FINAL REPORT

STERICYCLE

BRAMPTON, ONTARIO

EMISSION SUMMARY AND DISPERSION MODELLING REPORT

RWDI # 2204908

April 19, 2023

SUBMITTED TO

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Ministry of the Environment, Conservation and Parks

Emission Summary and Dispersion Modelling Report Checklist

Company Name

Stericycle ULC

Company Address

Unit Number	Street Number	Street Name	PO Box
	95	Deerhurst Drive	

City/Town	Province	Postal Code
Brampton	ON	L6T 5R7

Location of Facility

95 Deerhurst Drive, Brampton, ON L6T 5R7

The attached Emission Summary and Dispersion Modeling Report was prepared in accordance with s. 26 of O. Reg. 419/05 and the guidance in the MECP document “Procedure for Preparing an Emission Summary and Dispersion Modelling Report” dated March 2009 and “Air Dispersion Modelling Guideline for Ontario” dated March 2009 and the minimum required information identified in the check-list on the reverse of this sheet has been submitted.

Company Contact

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* This checklist is taken from the document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated March 2009.

Emission Summary and Dispersion Modelling Report Checklist

	Required Information	Submitted	Explanation/Reference
	Executive Summary and Emission Summary Table		
	1.1 Overview of ESDM Report	☑ Yes	
	1.2 Emission Summary Table	☑ Yes	
1.0	**Introduction and Facility Description**		
	1.1 Purpose and Scope of ESDM Report (when report only represents a portion of facility)	☑ Yes	
	1.2 Description of Processes and NAICS code(s)	☑ Yes	
	1.3 Description of Products and Raw Materials	☑ Yes	
	1.4 Process Flow Diagram	☑ Yes	
	1.5 Operating Schedule	☑ Yes	
2.0	**Initial Identification of Sources and Contaminants**		
	2.1 Sources and Contaminants Identification Table	☑ Yes	
3.0	**Assessment of the Significance of Contaminants and Sources**		
	3.1 Identification of Negligible Contaminants and Sources	☑ Yes	
	3.2 Rationale for Assessment	☑ Yes	
4.0	**Operating Conditions, Emission Rate Estimating and Data Quality**		
	4.1 Description of operating conditions, for each significant contaminant that results in the maximum POI concentration for that contaminant	☑ Yes	
	4.2 Explanation of Method used to calculate the emission rate for each contaminant	☑ Yes	
	4.3 Sample calculation for each method	☑ Yes	
	4.4 Assessment of Data Quality for each emission rate	☑ Yes	
5.0	**Source Summary Table and Property Plan**		
	5.1 Source Summary Table	☑ Yes	
	5.2 Site Plan (scalable)	☑ Yes	
6.0	**Dispersion Modelling**		
	6.1 Dispersion Modelling Input Summary Table	☑ Yes	
	6.2 Land Use Zoning Designation Plan	☑ Yes	
	6.3 Dispersion Modelling Input and Output Files	☑ Yes	
7.0	**Emission Summary Table and Conclusions**		
	7.1 Emission Summary Table	☑ Yes	
	7.2 Assessment of Contaminants with no MECP POI Limits	☑ Yes	
	7.3 Conclusions	☑ Yes	
	Appendices (Provide supporting information or details such as…)		
	Appendix A: Current ECA	☑ Yes	
	Appendix B: Supporting Information for Assessment of Negligibility Appendix C: Natural Gas Combustion Emissions Calculations	☑ Yes	

	Required Information	Submitted	Explanation/Reference
	Appendix D: Incinerator Source Testing Program Report, October 17, 2022 Appendix E: Generator Emission Calculations Appendix F: Cooling Tower Emission Calculations Appendix G: Dispersion Modelling Input and Output Files	☑ Yes	

EXECUTIVE SUMMARY

This Emission Summary and Dispersion Modelling (ESDM) report covers activities at the Deerhurst facility, operated by Stericycle ULC, located at 95 Deerhurst Drive, Brampton, Ontario. This report was prepared in response to an email request from the Ministry of the Environment, Conservation and Parks (MECP) dated 14th of March 2022 for an ESDM report update that includes assessment of compliance with the new sulphur dioxide (SO_2) standard.

The Deerhurst facility receives various streams of biomedical waste which are segregated for the appropriate method of treatment: i) suitable for autoclave treatment, and ii) "must-burn" anatomical, pharmaceutical, or chemotherapy waste for incineration. The facility currently has two autoclaves and one incinerator for the purposes of waste treatment. The incinerator at the facility is approved to operate with the processing capacity of 10 tonnes per day of waste, not to exceed the 670 kg/h design limit.

Under the North American Industry Classification System (NAICS) the facility is classified as 562210, Waste Treatment and Disposal.

For the purposes of estimating emissions from the facility, a maximum operating scenario was considered. The primary scenario considered the predicted impacts due to the incinerator and the natural gas-fired equipment operating simultaneously at their maximum capacity. This scenario was used as the basis for the dispersion modelling analysis, which was conducted for one-hour, 24-hour, monthly, and annual averaging times. Emission rates were determined through emission factors, source testing, engineering calculations, and historical reports.

The facility is located at 95 Deerhurst Drive, Brampton, Ontario, and the property is zoned for industrial use. Properties immediately adjacent to the Deerhurst facility are also zoned for industrial use. Within a radius of 300 m from the Deerhurst facility there are also areas zoned for open space to the north, agricultural to the east and commercial to the south. The local terrain is generally flat, and this was considered in the dispersion modelling analysis.

Concentrations at points of impingement were predicted using the U.S. EPA AERMOD dispersion model, version 19191. Modelling input and output files have been provided in **Appendix G**. Predicted concentrations for all contaminants of significance were found to be less than their respective benchmark values at all receptors in the area. The contaminant with the greatest percentage of a benchmark under normal conditions was predicted to be nitrogen oxides with a value of 57%. Therefore, the Stericycle Deerhurst facility is expected to be in compliance with the requirements of O. Reg. 419/05.

Emission Summary Table

RWDI# 2204908

Stericycle 2022 ESDM Update

Receptor	Contaminant	CAS Number	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration (µg/m³) [6]	Averaging Period (hours)	MECP POI Limit (µg/m³) [1]	Limiting Effect	Regulation Schedule #	Benchmark Category [2]	Percentage of MECP POI Limit (%)
Normal Operations (No Emergency Generator Testing)											
Property Line	Acrolein	107-02-8	9.28E-05	AERMOD	6.40E-02	1	4.5	Health	Schedule 3	B1	1%
Property Line	Acrolein	107-02-8	9.28E-05	AERMOD	2.84E-02	24	0.4	Health	Schedule 3	B1	7%
Property Line	Acrolein	107-02-8	9.28E-05	AERMOD	2.84E-02	24	4	Health	URT	URT	<1%
Property Line	Benzo(a)pyrene	50-32-8	8.81E-08	AERMOD	4.33E-06	8760	0.00001	Health	Schedule 3	B1	43%
Property Line	Benzo(a)pyrene	50-32-8	8.81E-08	AERMOD	2.69E-05	24	0.005	Health	URT	URT	<1%
Property Line	Dioxins, Furans and Dioxin-like PCBs [3][4]	N/A-DF	8.84E-11	AERMOD	2.70E-08	24	0.0000001	Health	Schedule 3	B1	27%
Property Line	Dioxins, Furans and Dioxin-like PCBs [3][4]	N/A-DF	8.84E-11	AERMOD	2.70E-08	24	0.000001	Health	URT	URT	3%
Property Line	Hydrochloric Acid	7647-01-0	8.97E-03	AERMOD	2.74E+00	24	20	Health	Schedule 3	B1	14%
Property Line	Hydrochloric Acid	7647-01-0	8.97E-03	AERMOD	2.74E+00	24	200	Health	URT	URT	1%
Property Line	Hydrofluoric Acid	7664-39-3	1.44E-03	AERMOD	4.40E-01	24	0.86	Vegetation	Schedule 3	B1	51%
Property Line	Hydrofluoric Acid	7664-39-3	1.44E-03	AERMOD	1.02E-01	720	0.34	Vegetation	Schedule 3	B1	30%
Property Line	Nitrogen Oxides	10102-44-0	3.80E-01	AERMOD	1.70E+02	1	400	Health	Schedule 3	B1	43%
Property Line	Nitrogen Oxides	10102-44-0	3.80E-01	AERMOD	1.13E+02	24	200	Health	Schedule 3	B1	57%
Property Line	Particulate Matter	N/A-PM	2.23E-02	AERMOD	2.13E+00	24	120	Visibility	Schedule 3	B1	2%
Property Line	Phosphorus Pentoxide	1314-56-3	2.15E-04	AERMOD	6.57E-02	24	1	Health	Schedule 3	B2	7%
Property Line	Sodium Hydroxide	1310-73-2	2.92E-03	AERMOD	8.94E-01	24	10	Corrosion	Schedule 3	B1	9%
Property Line	Sulphur Dioxide	7446-09-5	5.47E-03	AERMOD	3.77E+00	1	690	Health & Vegetation	Schedule 3	B1	<1%
Property Line	Sulphur Dioxide	7446-09-5	5.47E-03	AERMOD	1.67E+00	24	275	Health & Vegetation	Schedule 3	B1	<1%
Property Line	Sulphur Dioxide	7446-09-5	5.47E-03	AERMOD	3.77E+00	1	690	Health & Vegetation	URT	URT	<1%
Property Line	Sulphur Dioxide [5]	7446-09-5	5.47E-03	AERMOD	3.77E+00	1	100	Health & Vegetation	Schedule 3	B1	4%
Property Line	Sulphur Dioxide [5]	7446-09-5	5.47E-03	AERMOD	2.69E-01	8760	10	Health & Vegetation	Schedule 3	B1	3%
All Sources (Includes Emergency Generator Testing) [8][9]											
Property Line	Nitrogen Oxides	10102-44-0	1.69E+00	AERMOD	1.22E+03	0.5	1880	Health	Schedule 3	B1	65%

* Modelling was updated in March 2023 using AERMOD v.19191 with Toronto suburban meteorological data and cdem_030M terrain data.

Notes:

[1] The term "MECP POI Limit" identified in Table D-4 of Guideline A-10 refers to the following information (there may be more than one relevant MECP POI Limit for each contaminant):

- Air quality Standards, Guidelines or SL-JSLs set out the MECP publication, "Air Contaminants Benchmark (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", 01 April 2018;

- The Daily Assessment Values (DAV) from the MECP ACB List;
- The Annual Assessment Values (AAV) from the MECP ACB List; or,
- Upper Risk Threshold (URT) from the MECP ACB List; or,
- An acceptable concentration for contaminants with no standards or guidelines.

[2] Benchmark Categories are set out in the MECP ACB List; Benchmark 1 (B1) refers to Standards or Guidelines, Benchmark 2 (B2) refers to Screening Levels.

[3] The PCDD/F (ITEQ) based on the total toxicity equivalent for all individual compounds based on stack sampling program conducted by RWDI

[4] Concentrations in micrograms per cubic metre

[5] New ACB Standard for Sulphur Dioxide, effective date July 1, 2023.

[6] Individual model runs were conducted using a unit emission rate of 1 g/s for the Incinerator source. The model results were multiplied by the actual emission rate for each compound to develop the maximum predicted concentration for each compound. The maximum model results for the unit emission rates are as follows:

0.16	h	(10-minute)	1137 µg/m^3
0.5	h		827 µg/m^3
1	h		689 µg/m^3
24	h		306 µg/m^3
720	h	(Monthly)	71 µg/m^3
8760	h	(Annual)	49 µg/m^3

[7] As per MECP Guideline A-11, 1-hr POI concentrations are compared to 10 minute and 30 minute POI limits by multiplying by the following standard conversions:

10 minute	1.65
30 minute	1.2

[8] As per MECP guidance on emergency generators (standby power sources), the only significant contaminant from this source will be nitrogen oxides (NOx). All other contaminants have maximum POI concentrations as noted for Normal Operation

[9] When testing standby power sources, modelling results for NOx are compared to the MECP approvals screening level of 1880 µg/m3 maximum half-hour average at non-sensitive receptors, and for sensitive receptors the 1-hour standard of 400 µg/m3 is used; there are no sensitive receptors in the vicinity of this facility, so the approvals screening level of 1880 µg/m3 maximum half-hour average is used.

