	386.5	77.1	11.5	68.4
2024-03-06	10:28:00	43.5	32.0	10.24	49.5	44.2	9.36	1.51	390.6	81.5	12.9	68.4
2024-03-06	10:29:00	47.3	32.0	10.38	49.6	47.5	9.36	1.25	392.8	88.6	4.0	70.7
2024-03-06	10:30:00	47.2	32.0	10.35	49.6	44.3	9.14	1.63	385.1	88.6	10.4	69.1
2024-03-06	10:31:00	43.7	32.0	10.30	49.6	40.9	9.14	2.06	382.5	86.2	11.1	64.8
2024-03-06	10:32:00	39.9	32.0	10.21	49.4	44.6	9.14	1.37	366.4	98.6	9.3	64.8
2024-03-06	10:33:00	38.7	32.0	10.23	49.4	44.3	9.14	1.63	366.4	98.6	16.9	66.0
2024-03-06	10:34:00	38.2	32.0	10.29	49.4	50.5	9.14	1.46	367.6	98.6	14.6	68.8
2024-03-06	10:35:00	38.4	32.0	10.35	49.5	46.4	9.14	1.47	373.1	102.0	13.8	69.8
2024-03-06	10:36:00	39.4	32.0	10.43	49.8	45.0	9.14	1.57	395.7	107.0	28.3	69.8
2024-03-06	10:37:00	39.7	32.0	10.39	49.8	44.5	9.14	1.25	393.2	75.3	20.5	69.8
2024-03-06	10:38:00	38.7	32.0	10.33	49.7	39.0	9.14	1.87	372.8	75.3	20.7	65.8
2024-03-06	10:39:00	33.3	32.0	10.24	49.5	43.4	9.14	0.91	367.9	72.8	17.1	65.8
2024-03-06	10:40:00	31.4	32.0	10.20	49.3	45.9	9.14	1.91	375.3	100.6	14.7	65.8
2024-03-06	10:41:00	30.9	32.0	10.25	49.2	52.3	9.14	1.75	386.8	118.5	24.7	69.6
2024-03-06	10:42:00	34.8	32.0	10.33	49.5	43.2	9.14	2.06	382.1	101.4	35.4	69.6
2024-03-06	10:43:00	38.2	32.0	10.38	49.7	45.4	9.14	1.87	382.1	90.4	27.7	69.6
2024-03-06	10:44:00	38.9	32.0	10.35	49.7	45.0	9.14	1.28	382.1	98.1	29.5	68.6
2024-03-06	10:45:00	37.6	32.0	10.30	49.6	40.2	9.14	1.97	384.7	114.7	28.3	67.4
2024-03-06	10:46:00	36.2	32.0	10.25	49.4	45.4	9.14	1.33	383.7	105.7	38.6	67.4
2024-03-06	10:47:00	33.9	32.0	10.21	49.4	45.5	9.14	2.27	360.1	93.5	29.0	67.4
2024-03-06	10:48:00	32.3	32.0	10.27	49.4	49.6	9.14	1.98	351.7	79.9	19.3	70.3
2024-03-06	10:49:00	33.3	32.0	10.32	49.6	44.8	9.14	2.13	369.6	64.7	17.5	70.3
2024-03-06	10:50:00	37.2	32.0	10.37	49.8	43.2	9.14	2.02	391.3	56.8	18.8	68.2
2024-03-06	10:51:00	37.4	32.0	10.29	49.8	47.3	9.14	1.90	390.1	73.5	9.1	68.2
2024-03-06	10:52:00	37.0	32.0	10.25	49.7	40.8	9.14	1.90	387.4	76.9	14.0	68.2
2024-03-06	10:53:00	35.3	32.0	10.22	49.5	44.6	9.14	1.67	369.5	69.3	23.7	68.2
2024-03-06	10:54:00	34.0	32.0	10.21	49.5	47.1	9.14	1.57	371.3	83.0	24.1	66.6
2024-03-06	10:55:00	33.4	32.0	10.22	49.5	55.5	9.14	1.56	368.3	83.7	21.1	68.3
2024-03-06	10:56:00	33.7	32.0	10.28	49.7	43.5	9.14	2.01	349.0	53.4	16.0	68.3
2024-03-06	10:57:00	38.3	32.0	10.36	49.8	43.3	9.14	2.17	360.3	78.2	23.0	67.8
2024-03-06	10:58:00	38.6	32.0	10.32	49.8	45.0	9.14	1.07	357.8	82.4	29.0	67.8
2024-03-06	10:59:00	38.6	32.0	10.25	49.7	40.4	9.14	1.83	357.8	80.0	17.3	67.8
2024-03-06	11:00:00	37.7	32.0	10.19	49.5	42.6	9.14	1.15	361.8	68.9	18.7	67.8
2024-03-06	11:01:00	34.9	32.0	10.17	49.4	41.7	9.14	1.82	384.2	67.2	19.7	67.8
2024-03-06	11:02:00	34.2	32.0	10.24	49.3	49.0	9.14	1.71	399.1	79.3	32.6	70.4
2024-03-06	11:03:00	34.3	32.0	10.28	49.5	42.7	9.14	1.60	387.6	79.1	30.7	70.4
2024-03-06	11:04:00	34.7	32.0	10.34	49.7	40.9	9.14	1.67	376.6	52.3	16.0	67.5
2024-03-06	11:05:00	34.6	32.1	10.26	49.6	44.9	9.18	2.17	359.5	104.1	6.4	66.2
2024-03-06	11:06:00	34.1	32.1	10.22	49.5	41.3	9.18	1.72	361.5	104.1	10.1	67.4
2024-03-06	11:07:00	32.4	32.1	10.15	49.3	43.4	9.18	1.48	360.2	120.5	15.6	69.4
2024-03-06	11:08:00	31.7	32.1	10.15	49.3	38.4	9.18	1.56	348.1	107.3	19.6	69.4
2024-03-06	11:09:00	31.5	32.1	10.18	49.3	50.8	9.18	1.40	360.2	90.7	14.3	69.4
2024-03-06	11:10:00	32.4	32.1	10.24	49.5	44.2	9.18	1.97	368.3	79.4	14.3	69.4
2024-03-06	11:11:00	36.1	32.1	10.34	49.6	43.1	9.18	1.48	381.4	91.9	8.9	69.4
2024-03-06	11:12:00	36.4	32.1	10.32	49.6	43.4	9.18	1.48	382.7	75.0	19.8	67.8