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1 INTRODUCTION

1.1 Purpose and Scope of ESDM

This Emission Summary and Dispersion Modelling (ESDM) report covers activities at the Deerhurst facility, operated by Stericycle ULC, located at 95 Deerhurst Drive, Brampton, Ontario. This report was prepared in response to an email request from the Ministry of the Environment, Conservation and Parks (MECP) dated 14th of March 2022 for an ESDM report update that includes assessment of compliance with the new sulphur dioxide (SO_2) standard.

This ESDM report includes the following updates:

- Assessment of compliance with the new SO_2 standard, effective July 1, 2023;
- Upgrade, relocation, and updated emission rates of the emergency power supply (STACK03);
- Removal of one natural gas-fired backup boiler (STACK05);
- Updated emission rates for natural gas-fired heating equipment;
- Updated emission rates based on most recent incinerator stack testing values (STACK01); and
- Prediction of maximum point of impingement (POI) concentrations using US EPA AERMOD dispersion model version 19191.

1.2 Description of Process and NAICS Code(s)

The Deerhurst facility began operation in 1999 as a waste management facility. The facility accepts waste materials that have been collected from hospitals, doctor's offices, and industries involved in the health care industry. The facility currently has two autoclaves and one incinerator for the purposes of waste treatment. The incinerator at the facility is approved to operate with a processing capacity up to a maximum of 10 tonnes per day of waste, not to exceed 670 kilograms per hour at any time.

Under the North American Industry Classification System (NAICS) the facility is classified as 562210, Waste Treatment and Disposal.

1.3 Description of Products and Raw Materials

The Deerhurst facility receives various streams of biomedical waste which are segregated for the appropriate method of treatment: i) suitable for autoclave treatment, and ii) "must-burn" anatomical, pharmaceutical, or chemotherapy waste for incineration.

Following receipt of the waste from a fleet of transport vehicles, the material suitable for sterilization is unloaded into carts and the carts are placed into the autoclaves for processing. Following sterilization in the autoclave, the materials are placed in a compactor bin for transport to a sanitary landfill.

The incinerator is a two-stage controlled air incinerator with a design limit of 670 kg/h of waste to be treated. In addition to this design limit, the ECA also specifies a maximum processing capacity of 10 tonnes per day of waste. The exhaust gases from the incinerator are directed to a rapid quench, wet scrubber, carbon bed filter based air pollution control system before being discharged through an induced draft fan to the stack. The incinerator is equipped with an in-line ash hole for wet ash removal from the primary chamber. The ash is collected in a large container for transport to landfill. The incinerator is equipped with an air pollution control system, manufactured by EMCOTEK, which includes a selective, non-catalytic reduction (SNCR) system to control nitrogen oxide emissions.

1.4 Process Flow Diagram

Figure 1.4 in the Figures Section provides the process flow diagrams for the facility.

1.5 Operating Schedule

The Stericycle Deerhurst facility operates 24 hours per day and 7 days per week. The facility receives waste from a fleet of collection vehicles which deliver the waste to an unloading dock at the rear of the facility. As described above, the facility currently has two autoclaves and one incinerator for the purposes of waste treatment.

The incinerator operates on a campaign basis amassing waste until there is sufficient volume to burn for a reasonable period and then burning wastes are depleted. The incinerator is then shut down for maintenance. The current approval restricts the total amount of waste that can be burned to 10 tonnes per day, not to exceed 670 kilograms per hour at any time.

The autoclaves are operated 16 hours per day and 6 days per week. They operate in batch mode with each batch taking between 60 and 75 minutes to process. The boiler peak load will occur when the autoclaves are operational, however the steam used to reheat the exhaust gases from the incinerator prior to entering the carbon filter requires the boiler to be on low fire when the incinerator is operating.

Emergency generation equipment is operated as needed and in test mode to meet the appropriate CSA codes. General ventilation of the shops is a combination of make-up air units that supply the air and interconnected purpose-designed exhaust systems.

2 IDENTIFICATION OF SOURCES & CONTAMINANTS

Table 2.1 in the Tables Section provides the Source and Contaminants Identification Table. Detailed source parameters are provided on Table 5.1. A list of the sources included in this ESDM Report is provided below:

2.1 Existing Approved Sources

- One (1) main natural gas-fired heating boiler (STACK04) with a maximum heat input rating of 18,700,000 kJ/h. The principal purpose of the boiler at the Stericycle Deerhurst facility is to provide steam to the autoclaves, although they also provide heat for the incinerator flue gas re-heat system in the Air Pollution Control (APC) system. The boiler supplier has provided a guarantee that the boiler meets MECP Guideline A9 requirements. A copy of this guarantee is provided in **Appendix C**.

- One (1) incinerator main stack (STACK01). The incinerator is a JOY ECLAIRE 2500 TESI W/SR62H equipped with an in-line ash hole for wet ash removal from the primary chamber. The unit is equipped with a 2 yard hydraulic ram feeder with internal stoker and cart lifter. The unit was designed with a secondary chamber that provides 2-second retention time at an operating temperature of 1000°C. Source parameters and emission rates have been updated to the most recent results from the Incinerator Source Testing Program, provided in **Appendix D**.

- One (1) incinerator bypass stack (STACK02). The incinerator, described above, is equipped with a refractory lined 1.07 m diameter bypass stack complete with valve and a connection to route stack gases to the APC system. The bypass stack allows for the exhaust gases to be removed from the incinerator when the APC system is not able to function. The APC system will not function during an electrical power outage and so the bypass stack allows for the exhaust of gases while the incinerator is shutdown. Malfunction of components of the APC system, such as the quench system, also require the use of the bypass stack to allow for restoration of proper function. When the bypass is used due to failure or malfunction of the APC system, an emergency shutdown procedure is initiated for the incinerator. Any time the bypass is opened the Spills Action Centre must be notified immediately. Since operation of the bypass is for transitory emergency situations and immediately initiates an emergency shutdown of the incinerator and notification to the Spills Action Centre, the incinerator bypass was not considered in modelling.

- One diesel-fired emergency generator (STACK03), having a maximum output rating of 500 kWe.

- Ten (10) space heating units (STACK06 to STACK15) with a combined total heat input rating of 1,423,000 kJ/h.

- One (1) container washing system and power washer (STACK16). As part of the container washing a system, a power washer is used to clean the containers. The washer is heated by a steam coil and not fired by natural gas.

- One (1) natural gas-fired dryer (STACK17).

- One (1) natural gas-fired make-up air unit (STACK18), with a maximum heat input rating of 132,000 kJ/h.

- Four (4) items of equipment for the autoclave treatment process, two autoclave holding tanks and two condensers (STACK21 to STACK24). The autoclave process sterilizes waste by heating it to high temperature using a steam autoclave. At the end of the autoclave treatment cycle, steam is released through a large condenser equipped with water sprayers. The water and any condensate collected are routed to a holding tank and discharged to the sanitary sewer system. Should the water valves fail to open, a vent on the condenser allows steam to escape to atmosphere.

- One (1) 405-ton cooling tower (CT1), with a water circulation rate of 76.65 litres per second (1215 US gallons per minute).

2.2 Exempt Sources

- Two (2) building ventilation fans (STACK19 and STACK20), installed on the roof of the processing area. The fans are thermostatically controlled to maintain temperature on the operating floor. In conjunction with the fans, a fresh air intake hood is used to supply fresh air to the operating space. These sources are exempt from the requirement to obtain an ECA as per Section 7 of O. Reg. 524/98, which includes equipment used for the ventilation of indoor air out of a space that does not discharge any contaminant produced by those activities, other than heat or noise.

3 SIGNIFICANCE OF SOURCES & CONTAMINANTS

3.1 Identification of Negligible Sources

3.1.1 Insignificant Sources

The following sources were determined to be insignificant:

- STACK06 to STACK15, STACK18 : Space Heating Equipment and Make-up Air Unit
- STACK16 : Container Washing System
- STACK19 and STACK20 : Exhaust Fans
- STACK21 to STACK24 : Autoclaves and Condensers

3.1.2 Rationale for Assessment

3.1.2.1 STACK06 to STACK15, STACK18 : Space Heating Equipment and Make-up Air Unit

These sources are space heaters and a make-up air unit fired by natural gas. Section 7.2.2 of the MECP Guideline A10 states that "sources that, in combination, represent less than 5% of total property-wide emissions of a contaminant can, in many cases, be considered insignificant". As shown in **Appendix C**, combined emissions of nitrogen oxides for this space heating equipment plus the make-up air unit was calculated to be 1.82E-02 g/s, which is 4.6% of the total emissions of nitrogen oxides for the facility, and therefore STACK06 to STACK15 and STACK18 have been considered insignificant sources of nitrogen oxides.

3.1.2.2 STACK16 : Container Washing System

This source is a power washer that is heated by steam coil. As the power washer is not fired by natural gas it is considered to be negligible.

3.1.2.3 STACK19 and STACK20 : Exhaust Fans

These fans provide general ventilation for the interior space and are not expected to discharge any contaminant other than heat.

3.1.2.4 STACK21 to STACK24 : Autoclaves and Condensers

The Emission Summary and Dispersion Modelling Report prepared by A.J. Chandler & Associates Ltd. for the Stericycle Deerhurst facility, December 2007, describes exhaust testing that was required for the autoclave and condenser following commencement of operation. Samples were collected from the condenser and the quantity of VOCs in the condenser samples was found to be generally low. In addition, it is described in the Chandler report that since the duration of the releases from the facility is on the order of 4 minutes, after which flow ceases, not enough chemicals are released to result in a one-hour average and compare to a POI value. With the findings of the testing and based on the operation conditions, the autoclave holding tanks and the condensers are considered to be negligible.

3.2 Identification of Insignificant Contaminants

3.2.1 Insignificant Contaminants

The following contaminants were determined to be insignificant:

- Contaminants other than nitrogen oxides from emergency generators
- Contaminants other than nitrogen oxides from natural gas-fired combustion equipment
- Contaminants screened out using an Emission Threshold

3.2.2 Rationale for Assessment

3.2.2.1 Contaminants other than Nitrogen Oxides from Emergency Generators

The MECP emergency generator guideline, Information for Proponents Applying for a Certificate of Approval (Air) for an Emergency Generator, August 2008, states that the significant contaminants emitted to the atmosphere from an emergency generator are nitrogen oxides (NOx). Other contaminants, for these types of sources, are generally emitted in negligible amounts.

3.2.2.2 Contaminants other than Nitrogen Oxides from Natural Gas-Fired Combustion Equipment

As per the MECP Guideline A-10, the significant contaminant for the combustion of natural gas and propane may be nitrogen oxides. Other contaminants, for this type of source, are generally emitted in negligible amounts.

3.2.2.3 Contaminants screened out using the Emissions Threshold

As per the MECP Guideline A-10, aggregate facility-wide emissions of a contaminant may be compared to a calculated site-specific emission threshold to evaluate whether the contaminant is significant. The Emission Threshold is calculated using a conservative dispersion factor (µg/m³ per g/s emission) and the relevant standard or guideline under O. Reg. 419/05. For chemicals without limits under O. Reg. 419/05, the MECP de minimus Points of Impingement (POI) concentrations (24-hour average basis) presented on Table B-2A in Appendix B.1 of MECP Guideline A-10 can be used (unless the chemical is listed on Table B-2B of MECP Guideline A-10).

If the aggregate facility-wide emission rate of a contaminant multiplied by the appropriate dispersion factor from Appendix B.1 of the MECP Guideline A-10 is less than 50% of the limit under O. Reg. 419/05, or is less than the appropriate de minimus value (or converted to a 24-hour average concentration in the case of 24-hour average limit under O. Reg. 419/05), then the assessment for that contaminant is complete.

Contaminants screened out using the emission threshold are listed in **Appendix B**.

Sulphur Dioxide was screened out on this basis but was carried through to the assessment based on the MECP request that compliance with the new SO_2 limits be assessed.

4 OPERATING CONDITIONS, EMISSIONS ESTIMATING & DATA QUALITY

4.1 Description of Operating Conditions

Section 10 of O. Reg. 419/05 states that, for the purposes of an ESDM report, an acceptable operating scenario to consider is one that would result, for a given contaminant, in the highest concentration of that contaminant at Points of Impingement (POI's) that the facility is capable of causing. To satisfy this requirement, a maximum production scenario was developed in consultation with Stericycle Deerhurst.

For the purposes of this report, two operating scenarios were investigated. The first scenario assessed the predicted impacts due to the incinerator and the natural gas-fired equipment operating simultaneously at their maximum capacity. The second scenario included all of the equipment included in Scenario 1 plus the testing of the emergency generator.

4.2 Explanation of Method Used to Calculate the Emission Rate

4.2.1 Natural Gas-Fired Combustion Equipment

Emissions from the 400 BHP main boiler (STACK04) were estimated using the manufacturer's emission specifications, provided in **Appendix C**. The manufacturer guarantees a maximum in-stack concentration of 48 ppm of nitrogen oxides. This was converted to an emission rate using the exhaust gas temperature stated on the specification sheet, and assuming atmospheric pressure of 101.3 kPa.

Emissions from natural gas-fired heating equipment were estimated using factors from US EPA AP-42 Chapter 1.4 and the maximum heat input for the equipment. This is summarized in **Appendix C**.

4.2.2 Incinerator

The incinerator stack gas flow conditions and the emission rates for the contaminants were based upon the latest stack testing results, Incinerator Source Testing Program Report, October 17, 2022. A copy of this report has been provided in **Appendix D**.

4.2.3 Emergency Generator

A new EPA-certified emergency diesel-fired generator was installed in 2016 and is expected to conform to EPA Tier 3 emission standard for stationary compression ignition engines. The EPA Tier 3 standards do not necessarily account for transitional use of the engines, such as during start up during a generator test.

A generator test of one-hour duration was assumed. The initial 15 minutes were assumed to conform to uncontrolled emissions from a stationary diesel engine, with emissions factors as described in AP-42 Table 3.3-1. Following this start up period, the engine was assumed to operate in compliance with EPA Tier 3 standards. A weighted average of these emission rates was calculated for the hour, and this was used as the emission rate of nitrogen oxides for one-hour and 24-hour AERMOD modelling. Sample calculations and additional information are provided in **Appendix E**.

4.2.4 Cooling Tower

The MECP requires the assessment of two air quality concerns for cooling towers: particulate emissions; and the visible (fogging) impacts of the cooling tower exhaust plumes. The worst-case scenario for the fogging impact assessment included the cooling tower operating continuously during the winter months. The MECP has a Cooling Tower Guideline to calculate the visible plume length extending from the operating towers during a worst-case January day. We recognise that this is an unlikely scenario as cooling towers typically do not operate in the winter months. The visible plume calculations are based on the exhaust exit temperature, local ambient temperature, relative humidity, and saturation curves. This guideline was followed, and calculations are provided in **Appendix F**.

The cooling tower was also examined for particulate emissions. Particulate emissions were calculated using AP-42 Chapter 13.4 “Wet Cooling Towers”. The emission rates from the cooling towers were based on total dissolved solids (TDS) and drift loss obtained from the manufacturer. Particulate emission calculations for the cooling towers are included in **Appendix F**.

4.3 Sample Calculation for Each Method

4.3.1 Natural Gas-Fired Combustion Equipment

Refer to **Appendix C** for example calculations for the boiler and other heating equipment.

4.3.2 Incinerator

Refer to **Appendix D** for the Incinerator Source Testing Program Report, October 17, 2022.

4.3.3 Emergency Generator

Refer to **Appendix E** for example calculations for the diesel-fired emergency generator.

4.3.4 Cooling Tower

Refer to **Appendix F** for example calculations for the cooling tower.

4.4 Assessment of Data Quality for Each Emission Rate

The assessment of data quality for each emission rate is provided in the Source Summary Table and is based on the AP-42 data quality ratings.

5 SOURCE SUMMARY TABLE & PROPERTY PLAN

5.1 Source Summary Table

Table 5.1 in the Tables Section provides the Source Summary Table for the facility.

5.2 Site plan (Scaleable)

Figure 5.2 in the Figures Section provides the site plan for the facility.

6 DISPERSION MODELLING

6.1 Dispersion Modelling Input Summary Table

Table 6.1 in the Tables Section provides the Dispersion Modelling Input Summary Table for the facility.

6.2 Land Use Designation Plan

Figure 6.2 in the Figures Section provides the zoning designation.

The site is zoned for industrial use and is surrounded by properties also zoned for industrial use. Within a radius of 300 m from the facility there are also areas zoned for open space to the north, agricultural to the east and commercial to the south. The local terrain is generally flat.

6.3 Dispersion Modelling Input and Output Files

Modelling input and output files have been provided in **Appendix G**.

7 EMISSION SUMMARY TABLE & CONCLUSIONS

7.1 Emission Summary Table

Table 7.1 in the Tables Section provides the Emission Summary Table for the facility.

7.2 Contaminants without Standards or Guidelines under O. Reg. 419/05

All contaminants identified in the emission inventory have established benchmark values listed in the MECP Workbook Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants, Version 2.0 - April, 2018.

7.3 Conclusions

Concentrations at points of impingement were predicted using the U.S. EPA AERMOD dispersion model, version 19191. Predicted concentrations for all contaminants of significance were found to be less than their respective benchmark values at all receptors in the area. The contaminant with the greatest percentage of a benchmark under normal conditions was predicted to be nitrogen oxides with a value of 57%. Therefore, the Stericycle Deerhurst facility is expected to be in compliance with the requirements of O. Reg. 419/05.

7.4 Statement of Limitations

This report entitled Emission Summary and Dispersion Modelling Report, dated March 31, 2023, was prepared by RWDI AIR Inc. ("RWDI") for Stericycle ULC ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

TABLES

1.1 Summary of Changes

RWDI# 2204908

Stericycle 2022 ESDM Update

Process Description	Source(s) Affected	Contaminant	Original Emission Rate (g/s)	New Emission Rate (g/s)	Comment
2022 ESDM Update (March 2023) - PN #2204908					
Upgraded the emergency standby diesel generator equipment to a new unit (model Generac SD500)	STACK03	Nitrogen Oxides	2.7	1.31	New diesel generator has been moved from the interior of the facility to a location outdoors at the back of the facility. As per the MECP Emergency Generator Checklist, all contaminants emitted though combustion by an emergency generator except for nitrogen oxides are considered negligible; contaminants that had been modelled in previous assessments are no longer included.
Removal of one natural gas-fired backup boiler, rated at maximum heat input of 9,284,000 kJ/h.	STACK05	Nitrogen Oxides	1.10E-01	0	

2.1 Sources and Contaminant Identification Table

RWDI# 2204908

Stericycle 2022 ESDM Update

Source Information					Expected Contaminants	Included in Modelling? (yes / no)	Significant? (yes / no)	Reference (optional)
Source ID	Source Description or Title	Thermal Input Rating BTU/hr	Thermal Input Rating KJ/hr	General Location				
Existing Approved Sources								
STACK01	Incinerator Main Stack	--	--	On roof	Products of Combustion	Yes	Yes	
					Organics and Inorganics	Yes	Yes	
STACK02	Incinerator Bypass Stack	--	--	On roof	Products of Combustion	No	No	
					Organics and Inorganics	No	No	
STACK03	500 eKW Diesel generator (Emergency Standby)	--	--	Northeast corner of property	Products of Combustion	Yes	Yes	[1]
STACK04	Natural gas-fired heating boiler (Main)	17,724,110	18,700,000	On roof	Products of Combustion	Yes	Yes	[2]
STACK06	Roof top heating unit	120,372	127,000	On roof	Products of Combustion	No	No	[2][3]
STACK07	Roof top heating unit	90,042	95,000	On roof	Products of Combustion	No	No	[2][3]
STACK08	Roof top heating unit	90,042	95,000	On roof	Products of Combustion	No	No	[2][3]
STACK09	IR heating unit	149,755	158,000	On roof	Products of Combustion	No	No	[2][3]
STACK10	IR heating unit	149,755	158,000	On roof	Products of Combustion	No	No	[2][3]
STACK11	IR heating unit	149,755	158,000	On roof	Products of Combustion	No	No	[2][3]
STACK12	IR heating unit	149,755	158,000	On roof	Products of Combustion	No	No	[2][3]
STACK13	IR heating unit	149,755	158,000	On roof	Products of Combustion	No	No	[2][3]
STACK14	IR heating unit	149,755	158,000	On roof	Products of Combustion	No	No	[2][3]
STACK15	IR heating unit	149,755	158,000	On roof	Products of Combustion	No	No	[2][3]
STACK16	Power Washer	--	--	On roof	None	No	No	
STACK17	Dryer	199,989	211,000	On roof	Products of Combustion	Yes	Yes	[2]
STACK18	Roof-mounted MAU	125,111	132,000	On roof	Products of Combustion	No	No	[2][3]
STACK19	Building General Exhaust Fan	--	--	On roof	General Ventilation	No	No	Section 3.1.2.3
STACK20	Building General Exhaust Fan	--	--	On roof	General Ventilation	No	No	Section 3.1.2.3
STACK21	Autoclave Holding Tank Vent	--	--	On roof	Process Vent VOC / Steam	No	No	Section 3.1.2.4
STACK22	Autoclave Holding Tank Vent	--	--	On roof	Process Vent VOC / Steam	No	No	Section 3.1.2.4
STACK23	Condenser (Autoclave system)	--	--	On roof	Process Vent VOC / Steam	No	No	Section 3.1.2.4
STACK24	Condenser (Autoclave system)	--	--	On roof	Process Vent VOC / Steam	No	No	Section 3.1.2.4
CT1	Cooling Tower	--	--	On roof	Particulate Matter	Yes	Yes	
Sources to be Removed from Assessment								
STACK05	Natural gas-fired heating boiler (Back-up)	8,880,064	9,369,000	On roof	Products of Combustion	No	No	

Notes:

[1] As per the MECP Emergency Generator Checklist, all contaminants emitted though combustion by an emergency generator except for nitrogen oxides are considered negligible.

[2] As per Guideline A-10, Section 7.1.1, all contaminants emitted through natural gas and propane combustion except for nitrogen oxides are considered negligible.

[3] As per Guideline A-10, Section 7.2.2, these sources in combination represent less than 5% of total facility emissions of nitrogen oxides, and are therefore deemed insignificant.