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-06	11:13:00	36.3	32.1	10.30	49.5	41.3	9.18	1.72	381.5	71.0	16.6	67.8
2024-03-06	11:14:00	35.6	32.1	10.20	49.4	41.9	9.18	1.67	372.2	82.4	23.7	69.1
2024-03-06	11:15:00	34.7	32.1	10.17	49.3	41.9	9.18	2.17	370.0	76.2	27.9	69.1
2024-03-06	11:16:00	34.6	32.1	10.19	49.3	58.8	9.18	2.02	370.0	87.4	25.4	71.4
2024-03-06	11:17:00	39.0	32.1	10.29	49.6	42.2	9.18	1.77	371.1	84.0	21.5	71.4
2024-03-06	11:18:00	43.5	32.1	10.36	49.8	41.4	9.18	2.18	362.9	84.0	8.4	69.1
2024-03-06	11:19:00	42.5	32.1	10.30	49.8	43.0	9.18	1.97	369.0	95.8	17.5	68.0
2024-03-06	11:20:00	35.2	32.1	10.24	49.6	39.9	9.18	1.63	367.8	98.6	18.4	68.0
2024-03-06	11:21:00	32.6	32.1	10.16	49.4	42.6	9.18	1.75	354.8	99.7	23.6	69.0
2024-03-06	11:22:00	31.3	32.1	10.13	49.3	42.0	9.18	2.17	369.7	89.1	15.6	69.0
2024-03-06	11:23:00	30.5	32.1	10.14	49.3	53.0	9.18	1.82	382.4	82.4	27.1	70.6
2024-03-06	11:24:00	30.8	32.1	10.23	49.5	41.8	9.40	2.06	365.9	74.8	29.3	71.6
2024-03-06	11:25:00	32.8	32.1	10.31	49.7	42.0	9.40	1.60	375.2	85.3	19.6	70.5
2024-03-06	11:26:00	33.2	32.1	10.26	49.7	41.7	9.19	1.72	377.8	95.5	15.1	68.2
2024-03-06	11:27:00	33.1	32.1	10.17	49.6	39.3	9.19	1.82	377.8	110.8	22.7	68.2
2024-03-06	11:28:00	32.5	32.1	10.08	49.4	41.3	9.19	1.52	360.0	112.2	28.8	68.2
2024-03-06	11:29:00	31.9	32.1	10.04	49.3	40.9	9.19	2.21	361.5	88.7	13.2	67.2
2024-03-06	11:30:00	30.5	32.1	10.07	49.3	48.7	9.39	1.36	365.9	92.0	16.9	69.9
2024-03-06	11:31:00	30.5	32.1	10.17	49.5	51.0	9.39	1.90	379.8	106.8	18.8	71.3
2024-03-06	11:32:00	35.8	32.1	10.34	49.6	56.3	9.39	1.41	392.1	104.3	18.0	71.3
2024-03-06	11:33:00	42.8	32.1	10.41	49.7	45.4	9.16	2.17	393.1	86.0	9.6	71.3
2024-03-06	11:34:00	45.3	33.1	10.44	49.7	40.6	9.16	1.76	397.7	86.0	14.2	67.6
2024-03-06	11:35:00	43.1	33.1	10.36	49.6	43.8	9.16	1.37	389.0	87.0	13.2	67.6
2024-03-06	11:36:00	38.0	33.1	10.30	49.5	43.8	9.16	1.90	385.1	84.9	13.6	67.6
2024-03-06	11:37:00	36.4	33.1	10.30	49.4	53.9	9.16	1.75	373.5	72.7	21.7	71.0
2024-03-06	11:38:00	36.4	33.1	10.37	49.6	42.7	9.16	1.75	393.4	82.3	25.0	71.0
2024-03-06	11:39:00	36.5	33.1	10.47	49.8	42.2	9.16	1.72	410.7	90.0	31.9	72.2
2024-03-06	11:40:00	36.2	33.1	10.41	49.8	43.8	9.16	2.10	407.7	85.8	29.6	68.9
2024-03-06	11:41:00	34.5	33.1	10.34	49.7	43.3	9.16	1.78	384.9	106.2	23.7	67.2
2024-03-06	11:42:00	32.2	33.1	10.24	49.4	42.9	9.16	0.91	374.0	88.0	19.7	67.3
2024-03-06	11:43:00	30.4	33.1	10.18	49.4	42.5	9.16	1.67	379.4	81.6	13.6	67.3
2024-03-06	11:44:00	29.6	33.1	10.19	49.3	52.1	9.16	1.93	378.0	100.5	16.3	68.4
2024-03-06	11:45:00	30.0	33.1	10.25	49.4	42.7	9.16	2.13	381.7	95.4	20.7	68.4
2024-03-06	11:46:00	32.6	33.1	10.34	49.7	43.9	9.16	1.97	387.4	65.0	28.8	69.8
2024-03-06	11:47:00	32.7	33.1	10.30	49.7	44.0	9.16	1.75	401.5	65.0	39.0	69.8
2024-03-06	11:48:00	32.5	33.1	10.25	49.6	39.1	9.16	2.01	399.5	61.6	26.0	68.2
2024-03-06	11:49:00	32.2	32.0	10.14	49.5	42.1	9.16	1.93	361.6	75.4	2.4	68.2
2024-03-06	11:50:00	31.4	32.0	10.09	49.3	44.4	9.16	1.81	360.0	56.4	-0.3	68.2
2024-03-06	11:51:00	31.2	32.0	10.10	49.3	46.7	9.37	1.97	362.6	56.4	17.4	68.2
2024-03-06	11:52:00	32.2	32.0	10.16	49.5	43.7	9.37	1.75	378.6	86.6	30.9	68.2
2024-03-06	11:53:00	35.1	32.0	10.26	49.6	41.4	9.37	1.47	377.4	82.8	28.1	68.2
2024-03-06	11:54:00	35.1	32.0	10.22	49.5	44.3	9.37	1.95	362.3	101.8	16.2	68.2
2024-03-06	11:55:00	34.9	32.0	10.17	49.5	39.3	9.37	2.23	367.6	92.9	29.6	66.7
2024-03-06	11:56:00	34.5	32.0	10.11	49.3	44.2	9.37	1.57	369.7	68.3	26.5	66.7
2024-03-06	11:57:00	34.4	32.0	10.10	49.3	43.9	9.37	1.97	384.9	73.5	23.9	66.7
2024-03-06	11:58:00	34.7	32.0	10.17	49.3	48.0	9.37	1.87	384.9	90.3	18.1	69.8
2024-03-06	11:59:00	39.3	32.0	10.21	49.5	43.8	9.37	1.77	381.5	97.6	24.6	69.8
2024-03-06	12:00:00	40.5	32.0	10.28	49.6	41.5	9.37	1.43	379.9	83.5	16.9	69.8
2024-03-06	12:01:00	40.1	32.0	10.23	49.6	45.7	9.37	1.45	363.1	73.3	17.9	68.8
2024-03-06	12:02:00	38.3	32.0	10.18	49.5	39.9	9.37	1.33	354.2	85.1	23.0	66.2
2024-03-06	12:03:00	37.0	32.0	10.13	49.3	45.6	9.37	0.61	353.2	83.7	30.1	66.2
2024-03-06	12:04:00	36.4	32.0	10.12	49.3	46.0	9.37	1.67	353.2	77.4	19.1	66.2
2024-03-06	12:05:00	36.1	32.0	10.18	49.3	57.7	9.37	1.63	353.2	73.1	19.1	69.4
2024-03-06	12:06:00	39.5	32.0	10.28	49.4	43.5	9.37	1.82	370.5	56.3	15.9	70.4
2024-03-06	12:07:00	45.3	32.0	10.38	49.6	43.2	9.37	1.68	386.3	63.6	24.5	69.1
2024-03-06	12:08:00	45.2	32.0	10.36	49.7	45.9	9.13	2.05	383.1	63.6	25.8	69.1
2024-03-06	12:09:00	40.4	32.0	10.33	49.6	39.4	9.13	1.86	382.8	80.4	33.1	66.4
2024-03-06	12:10:00	35.2	32.0	10.26	49.4	42.9	9.13	1.63	381.6	86.3	31.4	66.4
2024-03-06	12:11:00	33.5	32.0	10.24	49.3	40.2	9.13	1.86	381.9	84.1	33.8	66.4
2024-03-06	12:12:00	32.0	32.0	10.24	49.3	47.2	9.13	1.75	383.3	78.6	21.4	70.0
2024-03-06	12:13:00	32.2	32.0	10.31	49.5	44.8	9.13	1.56	398.3	85.4	20.9	68.5
2024-03-06	12:14:00	34.4	32.0	10.39	49.6	38.6	9.13	1.57	399.3	104.6	19.7	70.9
2024-03-06	12:15:00	34.7	32.0	10.33	49.6	43.1	9.13	1.72	391.0	99.2	13.4	70.9
2024-03-06	12:16:00	34.7	32.0	10.29	49.5	42.1	9.13	2.17	388.8	87.2	25.0	62.2
2024-03-06	12:17:00	34.3	32.0	10.19	49.3	43.9	9.13	1.91	367.9	87.2	18.8	67.8
2024-03-06	12:18:00	34.0	32.0	10.18	49.3	40.0	9.13	1.62	366.5	88.4	4.3	67.8
2024-03-06	12:19:00	33.6	32.0	10.23	49.3	53.6	9.13	1.48	378.8	69.1	12.1	70.0
2024-03-06	12:20:00	34.8	32.0	10.31	49.5	47.7	9.34	1.82	380.3	64.7	25.4	70.0
2024-03-06	12:21:00	37.7	32.0	10.40	49.8	43.9	9.34	1.48	381.6	80.5	20.2	66.3