5.1 Source Summary Table (by source)

RWDI# 2204908

Stericycle 2022 ESDM Update

Source ID	Source Type	Source Description	Source Data								Emission Data						
			Stack Volumetric Flow Rate (Am^3/s)	Stack Exit Gas Temp. (°C)	Stack Inner Diameter (m)	Stack Exit Velocity (m/s)	Stack Height Above Grade (m)	Stack Height Above Roof (m)	Source Coordinates X (m)	Source Coordinates Y (m)	Contaminant	CAS Number	Maximum Emission Rate (g/s)	Averaging Period (hours)	Emission Estimating Technique [1]	Emissions Data Quality [2]	Percentage of Overall Emissions (%)
STACK01	Point	Incinerator - Main Stack of Air Pollution Control System	2.13	49	0.61	7.30	18.30	11.10	607470	4844268	Acrolein	107-02-8	9.28E-05	24	V-ST	Above-Average	100%
											Benzo(a)pyrene	50-32-8	8.81E-08	24	V-ST	Above-Average	100%
											Dioxins, Furans and Dioxin-like PCBs	N/A-DF	8.84E-11	24	V-ST	Above-Average	100%
											Hydrochloric Acid	7647-01-0	8.97E-03	24	V-ST	Above-Average	100%
											Hydrofluoric Acid	7664-39-3	1.44E-03	24	V-ST	Above-Average	100%
											Nitrogen Oxides	10102-44-0	2.28E-01	24	V-ST	Above-Average	57%
											Particulate Matter	N/A-PM	6.97E-03	24	V-ST	Above-Average	31%
											Phosphorus Pentoxide	1314-56-3	2.15E-04	24	V-ST	Above-Average	100%
											Sodium Hydroxide	1310-73-2	2.92E-03	24	V-ST	Above-Average	100%
											Sulphur Dioxide	7446-09-5	5.47E-03	1	V-ST	Above-Average	100%
STACK04	Point	400 HP Boiler (Main)	3.18	280	0.60	11.28	9.23	2.03	607450	4844276	Nitrogen Oxides	10102-44-0	1.50E-01	24	EF	Above-Average	38%
CT1	Point	Cooling Tower	104	32	3.35	11.78	12.10	4.90	607465	4844258	Particulate Matter	N/A-PM	1.53E-02	24	EF	Marginal	69%
NG_COMB	Volume	Natural gas-fired heating equipment (STACK17)	n/a						607450	4844265	Nitrogen Oxides	10102-44-0	2.47E-03	24	EF	Marginal	<1%
Insignificant Sources																	
NG_COMB	Volume	Natural gas-fired heating equipment (STACK 6-15, STACK 18)							607450	4844265	Nitrogen Oxides	10102-44-0	1.82E-02	24	EF	Marginal	5%
Emergency Testing Scenario																	
STACK03	Point	500kW Diesel Generator (Emergency Standby)	1.87	550	0.20	57.56	2.50	n/a	607464	4844320	Nitrogen Oxides	10102-44-0	1.31E+00	24	EF	Marginal	n/a
											Total NOx Emission Rate		1.69E+00				
											Contaminant	CAS	Total All Sources	Total Significant Sources			
Total		Total of all listed sources									Acrolein	107-02-8	9.28E-05	9.28E-05			100%
											Benzo(a)pyrene	50-32-8	8.81E-08	8.81E-08			100%
											Dioxins, Furans and Dioxin-like PCBs	N/A-DF	8.84E-11	8.84E-11			100%
											Hydrochloric Acid	7647-01-0	8.97E-03	8.97E-03			100%
											Hydrofluoric Acid	7664-39-3	1.44E-03	1.44E-03			100%
											Nitrogen Oxides	10102-44-0	3.99E-01	3.80E-01			100%
											Particulate Matter	N/A-PM	2.23E-02	2.23E-02			100%
											Phosphorus Pentoxide	1314-56-3	2.15E-04	2.15E-04			100%
											Sodium Hydroxide	1310-73-2	2.92E-03	2.92E-03			100%
											Sulphur Dioxide	7446-09-5	5.47E-03	5.47E-03			100%

Notes:

[1] Emission Estimating Technique Short-Forms are V-ST (Validated Source Test), “ST” (Source Test), EF (Emission Factor), MB (Mass Balance), and EC (Engineering Calculation).

6.1 Dispersion Modelling Input Summary Table

RWDI# 2204908

Stericycle 2022 ESDM Update

Relevant Section of the Regulation	Section Title	Description of How the Approved Dispersion Model was Used
Section 8	Negligible Sources	Sources STACK06 to STACK15 and STACK18 were considered negligible because these sources in combination represent less than 5% of total facility emissions of nitrogen oxides, and therefore were not included in the modelling.
Section 9	Same Structure Contamination	Assessment of same structure contamination is not required for this facility.
Section 10	Operating Conditions	Please refer to Section 4.1 of the ESDM report. For the purposes of this application a maximum operating scenario was applied; this consists of all equipment operating simultaneously at their individual maximum capacities.
Section 11	Source of Contaminant Emission Rates	Please refer to section 4.0 of the ESDM report for an explanation of the methods used to estimate contaminant emissions. The source summary table (Table 5.1) includes an assessment of how accurately the methods estimate the emission rate.
Section 12	Combined Effect of Assumptions for Operating Conditions and Emission Rates	The operating conditions and emission rates (as described in previous sections) were used in an approved dispersion model. The model-predicted results that were less than the applicable POI limits; therefore, no further refinements were made to either the operating conditions or the emission rates.
Section 13	Meteorological Conditions	The facility is located in Brampton; therefore, the Central Region meteorological data set is recommended by the MECP for use at this site. This includes surface data from Pearson International Airport in Toronto and upper air data from Buffalo, New York. Within each region, the MECP provides alternative data sets with the choice of data set depending on the character of the terrain at the study site. The area surrounding the facility is primarily industrial; therefore, the default data set for “suburban” was used.
Section 14	Area of Modelling Coverage	The area of modelling coverage was designed to meet the requirements outlined in Section 14 of O. Reg. 419/05. A multi-tiered receptor grid was developed as per Section 7.2 of Guideline A-11, Version 3.0, February 2017. Interval spacing was dependent on receptor distance from on-site sources. Receptors on site were removed from the assessment.
Section 15	Stack Height for Certain New Sources of Contaminant	All stack heights are within the allowable stack height obtained using the stack height formula defined under Section 15 of O. Reg. 419/05. As such, building downwash effects have been considered in the dispersion modelling by using the US-EPA’s Building Profile Input Program (BPIP) associated with the AERMOD model.
Section 16	Terrain Data	Terrain information for the area surrounding the facility was obtained from the MECP Regional Meteorological and Terrain Data for Air Dispersion Modelling website. The terrain data is based on the Canadian Digital Elevation Model (CDEM) horizontal reference datum. These data were run through the AERMAP terrain pre-processor to estimate base elevations for sources and receptors to help the model account for changes in elevation in the surrounding terrain.
Section 17	Averaging Periods	Emissions were modelled using the 1-hour, 24-hour, month and annual averaging period options in the AERMOD dispersion model. Half-hour averages were calculated based on the conversion factor equation provided in Guideline A-10, Table 7-1.

7.1 Emission Summary Table

RWDI# 2204908

Stericycle 2022 ESDM Update

Receptor	Contaminant	CAS Number	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration (µg/m³) [6]	Averaging Period (hours)	MECP POI Limit (µg/m³) [1]	Limiting Effect	Regulation Schedule #	Benchmark Category [2]	Percentage of MECP POI Limit (%)
Normal Operations (No Emergency Generator Testing)											
Property Line	Acrolein	107-02-8	9.28E-05	AERMOD	6.40E-02	1	4.5	Health	Schedule 3	B1	1%
Property Line	Acrolein	107-02-8	9.28E-05	AERMOD	2.84E-02	24	0.4	Health	Schedule 3	B1	7%
Property Line	Acrolein	107-02-8	9.28E-05	AERMOD	2.84E-02	24	4	Health	URT	URT	<1%
Property Line	Benzo(a)pyrene	50-32-8	8.81E-08	AERMOD	4.33E-06	8760	0.00001	Health	Schedule 3	B1	43%
Property Line	Benzo(a)pyrene	50-32-8	8.81E-08	AERMOD	2.69E-05	24	0.005	Health	URT	URT	<1%
Property Line	Dioxins, Furans and Dioxin-like PCBs [3][4]	N/A-DF	8.84E-11	AERMOD	2.70E-08	24	0.0000001	Health	Schedule 3	B1	27%
Property Line	Dioxins, Furans and Dioxin-like PCBs [3][4]	N/A-DF	8.84E-11	AERMOD	2.70E-08	24	0.000001	Health	URT	URT	3%
Property Line	Hydrochloric Acid	7647-01-0	8.97E-03	AERMOD	2.74E+00	24	20	Health	Schedule 3	B1	14%
Property Line	Hydrochloric Acid	7647-01-0	8.97E-03	AERMOD	2.74E+00	24	200	Health	URT	URT	1%
Property Line	Hydrofluoric Acid	7664-39-3	1.44E-03	AERMOD	4.40E-01	24	0.86	Vegetation	Schedule 3	B1	51%
Property Line	Hydrofluoric Acid	7664-39-3	1.44E-03	AERMOD	1.02E-01	720	0.34	Vegetation	Schedule 3	B1	30%
Property Line	Nitrogen Oxides	10102-44-0	3.80E-01	AERMOD	1.70E+02	1	400	Health	Schedule 3	B1	43%
Property Line	Nitrogen Oxides	10102-44-0	3.80E-01	AERMOD	1.13E+02	24	200	Health	Schedule 3	B1	57%
Property Line	Particulate Matter	N/A-PM	2.23E-02	AERMOD	2.13E+00	24	120	Visibility	Schedule 3	B1	2%
Property Line	Phosphorus Pentoxide	1314-56-3	2.15E-04	AERMOD	6.57E-02	24	1	Health	Schedule 3	B2	7%
Property Line	Sodium Hydroxide	1310-73-2	2.92E-03	AERMOD	8.94E-01	24	10	Corrosion	Schedule 3	B1	9%
Property Line	Sulphur Dioxide	7446-09-5	5.47E-03	AERMOD	3.77E+00	1	690	Health & Vegetation	Schedule 3	B1	<1%
Property Line	Sulphur Dioxide	7446-09-5	5.47E-03	AERMOD	1.67E+00	24	275	Health & Vegetation	Schedule 3	B1	<1%
Property Line	Sulphur Dioxide	7446-09-5	5.47E-03	AERMOD	3.77E+00	1	690	Health & Vegetation	URT	URT	<1%
Property Line	Sulphur Dioxide [5]	7446-09-5	5.47E-03	AERMOD	3.77E+00	1	100	Health & Vegetation	Schedule 3	B1	4%
Property Line	Sulphur Dioxide [5]	7446-09-5	5.47E-03	AERMOD	2.69E-01	8760	10	Health & Vegetation	Schedule 3	B1	3%
Emergency Generator Testing [8][9]											
Property Line	Nitrogen Oxides	10102-44-0	1.69E+00	AERMOD	1.22E+03	0.5	1880	Health	Schedule 3	B1	65%

* Modelling was updated in March 2023 using AERMOD v.19191 with Toronto suburban meteorological data and cdem_030M terrain data.

Notes:

[1] The term "MECP POI Limit" identified in Table D-4 of Guideline A-10 refers to the following information (there may be more than one relevant MECP POI Limit for each contaminant):

- Air quality Standards, Guidelines or SL-JSLs set out the MECP publication, "Air Contaminants Benchmark (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", 01 April 2018;

- The Daily Assessment Values (DAV) from the MECP ACB List;
- The Annual Assessment Values (AAV) from the MECP ACB List; or,
- Upper Risk Threshold (URT) from the MECP ACB List; or,
- An acceptable concentration for contaminants with no standards or guidelines.

[2] Benchmark Categories are set out in the MECP ACB List; Benchmark 1 (B1) refers to Standards or Guidelines, Benchmark 2 (B2) refers to Screening Levels.

[3] The PCDD/F (ITEQ) based on the total toxicity equivalent for all individual compounds based on stack sampling program conducted by RWDI

[4] Concentrations in micrograms per cubic metre

[5] New ACB Standard for Sulphur Dioxide, effective date July 1, 2023.