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-06	12:22:00	37.7	32.0	10.39	49.8	44.8	9.13	1.80	381.6	83.7	25.2	66.3
2024-03-06	12:23:00	37.4	32.0	10.35	49.7	43.4	9.13	1.75	393.2	110.4	16.0	66.3
2024-03-06	12:24:00	35.4	32.0	10.28	49.5	42.1	9.13	1.52	389.0	92.2	31.2	67.6
2024-03-06	12:25:00	33.0	32.0	10.24	49.4	40.0	9.13	2.01	389.0	92.2	35.0	69.0
2024-03-06	12:26:00	31.3	32.0	10.24	49.4	55.4	9.13	1.68	376.6	110.4	19.5	72.4
2024-03-06	12:27:00	31.4	32.0	10.34	49.5	44.8	9.13	1.87	365.3	110.5	10.7	72.4
2024-03-06	12:28:00	35.0	32.0	10.44	49.8	44.4	9.13	2.06	402.1	95.7	19.3	71.4
2024-03-06	12:29:00	37.0	32.0	10.43	49.9	44.9	9.13	2.20	400.4	78.8	20.3	67.9
2024-03-06	12:30:00	36.8	32.0	10.40	49.8	43.2	9.13	2.17	398.3	77.0	21.1	67.9
2024-03-06	12:31:00	33.0	32.0	10.31	49.6	41.7	9.13	1.56	398.3	76.5	23.5	67.9
2024-03-06	12:32:00	29.8	32.0	10.25	49.4	38.9	9.13	1.82	370.7	68.8	21.7	67.9
2024-03-06	12:33:00	28.9	32.0	10.21	49.4	51.8	9.13	1.90	359.0	67.7	27.9	71.2
2024-03-06	12:34:00	28.9	32.0	10.29	49.6	42.8	9.13	2.02	363.7	97.9	22.3	71.2
2024-03-06	12:35:00	30.0	32.0	10.37	49.8	44.9	9.13	1.28	391.5	53.2	26.7	68.8
2024-03-06	12:36:00	31.8	32.0	10.37	49.8	47.4	9.13	1.60	376.3	99.6	15.0	67.3
2024-03-06	12:37:00	32.5	32.0	10.40	49.7	43.2	9.13	2.06	387.1	51.4	20.9	67.3
2024-03-06	12:38:00	32.6	32.0	10.38	49.5	45.2	9.13	1.63	381.0	95.1	15.7	68.6
2024-03-06	12:39:00	32.7	32.0	10.36	49.5	41.3	9.13	1.86	368.8	89.4	18.3	68.6
2024-03-06	12:40:00	32.8	32.0	10.35	49.5	55.5	9.13	1.82	363.5	81.5	25.1	69.7
2024-03-06	12:41:00	34.5	32.0	10.38	49.7	44.6	9.13	2.17	363.5	58.2	31.0	69.7
2024-03-06	12:42:00	39.0	32.0	10.41	49.8	45.3	9.13	1.38	376.4	81.0	16.4	66.5
2024-03-06	12:43:00	39.5	32.0	10.34	49.7	46.2	9.13	1.63	397.2	72.6	15.8	65.4
2024-03-06	12:44:00	39.5	32.0	10.30	49.6	44.4	9.13	1.75	391.4	69.7	11.3	65.4
2024-03-06	12:45:00	40.1	32.0	10.23	49.4	45.0	9.13	1.80	367.8	83.6	12.1	65.4
2024-03-06	12:46:00	40.8	32.0	10.19	49.4	43.4	9.13	1.90	365.0	106.3	19.5	65.4
2024-03-06	12:47:00	40.8	32.0	10.19	49.4	65.2	9.13	1.98	364.7	106.4	20.9	67.9
2024-03-06	12:48:00	46.6	32.0	10.28	49.5	46.1	9.13	2.15	372.4	89.7	19.7	67.9
2024-03-06	12:49:00	57.0	32.0	10.40	49.7	47.7	9.13	1.30	393.6	75.2	18.9	69.9
2024-03-06	12:50:00	57.4	32.0	10.40	49.8	44.6	9.13	2.21	391.9	72.4	21.0	66.9
2024-03-06	12:51:00	51.9	32.0	10.39	49.7	39.8	9.13	2.02	393.2	65.4	5.0	66.7
2024-03-06	12:52:00	46.8	32.0	10.32	49.6	44.1	9.13	1.48	384.3	88.0	9.9	66.7
2024-03-06	12:53:00	43.1	32.0	10.28	49.5	43.7	9.13	1.60	384.3	93.4	13.0	64.4
2024-03-06	12:54:00	41.2	32.0	10.31	49.5	63.5	9.13	1.63	394.3	75.9	23.8	67.6
2024-03-06	12:55:00	51.2	32.0	10.41	49.8	39.7	9.13	2.11	407.9	80.3	34.4	67.6
2024-03-06	12:56:00	59.8	32.0	10.50	49.9	43.6	9.13	1.93	397.2	100.5	32.5	68.6
2024-03-06	12:57:00	57.0	32.0	10.42	49.9	47.5	9.13	2.10	395.4	95.7	17.4	66.0
2024-03-06	12:58:00	52.5	32.0	10.39	49.8	38.6	9.13	1.65	394.2	95.7	14.5	62.0
2024-03-06	12:59:00	49.1	32.0	10.34	49.6	43.8	9.13	1.26	378.7	88.7	14.9	63.0
2024-03-06	13:00:00	46.9	32.0	10.32	49.6	41.8	9.13	1.87	367.4	85.0	20.6	63.0
2024-03-06	13:01:00	45.9	32.0	10.39	49.6	69.9	9.13	1.80	365.9	91.2	26.9	68.0
2024-03-06	13:02:00	63.0	32.0	10.48	49.8	43.3	9.13	2.31	363.9	97.9	25.7	68.0
2024-03-06	13:03:00	70.6	32.0	10.55	50.0	46.0	9.13	1.45	374.0	84.0	20.0	69.4
2024-03-06	13:04:00	58.6	32.0	10.48	49.9	46.1	8.92	1.77	379.0	75.3	9.9	66.5
2024-03-06	13:05:00	51.2	32.0	10.43	49.8	39.7	8.92	1.72	381.8	91.0	3.5	64.8
2024-03-06	13:06:00	45.2	31.0	10.34	49.5	45.9	8.92	1.56	380.0	88.5	15.3	64.8
2024-03-06	13:07:00	43.1	31.0	10.28	49.5	46.8	9.14	1.83	380.0	69.3	23.2	64.8
2024-03-06	13:08:00	42.6	31.0	10.34	49.5	59.9	9.14	2.20	389.3	88.1	13.1	66.1
2024-03-06	13:09:00	50.3	31.0	10.40	49.6	45.9	9.14	2.22	394.4	89.3	17.7	66.1
2024-03-06	13:10:00	57.4	31.0	10.50	49.9	52.7	9.14	2.17	385.3	81.0	19.3	67.5
2024-03-06	13:11:00	57.8	29.9	10.48	49.8	52.0	9.14	1.95	384.2	65.4	18.7	67.5
2024-03-06	13:12:00	57.4	29.9	10.52	49.9	44.7	9.14	1.95	420.6	51.3	10.9	64.0
2024-03-06	13:13:00	56.4	29.9	10.47	49.8	46.9	9.14	1.86	411.1	78.8	12.2	64.0
2024-03-06	13:14:00	54.4	29.9	10.46	49.8	43.4	9.14	2.28	401.8	87.5	9.8	64.0
2024-03-06	13:15:00	46.8	28.9	10.50	49.8	54.2	9.14	1.83	413.9	80.2	14.1	68.4
2024-03-06	13:16:00	47.0	28.9	10.55	49.9	47.1	9.14	1.78	415.1	80.0	10.6	68.4
2024-03-06	13:17:00	49.8	28.9	10.67	50.1	41.7	8.94	1.60	415.1	77.9	4.8	61.5
2024-03-06	13:18:00	47.0	28.9	10.61	50.0	47.4	8.94	1.86	399.3	89.4	23.8	61.5
2024-03-06	13:19:00	39.1	28.9	10.48	49.8	41.9	8.94	2.32	401.5	87.7	30.1	61.5
2024-03-06	13:20:00	35.8	28.9	10.43	49.7	49.1	8.94	1.43	400.7	91.8	24.2	62.9
2024-03-06	13:21:00	34.8	28.9	10.43	49.6	52.3	8.94	2.17	383.6	103.6	24.1	64.6
2024-03-06	13:22:00	46.9	28.9	10.53	49.7	115.2	8.94	1.57	383.1	90.9	23.8	67.1
2024-03-06	13:23:00	79.2	28.9	10.62	50.0	43.7	8.94	2.20	417.8	70.3	22.0	67.1
2024-03-06	13:24:00	93.1	28.9	10.65	50.1	40.4	8.94	1.76	407.2	79.1	11.6	65.2
2024-03-06	13:25:00	71.2	28.9	10.47	50.0	43.9	8.94	1.71	387.0	97.5	11.5	65.2
2024-03-06	13:26:00	48.0	28.9	10.35	49.8	37.5	8.94	1.87	379.5	72.9	18.8	63.9
2024-03-06	13:27:00	39.2	28.9	10.24	49.5	41.1	9.14	1.51	364.1	75.9	26.3	63.9
2024-03-06	13:28:00	32.2	28.9	10.15	49.4	45.3	9.14	1.88	352.7	75.9	19.2	63.9
2024-03-06	13:29:00	31.0	28.9	10.14	49.3	50.8	9.14	1.72	347.2	75.9	13.5	65.8
2024-03-06	13:30:00	31.0	28.9	10.22	49.4	42.6	9.38	2.06	359.8	82.1	9.8	65.8

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-06	13:31:00	32.8	28.9	10.31	49.6	42.6	9.38	1.82	367.3	93.6	26.7	65.8

March 06/2024	Main Analyzers										
	CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
Test 2	PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
Units	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
Max	93.1	33.2	10.67	50.1	115.2	9.43	2.52	420.6	120.5	41.3	72.4
Min	28.9	28.9	9.93	49.0	33.4	8.92	0.61	346.0	50.4	-0.3	61.5
Average	39.3	32.1	10.25	49.5	43.9	9.22	1.69	376.2	84.1	19.9	67.8
Variance	63.3	1.0	0.02	0.0	46.6	0.02	0.10	211.2	198.4	63.0	4.6

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-07	8:36:00	52.8	38.8	10.14	49.0	39.6	9.55	1.95	341.8	91.2	18.0	57.6
2024-03-07	8:37:00	53.5	39.8	10.22	49.2	44.9	9.55	1.68	334.5	94.3	19.8	59.0
2024-03-07	8:38:00	62.1	39.8	10.30	49.5	38.0	9.35	1.78	350.1	78.8	17.5	59.0
2024-03-07	8:39:00	66.4	39.8	10.34	49.7	35.0	9.15	1.51	357.8	76.3	7.1	60.0
2024-03-07	8:40:00	65.6	39.8	10.26	49.7	35.9	9.15	1.60	346.8	90.9	7.1	58.8
2024-03-07	8:41:00	61.7	39.8	10.24	49.6	31.7	9.15	1.86	347.2	104.3	5.8	54.1
2024-03-07	8:42:00	58.4	39.8	10.18	49.4	36.8	9.15	2.06	352.5	104.4	17.1	54.1
2024-03-07	8:43:00	56.3	39.8	10.15	49.4	37.3	9.15	1.75	360.6	80.1	10.9	54.1
2024-03-07	8:44:00	55.5	39.8	10.19	49.3	46.8	9.15	1.68	347.1	86.9	11.5	58.9
2024-03-07	8:45:00	63.5	39.8	10.25	49.5	37.9	9.35	2.21	347.1	120.3	18.2	58.9
2024-03-07	8:46:00	71.4	39.8	10.33	49.6	36.8	9.35	1.75	363.0	98.1	25.0	57.4
2024-03-07	8:47:00	71.1	38.7	10.26	49.7	38.2	9.12	2.12	357.9	82.8	18.2	56.0
2024-03-07	8:48:00	62.1	37.6	10.20	49.5	32.4	9.12	1.98	353.2	99.0	16.9	52.5
2024-03-07	8:49:00	55.7	36.6	10.11	49.4	36.5	9.12	1.78	352.1	105.8	18.5	55.1
2024-03-07	8:50:00	53.9	36.6	10.07	49.3	37.9	9.32	1.86	347.9	99.9	21.1	55.1
2024-03-07	8:51:00	54.1	36.6	10.12	49.3	43.5	9.32	2.12	354.1	96.4	16.7	56.2
2024-03-07	8:52:00	63.4	36.6	10.18	49.5	36.5	9.32	2.32	356.2	73.1	14.9	56.2
2024-03-07	8:53:00	67.9	36.6	10.24	49.7	33.3	9.32	2.20	358.9	80.4	14.4	56.2
2024-03-07	8:54:00	67.6	36.6	10.18	49.6	36.5	9.32	1.86	345.3	96.5	14.1	56.2
2024-03-07	8:55:00	60.6	36.6	10.13	49.5	31.3	9.32	1.62	329.2	91.5	18.1	56.2
2024-03-07	8:56:00	54.3	36.6	10.06	49.3	36.4	9.32	1.41	328.0	91.5	20.5	55.2
2024-03-07	8:57:00	51.1	36.6	10.02	49.3	38.6	9.32	1.81	342.1	108.6	12.8	55.2
2024-03-07	8:58:00	50.7	36.6	10.09	49.3	40.5	9.32	1.68	362.9	95.4	11.6	56.7
2024-03-07	8:59:00	55.4	36.6	10.17	49.4	36.5	9.32	1.50	362.5	63.0	16.4	56.7
2024-03-07	9:00:00	59.6	36.6	10.23	49.6	33.0	9.32	1.53	357.8	63.8	14.4	54.9
2024-03-07	9:01:00	59.4	36.6	10.16	49.6	34.2	9.32	2.27	345.7	104.9	16.2	54.9
2024-03-07	9:02:00	57.1	36.6	10.11	49.5	30.3	9.32	1.56	337.9	114.8	9.4	54.9
2024-03-07	9:03:00	54.0	36.6	10.04	49.2	34.2	9.32	1.48	337.9	123.0	7.5	53.8
2024-03-07	9:04:00	51.5	36.6	9.98	49.2	37.6	9.32	2.08	335.3	113.5	9.6	55.7
2024-03-07	9:05:00	50.7	36.6	10.02	49.1	40.5	9.52	2.02	326.7	93.1	1.2	57.1
2024-03-07	9:06:00	53.1	36.6	10.08	49.3	33.9	9.52	2.10	335.7	88.9	7.9	57.1
2024-03-07	9:07:00	56.3	36.6	10.15	49.5	31.1	9.52	2.10	341.7	80.8	23.2	57.1
2024-03-07	9:08:00	55.7	36.6	10.11	49.5	36.1	9.30	1.86	330.2	75.5	29.6	57.1
2024-03-07	9:09:00	51.8	36.6	10.06	49.4	29.4	9.30	1.76	323.3	54.7	20.8	55.4
2024-03-07	9:10:00	49.4	36.6	9.98	49.2	33.6	9.30	1.11	316.0	73.1	2.0	55.4
2024-03-07	9:11:00	47.5	36.6	9.93	49.2	38.5	9.30	1.76	311.7	81.8	11.2	55.4
2024-03-07	9:12:00	47.2	36.6	9.95	49.1	44.3	9.53	1.78	311.7	77.6	6.6	58.0
2024-03-07	9:13:00	53.4	36.6	10.08	49.4	35.5	9.53	2.21	336.8	77.6	4.7	58.0
2024-03-07	9:14:00	57.9	36.6	10.17	49.5	33.5	9.53	1.91	342.1	91.5	8.2	56.9
2024-03-07	9:15:00	58.1	36.6	10.14	49.4	34.5	9.30	1.30	335.7	85.3	28.8	56.9
2024-03-07	9:16:00	54.1	36.6	10.10	49.3	34.6	9.30	1.71	333.8	71.1	23.4	54.4
2024-03-07	9:17:00	52.0	36.6	10.05	49.1	35.7	9.30	1.56	341.8	84.9	24.2	54.4
2024-03-07	9:18:00	51.6	36.6	10.06	49.2	32.2	9.30	2.01	347.3	101.3	22.4	54.4
2024-03-07	9:19:00	50.7	36.6	10.08	49.2	44.4	9.30	1.28	349.4	84.1	6.6	57.8
2024-03-07	9:20:00	50.8	36.6	10.14	49.4	34.4	9.30	1.67	338.2	84.1	-0.1	57.8
2024-03-07	9:21:00	52.1	36.6	10.22	49.6	33.0	9.30	1.60	341.3	73.2	9.6	57.8
2024-03-07	9:22:00	52.3	36.6	10.16	49.5	34.9	9.30	1.87	339.1	68.1	40.7	54.2
2024-03-07	9:23:00	51.0	36.6	10.06	49.5	31.6	9.30	1.75	334.7	75.3	29.5	46.5
2024-03-07	9:24:00	49.7	36.6	9.97	49.2	35.1	9.30	1.76	331.6	98.6	22.6	47.6
2024-03-07	9:25:00	48.8	36.6	9.98	49.1	32.9	9.30	2.06	332.1	104.1	23.6	52.4
2024-03-07	9:26:00	48.3	36.6	10.01	49.1	48.6	9.30	1.13	331.8	98.4	25.6	55.1
2024-03-07	9:27:00	49.8	36.6	10.12	49.4	35.0	9.53	1.77	335.3	92.2	18.5	55.1
2024-03-07	9:28:00	56.3	36.6	10.21	49.6	35.6	9.53	1.75	346.6	87.6	8.8	57.6
2024-03-07	9:29:00	56.5	36.6	10.16	49.6	33.3	9.32	1.77	346.5	75.0	5.9	56.3
2024-03-07	9:30:00	52.9	36.6	10.10	49.5	30.8	9.32	1.67	344.8	67.7	12.3	52.7
2024-03-07	9:31:00	49.8	36.6	10.02	49.2	33.1	9.32	1.60	327.2	85.7	19.2	52.7
2024-03-07	9:32:00	48.8	36.6	9.97	49.1	32.5	9.32	1.98	320.3	107.4	28.5	55.5
2024-03-07	9:33:00	48.0	36.6	9.96	49.1	43.1	9.54	2.51	321.2	90.2	27.3	59.8
2024-03-07	9:34:00	51.1	36.6	10.05	49.3	32.9	9.54	1.71	337.6	90.2	25.1	59.8
2024-03-07	9:35:00	57.3	36.6	10.11	49.5	31.6	9.54	1.62	326.1	69.5	14.0	55.1
2024-03-07	9:36:00	57.7	36.6	10.06	49.4	32.5	9.54	1.96	324.5	56.5	5.8	55.1
2024-03-07	9:37:00	56.0	36.6	10.01	49.3	33.5	9.54	1.82	322.7	81.7	-0.3	55.1
2024-03-07	9:38:00	53.7	36.6	9.94	49.1	34.2	9.54	1.65	328.0	91.0	18.2	55.1
2024-03-07	9:39:00	53.2	36.6	9.95	49.1	32.8	9.54	1.95	328.0	87.1	18.7	56.3
2024-03-07	9:40:00	53.1	36.6	10.00	49.1	39.6	9.54	1.51	326.1	101.3	23.8	56.3
2024-03-07	9:41:00	56.0	36.6	10.05	49.3	33.2	9.54	1.98	328.4	107.6	32.1	56.3
2024-03-07	9:42:00	58.7	37.6	10.09	49.4	32.8	9.54	1.63	328.2	90.7	32.2	54.4

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-07	9:43:00	58.5	37.6	10.02	49.3	34.3	9.54	1.86	328.2	81.8	17.5	54.4
2024-03-07	9:44:00	55.4	37.6	9.95	49.2	33.4	9.54	1.82	311.6	76.9	-0.3	50.6
2024-03-07	9:45:00	51.5	37.6	9.87	49.0	36.2	9.54	1.65	310.5	76.9	-0.3	52.4
2024-03-07	9:46:00	51.4	36.6	9.85	49.0	39.3	9.54	2.13	310.5	89.9	4.8	52.4
2024-03-07	9:47:00	57.5	36.6	9.93	49.1	44.0	9.54	1.78	327.2	93.6	14.8	52.7
2024-03-07	9:48:00	65.1	36.6	10.08	49.4	34.7	9.54	1.80	344.5	95.3	27.6	52.7
2024-03-07	9:49:00	69.3	36.6	10.18	49.7	36.7	9.54	1.78	333.0	67.9	13.7	52.7
2024-03-07	9:50:00	68.3	36.6	10.11	49.6	37.3	9.29	1.47	347.6	55.7	12.7	52.7
2024-03-07	9:51:00	63.9	36.6	10.05	49.4	32.2	9.29	1.63	340.8	76.5	11.7	52.7
2024-03-07	9:52:00	61.1	36.6	9.97	49.2	34.6	9.29	1.52	322.0	90.3	15.5	52.7
2024-03-07	9:53:00	60.3	36.6	9.95	49.1	35.2	9.49	1.86	302.8	69.3	10.1	54.0
2024-03-07	9:54:00	60.2	36.6	10.00	49.2	43.1	9.49	1.83	310.4	80.7	13.4	55.5
2024-03-07	9:55:00	62.1	36.6	10.06	49.4	35.3	9.49	1.33	313.8	79.7	16.7	55.5
2024-03-07	9:56:00	65.2	36.6	10.14	49.6	35.5	9.49	1.52	323.4	77.3	10.2	55.5
2024-03-07	9:57:00	64.2	36.6	10.13	49.5	37.1	9.49	1.95	336.4	77.8	0.1	55.5
2024-03-07	9:58:00	58.3	36.6	10.11	49.4	31.7	9.49	1.71	336.4	59.4	0.1	51.5
2024-03-07	9:59:00	56.2	36.6	10.03	49.3	34.5	9.49	1.30	333.6	64.8	9.0	51.5
2024-03-07	10:00:00	53.3	36.6	9.98	49.2	36.0	9.49	1.57	318.2	81.1	20.3	51.5
2024-03-07	10:01:00	52.1	36.6	10.01	49.2	37.6	9.49	1.43	322.5	82.4	21.4	55.4
2024-03-07	10:02:00	52.4	36.6	10.05	49.4	34.5	9.49	1.71	330.6	90.4	21.4	55.4
2024-03-07	10:03:00	54.8	36.6	10.14	49.5	34.1	9.49	2.10	354.5	78.8	10.2	56.5
2024-03-07	10:04:00	54.7	36.6	10.08	49.4	34.5	9.49	2.02	343.9	83.7	2.4	54.8
2024-03-07	10:05:00	54.3	36.6	10.01	49.3	30.5	9.49	1.93	333.6	91.2	21.9	51.2
2024-03-07	10:06:00	53.6	36.6	9.92	49.1	35.0	9.49	1.52	322.3	87.9	17.9	52.4
2024-03-07	10:07:00	53.3	36.6	9.90	49.0	36.3	9.49	1.91	319.8	85.1	7.6	52.4
2024-03-07	10:08:00	54.2	36.6	9.95	49.1	38.3	9.49	1.33	310.3	90.6	2.5	54.9
2024-03-07	10:09:00	58.3	36.6	10.02	49.3	36.0	9.49	1.83	329.6	81.5	17.0	54.9
2024-03-07	10:10:00	62.5	36.6	10.10	49.4	31.3	9.49	1.78	334.7	75.7	14.4	56.1
2024-03-07	10:11:00	61.6	36.6	10.02	49.3	38.1	9.49	1.43	305.8	67.4	15.4	55.0
2024-03-07	10:12:00	60.3	36.6	9.93	49.2	31.4	9.49	1.62	297.7	79.6	11.1	51.2
2024-03-07	10:13:00	60.1	35.6	9.84	49.1	37.1	9.49	1.75	305.1	81.8	12.5	52.5
2024-03-07	10:14:00	60.0	35.6	9.82	49.0	39.2	9.49	1.86	322.1	84.1	20.1	52.5
2024-03-07	10:15:00	67.7	35.6	9.90	49.0	47.6	9.70	1.76	326.8	72.7	17.7	56.9
2024-03-07	10:16:00	76.5	35.6	10.03	49.3	36.3	9.70	2.01	328.2	67.3	22.8	56.9
2024-03-07	10:17:00	80.6	35.6	10.10	49.4	33.2	9.47	1.45	332.5	67.3	20.1	51.3
2024-03-07	10:18:00	74.9	35.6	10.03	49.4	36.9	9.47	1.41	332.5	70.5	18.4	51.3
2024-03-07	10:19:00	69.2	34.5	10.00	49.3	31.6	9.47	1.78	325.8	72.7	17.4	53.1
2024-03-07	10:20:00	63.7	34.5	9.97	49.1	35.2	9.47	1.43	325.8	80.5	17.8	53.1
2024-03-07	10:21:00	62.0	34.5	9.97	49.1	33.0	9.47	1.33	319.4	92.8	21.2	51.6
2024-03-07	10:22:00	60.0	34.5	10.03	49.2	41.4	9.47	1.65	325.9	108.6	28.9	53.4
2024-03-07	10:23:00	60.6	34.5	10.08	49.4	38.6	9.47	1.91	342.2	91.8	25.1	53.4
2024-03-07	10:24:00	61.3	34.5	10.16	49.5	34.7	9.47	1.60	348.8	98.7	24.4	53.2
2024-03-07	10:25:00	61.2	34.5	10.12	49.5	38.2	9.47	1.86	351.6	96.7	21.4	52.0
2024-03-07	10:26:00	60.8	34.5	10.07	49.4	33.0	9.47	1.65	343.6	105.1	29.0	52.0
2024-03-07	10:27:00	56.9	34.5	10.03	49.2	37.9	9.47	1.71	330.9	90.8	26.4	53.4
2024-03-07	10:28:00	55.9	34.5	10.01	49.2	42.3	9.47	1.87	327.7	68.2	30.4	53.4
2024-03-07	10:29:00	55.9	34.5	10.04	49.2	51.1	9.47	2.02	323.5	66.5	27.3	53.4
2024-03-07	10:30:00	60.7	34.5	10.11	49.4	34.5	9.47	2.05	327.6	70.6	28.8	53.4
2024-03-07	10:31:00	66.2	34.5	10.22	49.6	35.5	9.47	1.90	330.3	111.1	10.5	55.3
2024-03-07	10:32:00	65.9	34.5	10.17	49.6	38.1	9.24	1.87	330.3	96.7	15.3	53.5
2024-03-07	10:33:00	64.0	34.5	10.14	49.4	35.3	9.24	1.63	330.3	92.0	15.3	50.2
2024-03-07	10:34:00	59.7	34.5	10.07	49.2	35.9	9.24	1.37	327.3	74.5	8.3	50.2
2024-03-07	10:35:00	56.7	34.5	10.03	49.2	35.3	9.24	1.78	320.3	93.9	10.6	50.2
2024-03-07	10:36:00	55.9	34.5	10.03	49.2	46.5	9.45	2.06	322.7	99.9	22.5	52.7
2024-03-07	10:37:00	59.6	34.5	10.11	49.4	35.1	9.45	1.82	339.6	100.5	16.9	52.7
2024-03-07	10:38:00	64.0	34.5	10.19	49.6	35.7	9.45	2.36	346.5	109.5	7.4	52.7
2024-03-07	10:39:00	63.9	33.3	10.11	49.5	34.6	9.45	1.72	323.9	91.6	7.5	50.1
2024-03-07	10:40:00	62.8	33.3	10.04	49.4	35.4	9.45	1.71	321.2	55.9	12.4	50.1
2024-03-07	10:41:00	61.8	33.3	9.96	49.2	38.0	9.45	1.25	301.5	67.2	18.9	50.1
2024-03-07	10:42:00	61.2	32.3	9.94	49.2	35.7	9.45	1.65	302.8	67.2	16.5	50.1
2024-03-07	10:43:00	60.9	32.3	9.97	49.2	45.7	9.45	1.86	306.6	84.9	13.7	52.2
2024-03-07	10:44:00	64.5	32.3	10.07	49.4	35.0	9.45	2.06	320.9	66.6	10.8	52.2
2024-03-07	10:45:00	69.8	32.3	10.13	49.6	33.3	9.45	1.82	325.2	84.6	12.8	51.5
2024-03-07	10:46:00	68.4	32.3	10.07	49.5	35.3	9.45	2.12	329.7	91.9	12.5	51.5
2024-03-07	10:47:00	64.3	32.3	9.97	49.4	36.3	9.45	1.72	310.1	116.9	10.8	50.0
2024-03-07	10:48:00	61.7	32.3	9.89	49.2	37.5	9.45	1.72	301.7	83.1	9.1	50.0
2024-03-07	10:49:00	61.1	32.3	9.88	49.1	36.4	9.45	1.91	300.7	71.8	10.6	50.0