[6] Individual model runs were conducted using a unit emission rate of 1 g/s for the Incinerator source. The model results were multiplied by the actual emission rate for each compound to develop the maximum predicted concentration for each compound. The maximum model results for the unit emission rates are as follows:

0.16 h (10-minute)	1137 µg/m^3
0.5 h	827 µg/m^3
1 h	689 µg/m^3
24 h	306 µg/m^3
720 h (Monthly)	71 µg/m^3
8760 h (Annual)	49 µg/m^3

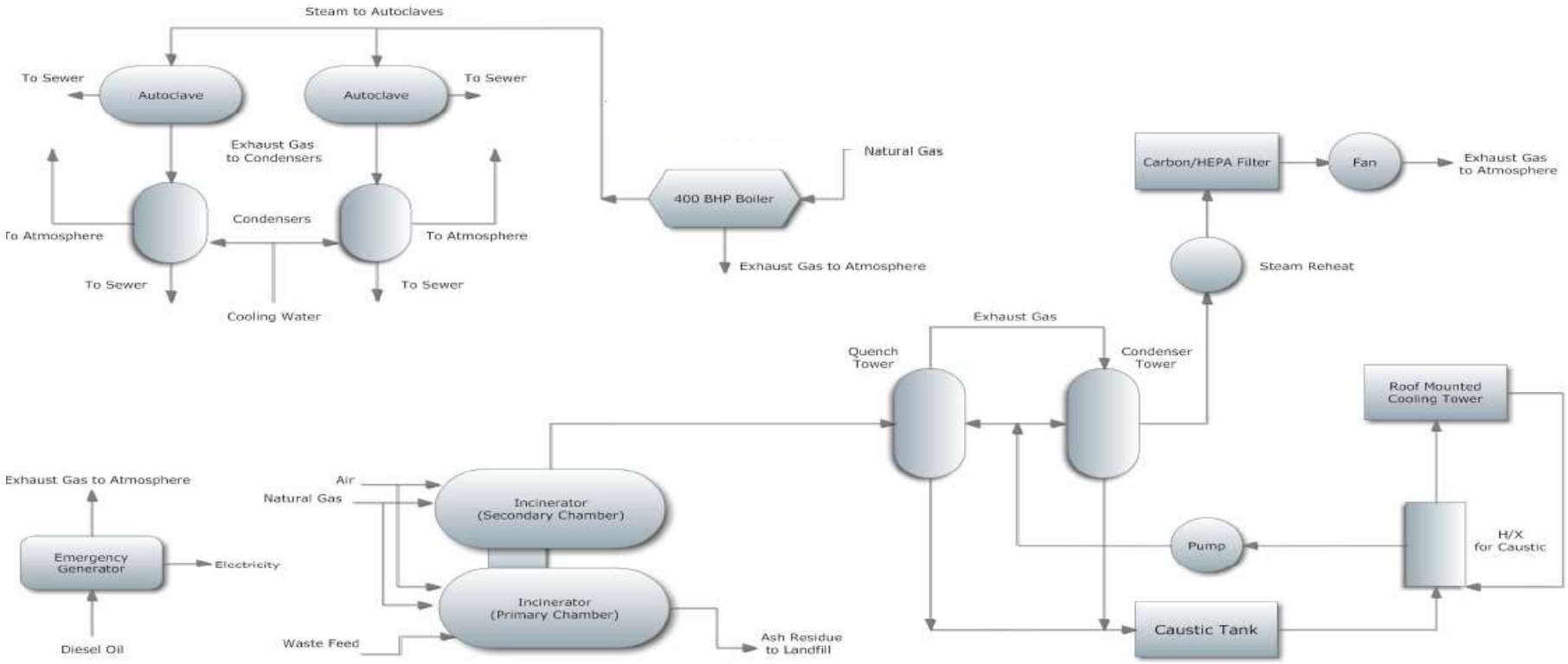
[7] As per MECP Guideline A-11, 1-hr POI concentrations are compared to 10 minute and 30 minute POI limits by multiplying by the following standard conversions:

10 minute	1.65
30 minute	1.2

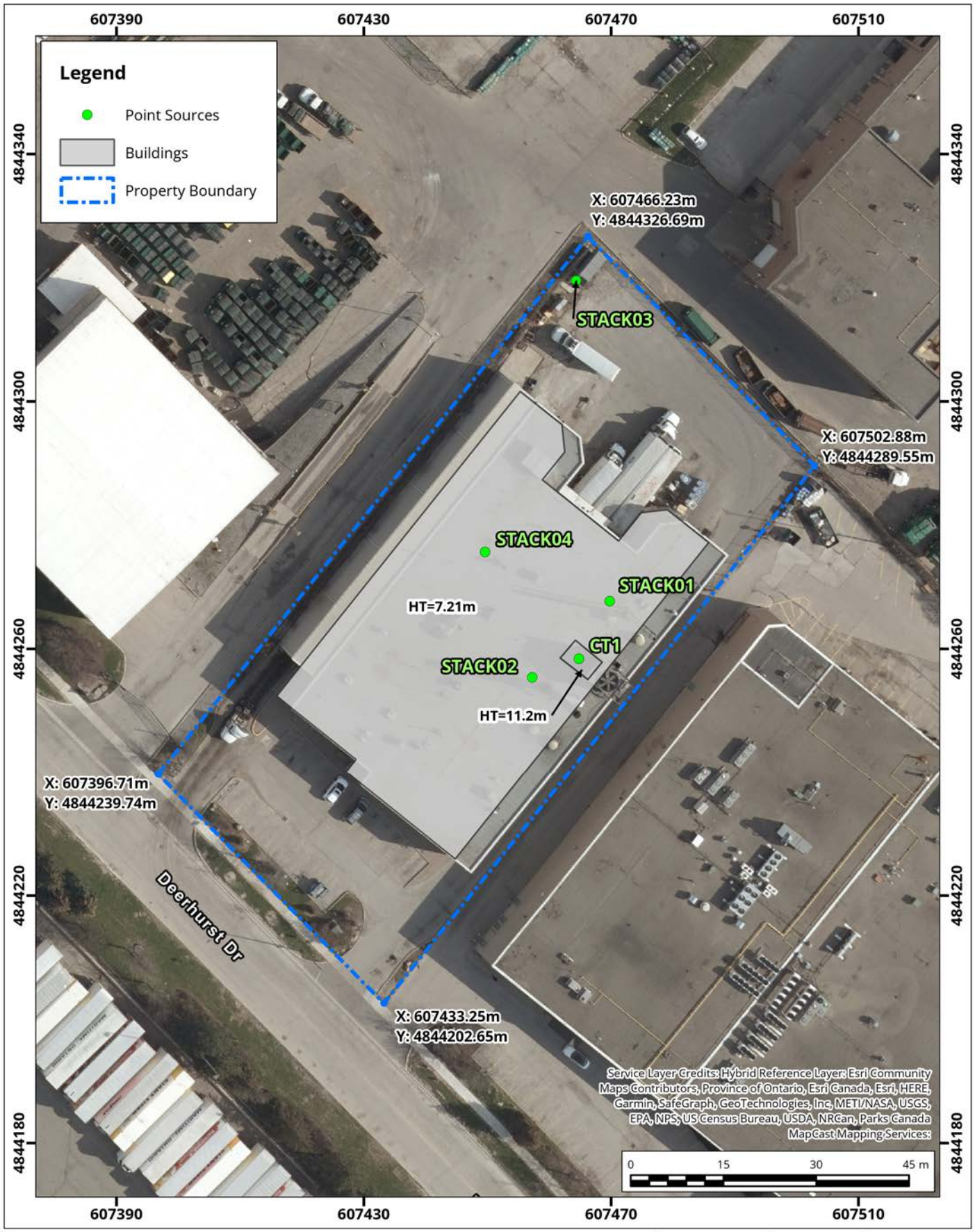
[8] As per MECP guidance on emergency generators (standby power sources), the only significant contaminant from this source will be nitrogen oxides (NOx). All other contaminants have maximum POI concentrations as noted for Normal Operations.

[9] When testing standby power sources, modelling results for NOx are compared to the MECP approvals screening level of 1880 µg/m^3 maximum half-hour average at non-sensitive receptors, and for sensitive receptors the 1-hour standard of 400 µg/m^3 is used; there are no sensitive receptors in the vicinity of this facility, so the approvals screening level of 1880 µg/m^3 maximum half-hour average is used.

FIGURES



Process Flow Diagram		Drawn by: JWS	Figure: 1.4
		Approx. Scale: not to scale	
Stericycle 2022 ESDM Update - Brampton, ON	RWDI# 2204908	Date Revised: March 15, 2023	



Site Plan

True North

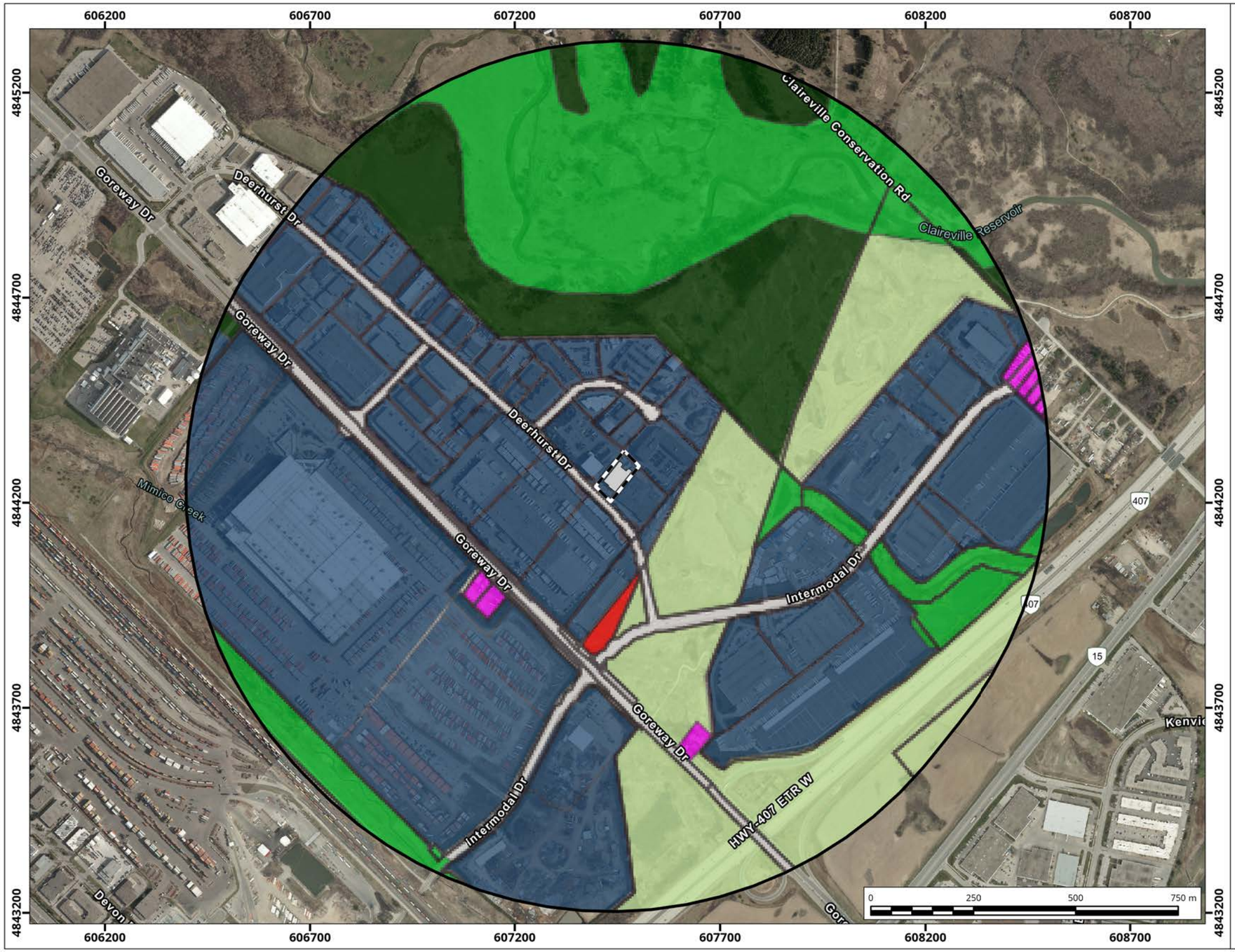
Map Projection: NAD 1983 UTM Zone 17N

Stericycle Inc. - 95 Deerhurst Drive - Brampton, ON

Project #: 2204908

Drawn by: RCL	Figure: 5.2
Approx. Scale:	1:850
Date Revised: Mar 16, 2023	

Map Document: D:\GIS\desktop\2204908_StericycleInc\P2204908_StericycleInc.aprx



Legend

- Buildings
- Property Boundary
- 20 m
- 70 m
- 300 m
- 1,000 m

Zoning Classification

- Agricultural
- Open Space
- Floodplain
- Institutional
- Industrial
- Commercial
- Residential - Single/Semi
- Residential - Medium Density
- Residential - High Density
- Residential - Other
- Roads/Public Ownership
- Development Permit System