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-07	10:50:00	61.0	32.3	9.92	49.2	45.9	9.45	1.60	319.4	90.2	22.9	51.7
2024-03-07	10:51:00	66.7	32.3	10.02	49.3	34.9	9.45	1.80	329.9	102.6	17.6	52.8
2024-03-07	10:52:00	69.7	32.3	10.10	49.5	34.2	9.45	1.95	327.9	88.6	5.4	52.8
2024-03-07	10:53:00	67.9	32.3	10.03	49.5	36.8	9.45	1.67	321.6	68.1	21.8	49.8
2024-03-07	10:54:00	62.8	32.3	10.00	49.4	33.4	9.45	1.78	331.7	58.1	28.2	49.8
2024-03-07	10:55:00	59.5	32.3	9.89	49.2	35.2	9.45	1.40	320.2	73.0	10.7	49.8
2024-03-07	10:56:00	57.6	32.3	9.86	49.1	36.1	9.45	1.53	315.7	76.4	11.0	49.8
2024-03-07	10:57:00	57.4	32.3	9.90	49.1	45.7	9.65	1.63	309.4	70.0	18.4	53.8
2024-03-07	10:58:00	67.2	32.3	9.97	49.3	37.4	9.65	1.86	307.5	66.9	16.6	53.8
2024-03-07	10:59:00	76.4	32.3	10.06	49.5	37.5	9.65	1.98	318.6	56.8	18.2	53.8
2024-03-07	11:00:00	75.8	32.3	10.05	49.4	39.7	9.41	1.65	338.2	40.7	13.1	52.2
2024-03-07	11:01:00	72.3	32.3	10.01	49.4	34.1	9.41	1.53	334.1	46.5	8.6	48.7
2024-03-07	11:02:00	69.3	32.3	9.92	49.2	38.4	9.41	1.90	332.2	48.3	8.4	49.8
2024-03-07	11:03:00	67.4	32.3	9.92	49.1	36.8	9.41	1.91	335.3	66.0	18.8	49.8
2024-03-07	11:04:00	65.6	31.3	9.95	49.1	42.8	9.41	1.32	330.1	72.4	30.3	51.3
2024-03-07	11:05:00	65.9	31.3	10.01	49.3	37.1	9.41	1.61	307.8	75.6	19.5	51.3
2024-03-07	11:06:00	67.4	31.3	10.07	49.5	36.7	9.41	1.71	302.8	85.9	20.1	51.3
2024-03-07	11:07:00	67.7	31.3	10.01	49.4	38.3	9.41	1.43	302.8	98.4	17.9	49.8
2024-03-07	11:08:00	68.1	31.3	9.96	49.4	33.1	9.41	1.78	307.4	97.0	11.9	48.2
2024-03-07	11:09:00	67.9	31.3	9.90	49.2	36.9	9.41	1.47	305.6	99.9	1.9	48.2
2024-03-07	11:10:00	65.4	31.3	9.87	49.2	35.9	9.41	1.93	309.5	92.0	20.7	48.2
2024-03-07	11:11:00	63.6	31.3	9.90	49.2	42.0	9.63	1.56	323.6	75.6	29.1	50.4
2024-03-07	11:12:00	67.0	31.3	10.00	49.3	38.3	9.63	1.92	327.4	67.1	16.8	52.2
2024-03-07	11:13:00	71.9	31.3	10.10	49.5	36.3	9.63	1.43	332.8	67.1	16.3	53.4
2024-03-07	11:14:00	71.6	31.3	10.06	49.4	40.1	9.42	2.05	334.3	71.0	29.5	52.2
2024-03-07	11:15:00	68.8	31.3	9.98	49.3	34.0	9.42	1.77	328.0	80.5	18.9	48.5
2024-03-07	11:16:00	66.4	31.3	9.92	49.2	39.2	9.42	1.97	325.1	84.2	12.2	48.5
2024-03-07	11:17:00	65.9	31.3	9.93	49.2	40.2	9.42	1.93	335.5	88.8	16.8	48.5
2024-03-07	11:18:00	65.9	31.3	10.02	49.2	46.9	9.42	1.58	338.4	99.0	25.5	51.9
2024-03-07	11:19:00	72.1	31.3	10.12	49.5	38.0	9.42	1.95	343.1	89.0	29.1	52.9
2024-03-07	11:20:00	76.0	31.3	10.20	49.7	36.6	9.42	1.63	357.6	49.0	28.1	52.9
2024-03-07	11:21:00	73.7	31.3	10.13	49.6	37.8	9.42	1.87	354.2	71.5	20.3	50.5
2024-03-07	11:22:00	67.6	31.3	10.07	49.4	34.4	9.42	1.68	335.7	88.9	15.3	47.2
2024-03-07	11:23:00	63.6	31.3	9.95	49.2	37.0	9.42	1.48	313.9	102.4	17.6	47.2
2024-03-07	11:24:00	61.9	31.3	9.92	49.1	37.2	9.42	1.82	308.0	106.7	27.8	49.0
2024-03-07	11:25:00	61.7	31.3	9.95	49.1	42.2	9.42	1.71	308.0	106.7	21.2	52.5
2024-03-07	11:26:00	62.8	31.3	10.03	49.3	39.0	9.63	1.77	324.2	102.5	11.9	52.5
2024-03-07	11:27:00	66.2	31.3	10.14	49.6	34.9	9.63	2.10	339.1	66.7	4.8	50.0
2024-03-07	11:28:00	66.2	31.3	10.11	49.5	36.4	9.42	1.75	339.1	65.5	10.8	50.0
2024-03-07	11:29:00	64.0	31.3	10.04	49.4	33.5	9.42	1.60	336.7	75.4	10.6	47.1
2024-03-07	11:30:00	59.4	31.3	9.92	49.2	36.5	9.42	1.65	320.0	105.5	11.9	47.1
2024-03-07	11:31:00	56.2	30.2	9.88	49.1	40.2	9.42	1.71	308.8	93.5	15.1	49.2
2024-03-07	11:32:00	56.2	30.2	9.92	49.1	42.7	9.65	1.22	323.0	65.7	17.0	49.2
2024-03-07	11:33:00	62.4	30.2	10.00	49.3	39.1	9.65	1.41	344.8	46.1	11.9	49.2
2024-03-07	11:34:00	65.3	30.2	10.11	49.6	35.3	9.65	1.45	345.8	49.1	12.7	48.8
2024-03-07	11:35:00	65.4	29.2	10.09	49.6	42.3	9.44	1.32	333.1	60.0	15.2	48.8
2024-03-07	11:36:00	65.4	29.2	10.08	49.5	34.7	9.44	1.57	343.0	48.3	19.0	48.8
2024-03-07	11:37:00	65.4	29.2	10.04	49.5	36.5	9.44	1.73	345.9	48.3	21.0	48.8
2024-03-07	11:38:00	65.1	29.2	9.97	49.4	41.5	9.44	1.78	319.2	48.1	-0.6	47.8
2024-03-07	11:39:00	64.4	29.2	10.02	49.4	46.6	9.44	1.83	330.4	68.7	2.8	47.8
2024-03-07	11:40:00	71.1	29.2	10.08	49.6	39.0	9.44	2.25	331.5	59.3	19.9	49.1
2024-03-07	11:41:00	79.1	29.2	10.14	49.7	34.2	9.44	1.86	342.3	75.1	17.7	49.1
2024-03-07	11:42:00	78.8	29.2	10.08	49.6	48.6	9.44	1.76	341.1	46.2	12.3	56.1
2024-03-07	11:43:00	74.3	29.2	10.02	49.4	33.2	9.44	1.32	327.7	40.7	10.8	55.0
2024-03-07	11:44:00	71.6	29.2	9.97	49.3	39.0	9.44	1.48	317.6	69.8	19.6	55.0
2024-03-07	11:45:00	69.4	29.2	9.93	49.3	42.1	9.44	1.83	321.9	81.9	14.7	47.3
2024-03-07	11:46:00	68.5	29.2	10.00	49.3	42.4	9.44	1.71	323.1	84.1	17.9	48.7
2024-03-07	11:47:00	69.1	29.2	10.04	49.4	34.8	9.44	1.83	334.3	82.6	21.1	48.7
2024-03-07	11:48:00	73.9	29.2	10.07	49.5	33.6	9.44	1.78	339.2	101.4	21.1	48.7
2024-03-07	11:49:00	72.5	29.2	10.01	49.5	38.8	9.44	2.15	338.0	74.2	21.1	45.0
2024-03-07	11:50:00	65.7	29.2	9.95	49.4	32.9	9.44	1.82	338.2	58.1	12.6	45.0
2024-03-07	11:51:00	62.8	29.2	9.90	49.2	37.1	9.44	1.56	334.4	70.9	9.8	45.0
2024-03-07	11:52:00	61.3	29.2	9.88	49.1	36.4	9.64	1.65	334.4	70.9	10.5	45.0
2024-03-07	11:53:00	61.8	29.2	9.91	49.2	51.7	9.64	1.98	341.2	82.0	23.8	48.1
2024-03-07	11:54:00	81.8	29.2	10.07	49.4	41.1	9.64	1.65	342.6	85.1	25.4	48.1
2024-03-07	11:55:00	84.1	29.2	10.13	49.7	36.0	9.64	1.40	332.7	97.2	21.9	46.9
2024-03-07	11:56:00	81.1	28.1	10.06	49.7	38.6	9.43	1.47	321.3	71.1	16.6	45.2