Service Layer Credits: Zoning map - Brampton Geohub; MapCast Mapping Services: Hybrid Reference Layer (road and water labels only): Esri Community Maps Contributors, Province of Ontario, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada

Land Use Zoning and Designation

Map Projection: NAD 1983 UTM Zone 17N

Stericycle Inc. - 95 Deerhurst Drive - Brampton, ON

True North

Project #: 2204908

Drawn by: RCL	Figure: 6. 2
Approx. Scale:	1:10,200
Date Revised:	Mar 8, 2023

Map Document: D:\GIS\Desktop\2204908_Stericycle\mxd\2204908_Stericycle.mxd

APPENDIX A

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A680324
Issue Date: July 20, 2020

Stericycle, ULC
95 Deerhurst Dr
Brampton, Ontario
L6T 5R7

Site Location: 95 Deerhurst Drive
Brampton City, Regional Municipality of Peel

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:

the use and operation of a Waste Disposal Site which includes the use of the Site for the transfer, processing and incineration of the following categories of waste:

> Waste Class Nos. 148 (Miscellaneous waste inorganic chemicals), 261 (Pharmaceutical), except bulk liquids, 262 (Detergents and Soaps), 264 (Photoprocessing) and 312 (Pathological), as defined in the New Ontario Waste Classes dated January, 1986 or the most recent revision; Biomedical Waste and solid non-hazardous wastes, including but not limited to controlled substances as defined in the *Controlled Drug and Substances Act* , currency, stamps, confiscated videos and other media.

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

" **Act** " means the Environmental Protection Act , R.S.O. 1990, C. E-19 as amended;
" **Activated Carbon Maintenance and Replacement Plan** " means the document amended as item (52) of Schedule "A";
" **AERMOD** " is as defined in Ontario Regulation 419/05 subsection 6(1).
" **Air Pollution Control System** " means the quench pre-scrubber tower, the cooling tower, the caustic storage and delivery system, the condensing column, the two rotary atomizer modules, the acid absorber and demister system, the induced draft fan, the steam re-heat system, the carbon filter, the HEPA filtration system, the NOx selective non-catalytic reduction (SNCR) system, the Main Stack and all auxiliary equipment

necessary for proper operation of the main components listed in the attached Schedule 1 and approved by this ECA;
" **Autoclave** " means either of the two autoclave sterilization systems, referred to in this ECA as the North and South Autoclaves, complete with the condenser, as described in the Company's application, Schedule 1 of this ECA and in the supporting documentation referred to herein, to the extent approved by this ECA;
" **Baseline Parameters** " means the operation and emissions parameters listed in Column 1 of Schedule 2 of this ECA;
" **Biomedical Waste** " is as defined in the Guideline and generated by any of the following:
(a) human health care and residential facilities;
(b) animal health care facilities;
(c) medical research and medical teaching establishments;
(d) veterinary research and veterinary teaching establishments;
(e) health care teaching establishments for human health care;
(f) health care teaching establishments for animal health care;
(g) clinical testing or research laboratories;
(h) the professional office of a health professional within the meaning of the Regulated Health Professions Act, 1991;
(i) the professional office of a member of the College of Veterinarians of Ontario;
(j) mortuaries and funeral establishments, including any similar establishments for pets and other animals;
(k) facilities involved in the production of vaccines;
(l) facilities involved in mobile health care for humans; and
(m) facilities involved in mobile health care for animals,
" **Boilers** " means the two boilers as described in the Company's application, Schedule 1 of this ECA and in the supporting documentation referred to in Schedule "A";
" **Bottom Ash** " means the ash residue resulting from combustion of waste and being discharged from the primary chamber of the Incinerator into an ash pit using a hydraulic ram;
" **Carbon Bed** " means the carbon filter bed associated with the Air Pollution Control System and as specified in the Activated Carbon Maintenance and Replacement Plan;
" **Company** " means any person(s) that is responsible for the operation of the Site and its Equipment, and includes Stericycle, Inc., its successors and assigns;
" **Continuous Monitoring and Control System** " means the differential pressure gauges, the pH monitoring devices, flow rate measuring devices, waste feed measuring device the continuous temperature monitors, continuous carbon monoxide monitor, continuous oxygen monitor together, NO_X monitoring system with all associated sampling lines, analysers, recording devices, computer hardware and software and other appurtenances necessary for proper operation of the Continuous Monitoring and Control System, as described in Schedule 1 of this ECA;
" **Controlled Shutdown** " means the complete cessation of operation of the incinerator after lockout, if the exceeded operational and/or emission performance parameters

cannot be normalized below required ECA limits within a 24-hour period.
" **Director** " means a Director of the Environmental Assessment and Permissions Branch of the Ministry of the Environment, Conservation and Parks, or successor;
" **District Manager** " means the District Manager of the Halton-Peel District Office of the Ministry of the Environment, Conservation and Parks, or successor;
" **ECA** " means the Environmental Compliance Approval number A680324, including its schedules, issued under the Act, as amended from time to time;
" **Emergency Bypass Stack** " means the exhaust stack that discharges emissions generated during combustion of waste in the primary chamber of the Incinerator after those emissions have been controlled by the secondary chamber of the Incinerator;
" **Emergency Power Supply** " means a diesel fuel fired generator set, described in Schedule 1 of this ECA, rated at 500 kilowatts, capable of supplying sufficient electrical power to maintain the proper functioning of the Incinerator, the Air Pollution Control System and the Continuous Monitoring and Control System to ensure compliance with the Performance Conditions during external power supply failures;
" **Emergency Shutdown** " means an immediate cut-off of all waste into the primary chamber of the Incinerator; followed by natural gas standby until the emergency condition has been resolved, or the controlled termination of the combustion process when all the residual waste has been combusted;
" **Equipment** " means the North Autoclave, the South Autoclave, the Boiler, the Incinerator, the Air Pollution Control System, the Reusable Container System, the Continuous Monitoring and Control System together with all associated pieces of equipment necessary for the proper functioning of the major components listed in the above, as described in Schedule 1 of this ECA;
" **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 ECA in accordance with section 26 of O. Reg. 419/05 and the Procedure Document;
" **Guideline** " means the Ministry document, "Guideline C-4: The Management of Biomedical Waste in Ontario", dated November 2009, as amended from time to time;
" **Incineration Waste** " means any other waste, approved by this ECA, that is not a Treatable Waste;
" **Incinerator** " means JOY ECOLAIRE 2500 TESI W/SR62H, or equivalent, controlled air 2-stage incinerator, described in Schedule 1 of this ECA;
" **Lockout** " means a temporary termination of the waste feed to the incinerator; either triggered by a waste feed lockout set point alarm, as prescribed in Schedule 2 of this ECA; and/or while the Incinerator is under shutdown mode; and/or when the Incinerator or the Continuous Monitoring and Control System is under maintenance or inoperative;
" **Main Stack** " means the exhaust stack that discharges emissions generated during combustion of waste in the primary chamber of the Incinerator after those emissions have been controlled by the secondary chamber of the Incinerator and the Air Pollution Control System, as described in Schedule 1 of this ECA;
" **Manager** " means the Manager, Technology Standards Section, Technical

Assessment and Standards Development Branch of the Ministry of the Environment, Conservation and Parks, or successor, including any other person who represents and carries out the duties of the Manager, or successor, as those duties relate to the conditions of this ECA;
" **Ministry** " means the Ontario Ministry of the Environment, Conservation and Parks, or successor, unless specific reference is made to another ministry;
" **North Autoclave** " means the autoclave sterilization system, complete with one condenser, as described in Schedule 1 and Item 37 of Schedule "A" of this ECA;
" **O. Reg. 419/05** " means the Ontario Regulation 419/05 , Air Pollution – Local Air Quality, as amended;
" **OWRA** " means the Ontario Water Resources Act , R.S.O. 1990, c. O.40, as amended;
" **PA** " means the Pesticides Act , R.S.O. 1990, c. P-11, as amended from time to time;
" **Pathological Waste** " is as defined in Reg. 347;
" **Performance Conditions** " means the conditions listed in Section D of this ECA, entitled "Design and Performance Requirements for the Equipment and the Site";
" **Point of Impingement** " means any point outside the Site in the natural environment and as defined in section 2 of O. Reg. 419/05;
" **Pre-Test Plan** " means a document, part of the Source Testing, prepared following the requirements of Part A, Section 5 of the Source Testing Code;
" **Process** " means:
(a) in relation to Treatable Waste, the receipt of Treatable Waste at the Site, its treatment in an Autoclave to achieve sterilization and the segregation of the treated waste into the appropriate storage area; and
(b) in relation to Incineration Waste, the receipt, segregation of the Incineration Waste into the appropriate storage or staging area, Destruction of the Incineration Waste in the primary chamber of the Incinerator, and segregation, handling and disposal of the Residual Waste,
Note: " **Processed** " and " **Processing** " have a corresponding meaning;
" **Provincial Officer** " means any person designated in writing by the Minister as a provincial officer pursuant to section 5 of the OWRA or section 5 of the EPA or section 17 of PA;
" **Publication NPC-103** " means the technical publication NPC-103, as amended, included in the "Model
Municipal Noise Control By-Law, Final Report, August 1978" document;
" **Publication NPC-233** " means Ministry Publication NPC-233, Information to be Submitted for Approval of Stationary Sources of Sound, October 1995, as amended;
" **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.
" **Reg. 347** " means Regulation 347 , R.R.O. 1990, as amended;
" **Rejected Waste** " means any waste that cannot be processed at the facility or waste which the Site is not approved to accept;

" **Residence Time** " means the period of time combustion gases are subjected to the minimum temperature and oxygen content as specified by conditions 43(1) and 44(1)(c) of this ECA after the flame front where the combustion is fully developed and after the point of final addition of air in the secondary chamber of the Incinerator;
" **Report EPS 1/PG/7** " means Environment Canada Report EPS 1/PG/7, "Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emissions from Thermal Generation", December, 2005;
" **Residual Waste** " means the spent filter material from the carbon filter and the HEPA filter and the Bottom Ash generated as a result of Processing waste in the Incinerator;
" **Reusable Container System** " means all equipment and materials associated with the Biosystems reusable sharps container system.
" **Site** " means the waste disposal site permitted under this ECA, located at 95 Deerhurst Drive, City of Brampton, in the Regional Municipality of Peel;
" **Source Testing Code** " means the Ontario Source Testing Code, dated June 2010, prepared by the Ministry, as amended;
" **Source Testing** ” means sampling and testing to measure emissions resulting from operating the Incinerator under conditions which yield the worst case emissions within the approved operating range of the Incinerator which satisfies paragraph 1 of subsection 11(1) of O. Reg. 419/05;
" **South Autoclave** " means the autoclave sterilization system, complete with one condenser, as described in Item 56 of Schedule "A" of this ECA;
" **Test Contaminants** " means those contaminants set out in Schedule 7 of this ECA;
" **Trained** " means competent and knowledgeable in the operation of the Site through instruction and practice, as required and detailed in condition 54(1) of this ECA.;
" **Treatable Waste** " means that waste which is to be treated using the North or South Autoclave. More specifically, "Treatable Waste" means Biomedical Waste that is limited to non-anatomical Waste Class 312P; and
" **Undiluted Gases** " means the flue gas stream which contains oxygen, carbon monoxide, total hydrocarbons and all contaminants in the same concentrations as they exist in the flue gas stream emerging from an individual piece of equipment.