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-07	11:57:00	73.3	28.1	10.00	49.6	35.7	9.43	1.60	321.3	56.3	7.0	45.2
2024-03-07	11:58:00	66.6	28.1	9.92	49.3	37.4	9.43	1.52	321.3	63.4	7.0	45.2
2024-03-07	11:59:00	64.9	28.1	9.90	49.3	36.1	9.43	1.82	324.8	73.5	19.0	45.2
2024-03-07	12:00:00	64.6	28.1	9.93	49.3	49.8	9.64	1.78	324.8	81.8	18.7	47.0
2024-03-07	12:01:00	71.0	28.1	10.03	49.5	37.6	9.64	1.87	342.5	88.5	18.5	47.0
2024-03-07	12:02:00	76.9	28.1	10.09	49.7	36.2	9.64	1.48	348.4	93.0	14.3	47.0
2024-03-07	12:03:00	77.2	28.1	10.04	49.6	36.6	9.43	1.56	344.0	35.9	17.4	45.6
2024-03-07	12:04:00	73.6	28.1	9.98	49.5	34.5	9.43	1.77	339.6	96.3	18.3	45.6
2024-03-07	12:05:00	69.8	28.1	9.89	49.3	35.7	9.43	1.47	338.1	35.7	16.3	45.6
2024-03-07	12:06:00	69.0	28.1	9.86	49.2	36.5	9.43	1.78	325.7	74.9	24.7	45.6
2024-03-07	12:07:00	68.5	28.1	9.86	49.2	52.5	9.65	1.68	319.0	76.7	16.2	47.3
2024-03-07	12:08:00	73.2	28.1	9.95	49.4	36.2	9.65	1.71	325.0	76.4	25.6	47.3
2024-03-07	12:09:00	81.9	28.1	10.07	49.6	38.7	9.65	1.48	346.6	61.0	28.2	46.9
2024-03-07	12:10:00	83.6	28.1	10.04	49.6	38.2	9.65	1.57	342.7	67.8	23.2	45.8
2024-03-07	12:11:00	79.9	28.1	10.02	49.5	35.6	9.65	1.13	349.4	66.9	26.9	42.7
2024-03-07	12:12:00	71.9	28.1	9.96	49.3	40.9	9.65	0.98	348.1	65.1	40.6	44.1
2024-03-07	12:13:00	71.0	28.1	9.95	49.2	39.1	9.65	1.97	348.1	68.6	38.8	45.4
2024-03-07	12:14:00	71.4	28.1	10.01	49.2	58.5	9.65	1.30	336.8	69.0	27.5	49.4
2024-03-07	12:15:00	83.8	28.1	10.08	49.4	38.4	9.65	1.57	345.5	64.5	25.5	49.4
2024-03-07	12:16:00	91.8	28.1	10.14	49.5	39.4	9.65	1.56	350.9	63.3	12.9	47.6
2024-03-07	12:17:00	90.5	28.1	10.08	49.5	42.9	9.41	1.31	336.9	70.4	5.5	45.5
2024-03-07	12:18:00	86.0	28.1	10.05	49.4	37.2	9.41	1.31	315.5	81.3	8.9	46.6
2024-03-07	12:19:00	81.8	28.1	9.96	49.2	40.0	9.41	0.93	308.0	80.4	11.3	46.6
2024-03-07	12:20:00	77.4	28.1	9.93	49.2	40.0	9.41	1.76	316.7	70.0	5.2	44.9
2024-03-07	12:21:00	76.6	28.1	9.96	49.2	52.0	9.63	1.41	337.1	86.2	13.5	44.9
2024-03-07	12:22:00	80.2	28.1	10.02	49.4	39.3	9.63	1.63	341.7	75.5	11.1	44.9
2024-03-07	12:23:00	82.8	28.1	10.09	49.6	38.4	9.63	1.78	353.8	67.2	26.0	44.9
2024-03-07	12:24:00	80.3	27.1	10.02	49.5	40.8	9.63	1.75	333.1	49.4	25.0	42.9
2024-03-07	12:25:00	77.9	27.1	9.97	49.4	35.1	9.63	1.30	323.8	59.6	21.6	42.9
2024-03-07	12:26:00	76.7	27.1	9.92	49.2	41.2	9.63	1.17	324.0	63.0	28.0	42.9
2024-03-07	12:27:00	76.3	27.1	9.91	49.2	38.8	9.63	1.63	330.8	60.2	28.1	42.9
2024-03-07	12:28:00	76.2	27.1	9.93	49.2	56.8	9.63	1.56	332.3	73.5	20.1	46.6
2024-03-07	12:29:00	83.2	27.1	9.98	49.4	40.1	9.63	1.43	333.7	68.2	12.6	46.6
2024-03-07	12:30:00	88.1	27.1	10.12	49.5	39.7	9.63	1.48	333.7	57.6	-0.1	46.6
2024-03-07	12:31:00	85.5	27.1	10.10	49.5	42.6	9.63	1.55	327.9	63.1	7.0	44.4
2024-03-07	12:32:00	78.5	27.1	10.08	49.4	34.1	9.63	1.43	333.8	48.6	12.8	42.0
2024-03-07	12:33:00	74.4	27.1	10.00	49.3	37.3	9.63	0.98	336.2	70.9	24.1	42.0
2024-03-07	12:34:00	72.3	27.1	9.95	49.1	43.3	9.63	1.82	329.7	109.3	17.3	43.5
2024-03-07	12:35:00	72.4	27.1	10.02	49.1	60.9	9.63	1.21	325.0	112.8	10.5	44.7
2024-03-07	12:36:00	89.7	27.1	10.10	49.4	43.6	9.63	1.37	326.3	74.0	6.2	46.0
2024-03-07	12:37:00	99.8	27.1	10.18	49.6	39.6	9.63	1.17	352.2	66.4	8.9	46.0
2024-03-07	12:38:00	96.1	27.1	10.10	49.5	44.6	9.39	1.41	348.9	64.5	11.0	44.7
2024-03-07	12:39:00	90.4	27.1	10.07	49.4	34.1	9.39	1.61	335.7	72.8	19.4	41.5
2024-03-07	12:40:00	86.2	27.1	10.04	49.2	51.7	9.39	1.13	325.4	83.6	13.4	41.5
2024-03-07	12:41:00	85.0	27.1	10.05	49.2	42.1	9.39	1.60	338.8	82.5	23.6	49.5
2024-03-07	12:42:00	88.8	27.1	10.11	49.2	55.1	9.39	1.60	352.3	82.1	31.5	52.0
2024-03-07	12:43:00	102.9	27.1	10.15	49.4	41.0	9.39	1.71	353.4	82.1	18.3	44.4
2024-03-07	12:44:00	109.1	27.1	10.21	49.6	43.3	9.39	1.30	342.7	75.2	23.1	45.4
2024-03-07	12:45:00	107.4	27.1	10.15	49.5	45.4	9.39	1.71	341.7	89.5	11.2	45.4
2024-03-07	12:46:00	98.5	27.1	10.11	49.5	34.6	9.39	2.02	347.4	84.9	18.9	42.9
2024-03-07	12:47:00	92.1	27.1	10.06	49.3	44.4	9.39	1.10	343.6	67.7	20.2	42.9
2024-03-07	12:48:00	87.3	27.1	10.04	49.3	55.0	9.39	1.87	334.7	67.3	3.9	42.9
2024-03-07	12:49:00	89.2	27.1	10.11	49.3	76.9	9.39	1.67	336.9	65.1	10.1	45.3
2024-03-07	12:50:00	105.6	27.1	10.21	49.6	44.7	9.39	1.57	354.5	33.7	16.3	45.3
2024-03-07	12:51:00	111.0	27.1	10.31	49.8	42.2	9.39	2.20	366.4	49.3	17.6	42.8
2024-03-07	12:52:00	99.8	27.1	10.26	49.8	45.7	9.39	1.87	354.4	64.7	15.3	42.8
2024-03-07	12:53:00	91.6	26.1	10.23	49.7	35.0	9.39	1.26	347.4	50.3	22.7	42.8
2024-03-07	12:54:00	82.1	26.1	10.17	49.5	38.2	9.39	1.10	344.0	51.8	30.5	42.8
2024-03-07	12:55:00	74.0	26.1	10.10	49.4	43.2	9.39	1.82	342.8	83.4	18.0	42.8
2024-03-07	12:56:00	71.0	26.1	10.12	49.4	49.2	9.39	1.56	344.6	91.4	11.5	42.8
2024-03-07	12:57:00	75.5	26.1	10.18	49.5	45.6	9.39	1.67	346.5	87.4	19.6	44.7
2024-03-07	12:58:00	79.8	26.1	10.25	49.7	47.3	9.39	1.77	360.9	87.4	26.8	44.7
2024-03-07	12:59:00	80.5	26.1	10.22	49.7	47.4	9.39	1.43	357.7	78.4	31.0	44.7
2024-03-07	13:00:00	79.6	26.1	10.19	49.6	36.7	9.39	0.92	344.8	64.5	23.6	43.7
2024-03-07	13:01:00	78.2	26.1	10.17	49.5	46.6	9.39	1.80	350.4	62.2	10.3	43.7
2024-03-07	13:02:00	77.2	26.1	10.14	49.5	45.1	9.39	1.67	366.7	46.7	27.1	43.7
2024-03-07	13:03:00	76.8	26.1	10.13	49.5	49.3	9.39	1.90	375.1	60.0	27.6	43.7

		Main Analyzers										
		CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
		PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
$Date	$Time	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
2024-03-07	13:04:00	78.2	26.1	10.20	49.7	41.9	9.39	1.75	356.4	71.3	12.8	43.7
2024-03-07	13:05:00	78.6	26.1	10.25	49.8	37.7	9.39	1.68	338.0	63.3	16.9	43.7
2024-03-07	13:06:00	77.1	26.1	10.20	49.7	41.5	9.39	1.45	335.1	61.8	14.7	47.5
2024-03-07	13:07:00	73.6	26.1	10.15	49.6	34.9	9.39	2.18	346.8	84.3	14.3	47.5
2024-03-07	13:08:00	71.0	26.1	10.09	49.4	40.3	9.39	1.28	358.9	104.7	30.1	42.7
2024-03-07	13:09:00	68.8	26.1	10.09	49.3	36.4	9.39	1.45	344.9	128.1	32.4	42.7
2024-03-07	13:10:00	62.8	26.1	10.08	49.3	53.4	9.39	1.75	334.4	112.5	17.6	47.6
2024-03-07	13:11:00	62.8	26.1	10.15	49.5	37.0	9.39	1.43	332.8	86.5	5.2	47.6
2024-03-07	13:12:00	63.4	26.1	10.19	49.7	40.1	9.39	1.60	349.3	67.5	9.4	46.6
2024-03-07	13:13:00	63.4	26.1	10.15	49.6	38.1	9.39	1.51	334.6	69.7	6.4	43.7
2024-03-07	13:14:00	62.3	26.1	10.10	49.5	38.2	9.39	2.13	326.0	69.7	11.1	43.7
2024-03-07	13:15:00	61.9	26.1	10.02	49.3	42.0	9.39	1.25	324.1	73.3	6.4	43.7
2024-03-07	13:16:00	61.9	26.1	10.00	49.3	39.1	9.39	1.21	324.1	76.5	19.7	43.7
2024-03-07	13:17:00	64.0	26.1	10.05	49.3	65.0	9.39	1.52	330.2	62.3	26.9	46.5
2024-03-07	13:18:00	75.2	26.1	10.17	49.6	41.0	9.39	1.56	343.8	62.3	23.6	47.6
2024-03-07	13:19:00	84.4	26.1	10.30	49.8	44.5	9.39	1.13	344.9	65.7	20.8	47.6
2024-03-07	13:20:00	83.4	26.1	10.30	49.8	39.3	9.39	1.33	345.9	82.9	15.6	44.1
2024-03-07	13:21:00	75.0	26.1	10.23	49.7	41.2	9.39	1.33	360.7	73.3	22.8	44.1
2024-03-07	13:22:00	67.6	26.1	10.13	49.5	43.3	9.39	1.25	348.3	72.3	22.7	45.4
2024-03-07	13:23:00	66.0	26.1	10.14	49.4	38.9	9.39	1.33	355.6	80.0	23.6	45.4
2024-03-07	13:24:00	66.0	26.1	10.17	49.4	60.0	9.39	1.60	346.3	78.9	21.5	45.4
2024-03-07	13:25:00	74.9	26.1	10.24	49.6	40.3	9.39	1.33	359.2	72.0	13.4	45.4
2024-03-07	13:26:00	78.9	26.1	10.32	49.8	45.7	9.39	1.67	352.4	64.4	24.1	47.5
2024-03-07	13:27:00	79.0	26.1	10.29	49.8	40.6	9.39	1.66	352.2	70.5	29.3	46.5
2024-03-07	13:28:00	77.2	26.1	10.26	49.8	36.3	9.39	1.63	339.5	75.9	33.1	43.9
2024-03-07	13:29:00	71.3	26.1	10.20	49.6	40.8	9.39	1.35	339.5	87.0	17.8	43.9
2024-03-07	13:30:00	64.4	26.1	10.19	49.5	37.4	9.39	1.57	356.9	87.0	18.9	43.9
2024-03-07	13:31:00	63.4	26.1	10.19	49.5	63.1	9.39	1.41	356.9	74.0	12.0	46.1
2024-03-07	13:32:00	73.6	26.1	10.25	49.6	41.9	9.39	1.80	354.0	76.9	16.9	49.3
2024-03-07	13:33:00	77.8	26.1	10.35	49.8	38.7	9.39	1.41	348.2	84.2	24.8	48.2
2024-03-07	13:34:00	75.0	26.1	10.32	49.8	55.6	9.19	1.37	350.1	83.4	19.7	45.7
2024-03-07	13:35:00	72.6	26.1	10.34	49.8	39.5	9.19	1.37	349.0	83.4	2.5	44.2
2024-03-07	13:36:00	72.5	26.1	10.32	49.7	40.5	9.19	1.33	350.9	80.4	3.1	44.2
2024-03-07	13:37:00	71.7	26.1	10.30	49.7	40.3	9.19	1.76	363.9	55.9	25.2	45.3
2024-03-07	13:38:00	65.7	26.1	10.30	49.7	60.1	9.19	1.52	363.9	54.3	18.5	48.3
2024-03-07	13:39:00	68.0	26.1	10.38	49.9	43.2	9.19	1.83	364.9	86.3	17.0	48.3
2024-03-07	13:40:00	75.6	26.1	10.45	50.0	42.9	9.19	1.83	353.1	88.6	21.4	49.6
2024-03-07	13:41:00	73.3	26.1	10.38	49.9	42.0	9.19	2.11	337.2	74.4	1.3	46.1
2024-03-07	13:42:00	66.5	26.1	10.28	49.9	37.3	9.19	1.60	337.2	72.7	15.4	41.6
2024-03-07	13:43:00	64.1	26.1	10.17	49.7	45.5	9.19	1.78	340.5	66.5	27.5	43.4
2024-03-07	13:44:00	62.6	26.1	10.17	49.6	41.6	9.19	1.75	337.2	66.5	23.7	43.4
2024-03-07	13:45:00	62.6	26.1	10.26	49.7	50.6	9.19	1.67	343.6	90.4	26.8	47.2
2024-03-07	13:46:00	67.0	26.1	10.35	49.9	37.5	9.19	2.01	362.1	91.4	26.0	49.6
2024-03-07	13:47:00	68.2	26.1	10.41	50.0	38.6	9.19	1.83	356.7	91.4	27.5	48.2
2024-03-07	13:48:00	61.3	26.1	10.28	49.9	37.9	9.19	1.68	348.9	81.5	29.7	46.9

March 07/2024	Main Analyzers										
	CO	HCl	CO2	H2O	THC	O2	Opacity	SO2	NO	NO2	HF
Test 3	PPM	PPM	%	%	PPM	%	%	PPM	PPM	PPM	PPM
Units	AT-205-1NEW	AT-213A-1NEW	AT-213B-1NEW	AT-213CB	AT-259-1NEW	AT-261A-1NEW	AT-263	AT-264-1NEW	AT-NO	AT-NO2	AT-HF
Max	111.0	39.8	10.45	50.0	76.9	9.70	2.51	375.1	128.1	40.7	60.0
Min	47.2	26.1	9.82	49.0	29.4	9.12	0.92	297.7	33.7	-0.6	41.5
Average	67.1	31.7	10.08	49.4	39.0	9.43	1.68	335.0	78.9	17.0	50.1
Variance	139.4	19.2	0.01	0.0	38.6	0.02	0.07	220.0	274.7	64.1	21.9