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

TERMS AND CONDITIONS

A. GENERAL REQUIREMENTS

1. Compliance

(1) The Company shall ensure compliance with all the conditions of this ECA and shall ensure that any person authorized to carry out work on or operate any aspect of the Site is notified of this ECA and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
(2) Any person authorized to carry out work on or operate any aspect of the Site shall

comply with the conditions of this ECA.

2. In Accordance

(1) Except as otherwise provided by these conditions, the Site shall be designed, developed, used, maintained and operated, and all facilities, equipment and fixtures shall be built and installed, in accordance with the Applications for a Certificate of Approval (Waste Disposal Site) dated October 27, 1998 and June 7, 2000, and the Applications for a Certificate of Approval (Air) dated October 27, 1998 and June 7, 2000 and the supporting documentation, plans and specifications listed in Schedule "A".

(2) Use of the Site for any other type of waste, or other waste management activity, is not permitted under this ECA, and requires obtaining a separate approval amending this ECA.

3. Interpretation

(1) Where there is a conflict between a provision of any document, including the application, referred to in this ECA, and the conditions of this ECA, the conditions in this ECA shall take precedence.

(2) Where there is a conflict between the application and a provision in any documents listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application, and that the Ministry approved the amendment.

(3) Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.

(4) The conditions of this ECA are severable. If any condition of this ECA, or the application of any condition of this ECA to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this ECA shall not be affected thereby.

4. Other Legal Obligations

(1) The issuance of, and compliance with, this ECA does not:

(a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement; or

(b) limit in any way the authority of the Ministry to require certain steps be taken or to require the Company to furnish any further information related to compliance with this ECA.

(2) All wastes at the Site shall be managed and disposed in accordance with the EPA and Reg. 347.

5. Change of Owner

(1) The Company shall notify the Director, in writing, and forward a copy of the notification to the District Manager, within 30 days of the occurrence of any changes in the following information:

(a) the ownership of the Site;

(b) appointment of, or a change in, the operator of the Site;

(c) the name or address of the Company;

(d) the partners, where the Company is or at any time becomes a partnership and a copy of the most recent declaration filed under the Business Names Act , R. S. O.

1990, c. B.17, shall be included in the notification.
(2) No portion of this Site shall be transferred or encumbered prior to or after closing of the Site unless the Director is notified in advance and sufficient financial assurance is deposited with the Ministry to ensure that these conditions will be carried out.
(3) In the event of any change in ownership of the Site, other than change to a successor municipality, the Company shall notify the successor of and provide the successor with a copy of this ECA, and the Company shall provide a copy of the notification to the District Manager and the Director.

6. Inspections

(1) No person shall hinder or obstruct a Provincial Officer from carrying out any and all inspections authorized by the OWRA, the EPA, or the PA, of any place to which this ECA relates, and without limiting the foregoing:

(a) to enter upon the premises where the approved works are located, or the location where the records required by the conditions of this ECA are kept;
(b) to have access to, inspect, and copy any records required to be kept by the conditions of this ECA;
(c) to inspect the Site, related equipment and appurtenances;
(d) to inspect the practices, procedures, or operations required by the conditions of this ECA; and
(e) to sample and monitor for the purposes of assessing compliance with the terms and conditions of this ECA or the EPA, the OWRA or the PA.

7. Information and Record Retention

(1) Any information requested, by the Ministry, concerning the Site and its operation under this ECA, including but not limited to any records required to be kept by this ECA shall be provided to the Ministry, upon request **,** in a timely manner **.**
(2) The Company shall maintain and retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the operation of the Equipment, and monitoring and recording activities, in both hard copy and electronic formats.
(3) The receipt of any information by the Ministry or the failure of the Ministry to prosecute any person or to require any person to take any action, under this ECA or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:

(a) an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any term or

condition of this Approval or any statute, regulation or other legal requirement; or
(b) acceptance by the Ministry of the information's completeness or accuracy.

(4) Any information relating to this ECA and contained in Ministry files may be made available to the public in accordance with the provisions of the Freedom of Information and Protection of Privacy Act , R.S.O. 1990, C. F-31.

8. Financial Assurance

(1) The Company shall maintain Financial Assurance, as defined in Section 131 of the Act, for the amount of two hundred twenty-five thousand Canadian dollars (225 000 CAD). This Financial Assurance shall be in a form acceptable to the Director and shall provide sufficient funds for compliance with and performance of any action specified in the Certificate, including waste analysis, monitoring and disposal of all quantities of waste at the Site at any one time, transportation of waste, Site clean-up as well as closure and post-closure care of the Site.

(2) Commencing on March 31, 2023 and at intervals of three (3) years thereafter, the Company shall submit to the Director, a re-evaluation of the amount of Financial Assurance to implement the actions required under condition 8(1). The re-evaluation shall include an assessment based on any new information relating to the environmental conditions of the Site and shall include the costs of additional monitoring and/or implementation of contingency plans required by the Director upon review of the closure plan, quarterly and annual reports. The Financial Assurance must be submitted to the Director within twenty (20) days of written acceptance of the re-evaluation by the Director.

(3) The amount of Financial Assurance is subject to review at any time by the Director and may be amended at his/her discretion. If any Financial Assurance is scheduled to expire or notice is received, indicating Financial Assurance will not be renewed, and satisfactory methods have not been made to replace the Financial assurance at least sixty (60) days before the Financial Assurance terminates, the Financial Assurance shall forthwith be replaced by cash.

9. Liability Insurance

(1) The Company shall, at all times while the Site is operating, maintain an environmental impairment liability insurance policy in the amount of at least two million Canadian dollars (2 000 000 CAD) and a general third party liability insurance policy in the amount of at least ten million Canadian dollars (10 000 000 CAD).

10. Complaint Response Procedure

(1) If at any time, the Company receives complaints regarding the operation of the Site, the Company shall respond to these complaints according to the following procedure:

(a) The Company shall record each complaint on a formal complaint form entered in a sequentially numbered log book. The information recorded shall include the nature of the complaint, the name, address and the telephone number of the complainant and the time and date of the complaint;
(b) The Company, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, noting and recording the prevalent weather conditions, wind strength and wind direction at the time of the complaint, and shall proceed to take the necessary actions to eliminate the cause of the complaint, forward a formal reply to the complainant and within 24 hours of the complaint having been received notify by telephone and in writing the District Manager of the complaint and the actions taken; and
(c) The Company shall prepare a report within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the reoccurrence of similar incidents.

11. Spill Response and Reporting

(1) The Company shall promptly take all necessary steps to contain and clean up any spills which result from the operation of the Site.
(2) All spills, upsets, exceedance of any concentration limit prescribed in condition 44(1), as well as any instance of the use of the Emergency Bypass Stack, shall be immediately reported to the Ministry's Spills Action Centre at (416) 325-3000 or 1-800-268-6060, with the following information to be recorded:
(a) the nature and cause of the spill or upset, and

(b) the action taken for clean-up, as well as any corrective or preventative measures taken to avoid any similar occurrences in the future.

B. RECEIPT, STORAGE AND HANDLING OF WASTE

12. General

(1) Except as otherwise provided by these conditions, the collection, handling and disposal of Biomedical Waste shall be carried out in accordance with the Guideline.

(2) All waste unloading shall occur indoors at all times;
(3) All waste received at, but not Processed at the Site, shall be stored indoors at all

times, pending transfer to final disposal with the exception of waste stored in accordance with conditions 20(1) and 20(2);
(4) Treatable Waste must be stored, pending Processing, as described in the information listed in Schedule "A"; and
(5) Only Treatable Waste may be Processed in an Autoclave;
(6) All other acceptable wastes received at the Site shall be stored, transferred and/or Processed in the Incinerator, in accordance with this ECA and information listed in Schedule "A".
(7) The Company shall ensure that only waste haulers approved by the Ministry to handle these wastes are used to transport waste to and from the Site.

13. Service Area

(1) The Company may only receive waste generated within Canada and the United States of America.
(2) No Biomedical Waste shall be received from the United States of America unless:
(a) the Biomedical Waste is being transferred from a facility under the control of Stericycle, Inc.; and
(b) the Biomedical Waste has been identified as being equivalent to waste class 312P by being identified on the manifest with code UN 3291.
(3) Any waste received from the United States of America that does not meet the labelling and/or packaging standards listed in Guideline C-4 shall be immediately re-labelled upon receipt to provide a clear indication of the nature of the waste and the treatment requirements for that waste. Any waste that is not clearly identified shall be incinerated on-site.
(4) All waste received from the United States of America shall be segregated from all other waste on-site.

14. Acceptable Waste Types

(1) Only Waste Class Nos. 148 (Miscellaneous waste inorganic chemicals), 261 (Pharmaceutical), 262 ((Detergents and Soaps), 264 (Photoprocessing), and 312 (Pathological) as defined in the New Ontario Waste Classes, and dated January 1986 or as revised, Biomedical wastes and solid non-hazardous wastes contracted for product destruction may be received at this Site.

15. Approved Waste Receiving Rate

(1) The total, maximum rate at which the Company may receive waste at the Site for Processing in an Autoclave and/ or Transfer and/ or Processing in the Incinerator shall be 95 tonnes per day.

16. Approved Waste Storage Capacity

(1) The maximum amount of Processed, unprocessed and Residual Waste that may be present at the Site is limited to 250 tonnes at any time.

17. Waste Screening

(1) Incoming waste containers shall be visually inspected by a Trained employee, prior to being accepted at the Site, to ensure that the Site is approved to accept that type of waste. This inspection does not require opening the containers, but shall include inspection to determine that the containers are undamaged and correctly and

appropriately labelled and that the wastes are properly packaged.
(2) All incoming waste that arrives in leaking, damaged, improperly labelled, packaged or identified containers shall be repackaged to contain any leakage and re-labelled appropriately.
(3) Only properly identified, packaged, undamaged and labelled waste containers shall be Processed at the Site.
(4) Upon receipt at the Site, incoming materials must be categorized, by a Trained employee, as either Treatable Waste or Incineration Waste;

18. Waste Storage and Receiving Restrictions

(1) The Company shall ensure that all Treatable Waste except sharps received at the Site are Processed within 72 hours of receipt. If, for any reason, this is not possible, the Company shall ensure that all wastes are placed in refrigerated storage or removed from the Site, within 24 hours of the equipment or process failure or otherwise in accordance with the procedures as described in the information listed in Schedule "A", and disposed at an approved waste disposal site;
(2) Subject to Condition 18(1), if Treatable Waste is not Processed within 72 hours of receipt, no additional waste may be received at the Site for Processing in an Autoclave, until such time as the Site can operate in compliance with the conditions of this ECA;
(3) Waste Class 261 may be stored at the Site for a maximum of 30 days;
(4) All anatomical waste, including anatomical waste which is also cytotoxic, shall be refrigerated as soon as the waste has been weighed, inspected, time-stamped and recorded into the database unless it can be fed into the primary chamber of the Incinerator within 12 hours of having been recorded into the database; and
(5) All cytotoxic waste shall be immediately stored in separate, secure and clearly marked areas.