Leachate Totals for stack test

Date		Time	Secondary	Quench
	2024-03-05	9:36	14340	13994
		15:12	22473	21970
Total (L)			8133	7976
Average flow rate(L/min)			24.2	23.7
	2024-03-06	8:55	13133	13052
		13:31	19946	19833
Total (L)			6813	6781
Average flow rate(L/min)			24.7	24.6
	2024-03-07	8:36	12393	10677
		13:48	20091	18331
Total (L)			7698	7654
Average flow rate(L/min)			24.7	24.5

CH Lambton

Volatile Analysis
DAF Leachate
Y24-0803
Trials completed; March 5/24
Reported: March 5/24

Compound	March 5/24 0100 Raw ug/g	March 5/24 0100 55C 25LPM ug/g
Acetone	155	93.4
Methyl Ethyl Ketone	34.7	18.0
Toluene	ND	ND
Total xylenes	ND	ND
Phenol	5.7	4.8

Kevin Lough, Instrument Specialist

#N/A

Clean Harbors DAF

Volatile Analysis
DAF Leachate
Y24-0803
Trials completed; March 5/24
Reported: March 5/24

Compound	Raw Conc. ug/g	Effluent Conc. ug/g
Acetone	155	93.4
Isopropanol	54.6	35.2
Acrylonitrile	ND	ND
1,1-Dichloroethylene	ND	ND
Methyl Ethyl Ketone	34.7	18.0
Hexane	ND	ND
Ethyl Acetate	ND	ND
Chloroform	ND	ND
1,2-Dichloroethane	ND	ND
1,1,1-Trichloroethane	ND	ND
Benzene	ND	ND
Carbon Tetrachloride	ND	ND
p-Dioxane	ND	ND
Trichloroethylene	ND	ND
n-Heptane	ND	ND
Methyl Isobutyl Ketone	ND	ND
1,1,2-Trichloroethane	ND	ND
Toluene	ND	ND
n-Butyl Acetate	ND	ND
Tetrachloroethylene	ND	ND
Chlorobenzene	ND	ND
Ethylbenzene	ND	ND
p- & m- Xylene	ND	ND
Styrene	ND	ND
o-Xylene	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND
1,3,5-Trimethylbenzene	ND	ND
1,3-Dichlorobenzene	ND	ND
1,4-Dichlorobenzene	ND	ND
1,2-Dichlorobenzene	ND	ND
1,3,5-Trichlorobenzene	ND	ND
1,2,4-Trichlorobenzene	ND	ND
1,2,3-Trichlorobenzene	ND	ND
Naphthalene	ND	ND

Kevin Lough, Instrument Specialist

#N/A

Customer

Volatile Analysis
DAF Leachate
Y24-0803
Trials completed;	March 5/24
Reported:	March 5/24

Compound	Raw Conc. ug/g	Effluent Conc. ug/g
Acenaphthene	ND	ND
Anthracene	ND	ND
Benzo(a)anthracene	ND	ND
Benzo(a)pyrene	ND	ND
Benzo(g,h,i)perylene	ND	ND
Benzo(b)fluoranthene	ND	ND
Benzo(k)fluoranthene	ND	ND
Bis(2-Ethylhexyl)phthalate	ND	ND
Chrysene	ND	ND
Dibenz(a,h)anthracene	ND	ND
Di-n-butyl phthalate	ND	ND
Fluoranthene	ND	ND
Fluorene	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND
Phenanthrene	ND	ND
Pyrene	ND	ND
Phenol	5.7	4.8
Cresol - o	ND	ND
Cresol - m,p	ND	ND

Kevin Lough, Instrument Specialist

#N/A

CH Lambton

Volatile Analysis
DAF Leachate
Y24-0823
Trials completed; March 6/24
Reported: March 7/24

Compound	March 6/24 0700 Raw ug/g	March 6/24 0700 55C 25LPM ug/g	March 6/24 1200 Raw ug/g	March 6/24 1200 65C 25LPM ug/g
Acetone	171	156	172	145
Methyl Ethyl Ketone	44.2	21.6	34.9	15.6
Toluene	ND	ND	ND	ND
Total xylenes	ND	ND	ND	ND
Phenol	NT	NT	6.1	7.4

Kevin Lough, Instrument Specialist

#N/A

Clean Harbors DAF

Volatile Analysis
DAF Leachate
Y24-0823
Trials completed; March 6/24
Reported: March 7/24

Compound	Raw Conc. ug/g	Effluent Conc. ug/g
Acetone	172	145
Isopropanol	62.6	64.0
Acrylonitrile	ND	ND
1,1-Dichloroethylene	ND	ND
Methyl Ethyl Ketone	34.9	15.6
Hexane	ND	ND
Ethyl Acetate	ND	ND
Chloroform	ND	ND
1,2-Dichloroethane	ND	ND
1,1,1-Trichloroethane	ND	ND
Benzene	ND	ND
Carbon Tetrachloride	ND	ND
p-Dioxane	ND	ND
Trichloroethylene	ND	ND
n-Heptane	ND	ND
Methyl Isobutyl Ketone	ND	ND
1,1,2-Trichloroethane	ND	ND
Toluene	ND	ND
n-Butyl Acetate	ND	ND
Tetrachloroethylene	ND	ND
Chlorobenzene	ND	ND
Ethylbenzene	ND	ND
p- & m- Xylene	ND	ND
Styrene	ND	ND
o-Xylene	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND
1,3,5-Trimethylbenzene	ND	ND
1,3-Dichlorobenzene	ND	ND
1,4-Dichlorobenzene	ND	ND
1,2-Dichlorobenzene	ND	ND
1,3,5-Trichlorobenzene	ND	ND
1,2,4-Trichlorobenzene	ND	ND
1,2,3-Trichlorobenzene	ND	ND
Naphthalene	ND	ND

Kevin Lough, Instrument Specialist

#N/A

Customer

Volatile Analysis
DAF Leachate
Y24-0823
Trials completed; March 6/24
Reported: March 7/24

Compound	**Raw Conc. ug/g**	**Effluent Conc. ug/g**
Acenaphthene	ND	ND
Anthracene	ND	ND
Benzo(a)anthracene	ND	ND
Benzo(a)pyrene	ND	ND
Benzo(g,h,i)perylene	ND	ND
Benzo(b)fluoranthene	ND	ND
Benzo(k)fluoranthene	ND	ND
Bis(2-Ethylhexyl)phthalate	ND	ND
Chrysene	ND	ND
Dibenz(a,h)anthracene	ND	ND
Di-n-butyl phthalate	ND	ND
Fluoranthene	ND	ND
Fluorene	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND
Phenanthrene	ND	ND
Pyrene	ND	ND
Phenol	6.1	7.4
Cresol - o	ND	ND
Cresol - m,p	ND	ND

Kevin Lough, Instrument Specialist

#N/A

CH Lambton

Volatile Analysis
DAF Leachate
Y24-0839
Trials completed; March 7/24
Reported: March 7/24

Compound	March 7/24 0400 Raw ug/g	March 7/24 0400 60C 25LPM ug/g
Acetone	140	75.6
Methyl Ethyl Ketone	40.0	<10
Toluene	ND	ND
Total xylenes	ND	ND
Phenol	4.9	3.4

Kevin Lough, Instrument Specialist

#N/A

Clean Harbors DAF

Volatile Analysis
DAF Leachate
Y24-0839
Trials completed; March 7/24
Reported: March 7/24

Compound	Raw Conc. ug/g	Effluent Conc. ug/g
Acetone	140	75.6
Isopropanol	58.3	38.2
Acrylonitrile	ND	ND
1,1-Dichloroethylene	ND	ND
Methyl Ethyl Ketone	40.0	<10
Hexane	ND	ND
Ethyl Acetate	ND	ND
Chloroform	ND	ND
1,2-Dichloroethane	ND	ND
1,1,1-Trichloroethane	ND	ND
Benzene	ND	ND
Carbon Tetrachloride	ND	ND
p-Dioxane	ND	ND
Trichloroethylene	ND	ND
n-Heptane	ND	ND
Methyl Isobutyl Ketone	ND	ND
1,1,2-Trichloroethane	ND	ND
Toluene	ND	ND
n-Butyl Acetate	ND	ND
Tetrachloroethylene	ND	ND
Chlorobenzene	ND	ND
Ethylbenzene	ND	ND
p- & m- Xylene	ND	ND
Styrene	ND	ND
o-Xylene	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND
1,3,5-Trimethylbenzene	ND	ND
1,3-Dichlorobenzene	ND	ND
1,4-Dichlorobenzene	ND	ND
1,2-Dichlorobenzene	ND	ND
1,3,5-Trichlorobenzene	ND	ND
1,2,4-Trichlorobenzene	ND	ND
1,2,3-Trichlorobenzene	ND	ND
Naphthalene	ND	ND

Kevin Lough, Instrument Specialist

#N/A

Customer

Volatile Analysis
DAF Leachate
Y24-0839
Trials completed; March 7/24
Reported: March 7/24

Compound	Raw Conc. ug/g	Effluent Conc. ug/g
Acenaphthene	ND	ND
Anthracene	ND	ND
Benzo(a)anthracene	ND	ND
Benzo(a)pyrene	ND	ND
Benzo(g,h,i)perylene	ND	ND
Benzo(b)fluoranthene	ND	ND
Benzo(k)fluoranthene	ND	ND
Bis(2-Ethylhexyl)phthalate	ND	ND
Chrysene	ND	ND
Dibenz(a,h)anthracene	ND	ND
Di-n-butyl phthalate	ND	ND
Fluoranthene	ND	ND
Fluorene	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND
Phenanthrene	ND	ND
Pyrene	ND	ND
Phenol	4.9	3.4
Cresol - o	ND	ND
Cresol - m,p	ND	ND

Kevin Lough, Instrument Specialist

#N/A