19. Treatable Waste Received in Biosystems Reusable Containers

(1) Treatable Waste received at the Site in Biosystems containers shall be unloaded and stored prior to processing in an area specified for only Biosystems containers.
(2) Biosystems containers received at the site that have been bagged prior to receipt at the site shall be manually removed from the rack and disposed of immediately in the next load of waste being prepared for an Autoclave. These containers shall not be reused.
(3) Biosystems containers that will not be treated on site shall be stored in a designated area inside the building or in a locked authorized vehicle outside in a fenced area.
(4) Biosystems containers for storage or transport shall be removed from the site within 15 days of receipt at the Site.
(5) In the event that legislation is promulgated that regulates biomedical waste containers, the requirements of this condition may be amended in order to conform to any new regulatory requirements.

20. Outdoor Activities

(1) Unprocessed waste shall not be stored outside the building in any containers or in any vehicles, but may remain in refrigerated vehicles within a fenced, secure area at the Site, up to a maximum of four 10-tonne refrigerated truckloads, for a maximum of

12 hours while waiting to be unloaded; and
(2) Only Bottom Ash, demonstrated to be non-hazardous, up to a maximum of two 10-tonne lugger bins, and waste Processed in an Autoclave, up to a maximum of five 15-tonne compactor bins, may be stored outside the building in leak-proof, completely covered containers within a secure, fenced and paved area; and
(3) All waste present outdoors at the Site is subject to the overall limitation referred to in condition 16(1).

21. Processed Waste Handling

(1) Each load of Processed material and other waste, including Residual Waste, destined for final disposal, shall be removed from the Site in accordance with the information listed in Schedule "A".
(2) All biomedical waste Processed in an Autoclave, destined for final disposal, shall be packaged in accordance with the Guideline.

22. Signage and Security

(1) The Site shall be maintained in a secure manner to prevent unauthorized persons from entering the Site.
(2) A sign shall be posted outside the building in a prominent location to indicate when the Site is open, and shall include a telephone number for an emergency response contact.

23. Nuisance Impacts

(1) The Company shall ensure that the Site is operated in a manner that is clean, orderly and hygienic and that prevents any off-site impacts, including the impacts of vermin, vectors, dust, litter, noise and traffic on the environment and the public.

24. Wastewater Management

(1) The Company shall ensure that all wastewater generated is discharged in accordance with the applicable municipal sewer use by-laws or shipped off-site for treatment.

25. Disposal of Residual Waste

(1) The Company shall transfer the spent carbon and spent HEPA filters for disposal at a site approved to accept hazardous waste for disposal.
(2) Bottom Ash that is not leachate toxic is not considered hazardous waste and may therefore be disposed of as solid, non-hazardous waste at a landfill site approved to receive and dispose of such waste.
(3) Waste Processed in an Autoclave is not considered hazardous waste and may therefore be disposed of as solid, non-hazardous waste at a landfill site approved to receive and dispose of such waste.

C. OPERATION AND MAINTENANCE OF THE EQUIPMENT AND SITE

26. General

(1) The Company shall ensure that the Equipment and the Site are properly operated and maintained at all times.

27. Operating and Maintenance Manual

(1) Maintain an operating and maintenance manual that outlines the operating procedures and a maintenance program for the all Equipment on-site that includes, but

is not limited to the following:

(a) routine operating procedures in accordance with recommendations of the equipment manufacturers and good engineering practices and other requirements contained in this ECA;
(b) a detailed waste acceptance protocol, including appropriate characterization and pre-screening procedures for all incoming wastes and acceptance procedures for waste received in the Biosystems reusable containers, maintenance and cleaning procedures associated with the cleaning of Biosystems containers and operation instructions and safety requirements for the associated washing equipment, with special attention to Incineration Waste from any new customers with a view on combustion characteristics as well as potential impact on Bottom Ash quality;
(c) inspection programs, including frequency of inspection of all pieces of Equipment, and the methods or tests employed to detect when maintenance is necessary;
(d) repair and maintenance programs, including the frequency of routine maintenance of all pieces of Equipment;
(e) emergency procedures;
(f) instructions for any record keeping activities relating to operation, inspection and maintenance of the Equipment;
(g) any other plans and procedures which are necessary because of the special nature of the Site, the materials used at the Site, or the location thereof;
(h) a list of personnel positions responsible for operation and maintenance, including supervisory personnel and personnel responsible for recording and reporting pursuant to the requirements of this ECA, along with the training and experience required for the positions and a description of the responsibilities;
(i) a list and location of spare parts to be kept available at the Site;
(j) the procedures for recording and responding to environmental complaints;
(k) all appropriate measures to minimize dust, odours, noise and other nuisances generated from all potential sources at the Site; and
(l) the Activated Carbon Maintenance and Replacement Plan

(2) provide the operating and maintenance manual for inspection by staff of the Ministry upon request; and
(3) implement the recommendations of the operating and maintenance manual.

28. Emergency Response and Spill Contingency Plan

(1) The Company shall maintain an emergency response and spill contingency plan at the Site at all times when the Site is operational and shall submit the same to the District Manager for their information, the local Fire Department and the City of Brampton for their reference before any waste is received at the Site. The emergency response and contingency plan shall contain, as a minimum:

(a) emergency response procedures, including notification procedures in case of spills, fires and explosions;
(b) list of home and business phone numbers and work locations of all person(s) responsible for the Site;
(c) list of emergency phone numbers for the local Ministry office, Ministry's Spills Action Centre, and the Local Fire Department;
(d) measures to prevent spills, fires and explosions;
(e) description and procedures for use of fire fighting as well as spill clean-up related equipment and control and safety devices;
(f) maintenance and testing program for spill clean-up equipment and fire fighting equipment;
(g) training of Site operators and Site emergency response personnel;
(h) an emergency Site plan, identifying the location and nature of wastes on Site.

(2) The Company shall, as a minimum, review the emergency response and spill contingency plan on an annual basis, and, if amended, immediately submit the amended emergency response and contingency plan to the District Manager for their information, the local Fire Department and the City of Brampton.
(3) The Company shall ensure that at all times that equipment and material are kept on hand and in good repair for immediate use in the event of:.

(a) any change in process parameters which results or potentially could result in an excursion from approved operational ranges;
(b) any fire or explosion;
(c) any unauthorized discharge of a contaminant into the natural environment or interior of any building; or
(d) any spill within the meaning of Part X of the Act.

29. Equipment and Site Inspections

(1) The Company shall conduct regular inspections of the Equipment and Site to ensure that all pieces of Equipment and the Site are operated in a manner that will not negatively impact the environment. Any deficiencies detected during these regular inspections, that might negatively impact the environment, shall be promptly corrected. A written record shall be prepared, which includes the following:

(a) name and signature of Trained employee conducting the inspection;

(b) date and time of the inspection;
(c) list of pieces of Equipment inspected and all deficiencies that might negatively impact the environment observed;
(d) recommendations for remedial action and actions undertaken;
(e) date and time of maintenance activity; and
(f) a detailed description of the maintenance activity.

30. Emergency Power Supply

(1) The Company shall maintain the Emergency Power Supply in proper working condition at all times so that it is capable of maintaining the proper operation of all components of the Incinerator, the Air Pollution Control System and the Continuous Monitoring and Control System in order to ensure compliance with the Performance Conditions and to continue to operate the Incinerator and the Air Pollution Control System within the Operating Window.

31. Refrigerated Storage Units

(1) The Company shall ensure that the refrigerated storage units are operated at a temperature equal to or lower than 4 ^{o} C at all times when waste is required to be refrigerated;

32. Autoclaves

(1) The Company shall Process a maximum of 70 tonnes per day of Treatable waste in the Autoclaves.

(2) The Company shall ensure that each of the two Autoclaves is operated at all times in such a manner that:

(a) the load per cycle does not exceed 1,590 kilograms;

(b) the sterilization temperature is maintained at 149 ^{o}C +/ or - one (1) percent; and
(c) the sterilization cycle per load lasts at least 20 minutes when using the North Autoclave and 30 minutes when using the South Autoclave.

33. Incinerator and Air Pollution Control System

(1) The Company shall ensure that the waste feed into the Incinerator does not exceed 670 kilograms per hour, up to a maximum of 10 tonnes per day, at any time.
(2) The Company shall ensure that the temperature of the flue gas at the exit of the de-mister section of the Air Pollution Control System maintaining a minimum of 10 ^{o}C difference with the Carbon Bed inlet temperature.
(3) The Company shall ensure that the flue gas is reheated to a temperature not exceeding 57 ^{o}C before entering the Carbon Bed.
(4) The Company shall plan any Carbon replacement to occur eight (8) weeks after the annual source testing has been completed to confirm, based on the Source Testing results, that the Carbon half-life has been adequately determined for the Carbon Bed to effectively control the emissions of mercury, as well as dioxins, furans and dioxin-like PCB compounds.
(5) The Company shall ensure that appropriate equipment and systems are available to continuously monitor and provide visual and audible warnings for the warning set points detailed in Schedule 2.

34. Failure to Operate in Accordance

(1) The Company shall forthwith bring the Incinerator to a waste feed Lockout if one or more Baseline Parameters exceeds the waste feed Lockout set point continuously for a period of time longer than the time referred to in Column 6 of the attached Schedule 2; or under Controlled Shutdown if the Approval exceeded Baseline Parameters cannot be normalized below required limits within a 24-hour period.

35. Power Failure

(1) Upon the reduction, loss or failure of the external power source to the Site, the Company shall forthwith, in order to maintain compliance with the Performance Conditions of this ECA, take all reasonable steps to minimize all discharges from the Site, including steps to switch to the Emergency Power Supply within two minutes of the external power failure having occurred, and to control, reduce or halt combustion in the Incinerator, as may be necessary to ensure continued compliance with Performance Conditions and the ability to operate within the Operating Window.
(2) Despite subsection (a), the Company shall forthwith proceed to an Emergency Shutdown of the Incinerator, if there is a loss or failure of the external power supply; pursuant to subsection (a), and the Emergency Power Supply is not available within 2 minutes of the failure of the external power supply having occurred or the Emergency Power Supply fails while the external power supply is not available.

36. Air Pollution Control System Failure

(1) In the event that the Air Pollution Control System fails and/or malfunctions, the Company shall forthwith initiate an Emergency Shutdown of the Incinerator, while maintaining the temperature of the secondary chamber of the Incinerator in accordance with conditions 43(1) and 43(2).

37. Continuous Monitoring and Control System Failure

(1) In the event that the Continuous Monitoring and Control System fails and/or malfunctions, the Company shall bring the Incinerator to a waste feed Lockout, and not resume the waste feed to the Incinerator until such time that the Continuous Monitoring and Control System has been repaired and operates in compliance with the design and performance specifications set out in Schedules 3, 4, 5 and 6.

38. Use of Emergency Bypass Stack

(1) The Company shall not use the Emergency Bypass Stack, except during the following conditions:

(a) start-up of the Incinerator, when no waste has been fed into the Incinerator; or
(b) failure and/or malfunction of the Air Pollution Control System pursuant to condition 36(1) above.

(2) When use of the Emergency Bypass Stack is necessary, pursuant to condition 38(1)(b) above, the Company shall forthwith bring the Incinerator to an Emergency Shutdown, while maintaining the temperature in the secondary chamber of the Incinerator at a minimum temperature of 1000 °C by burning natural gas only, until all waste is completely incinerated and the Bottom Ash discharged from the primary chamber of the Incinerator.

(3) The Company shall forthwith notify the District Manager and Spills Action Centre by telephone, when use of the Emergency Bypass Stack occurs.

(4) In the event of any use of the Emergency Bypass Stack, the Company shall prepare and submit a report to the District Manager within five (5) calendar days of the use, which shall include the following:

(a) date of the occurrence;
(b) general description of the occurrence;
(c) duration of the occurrence;
(d) effect of the occurrence on the emissions from the Incinerator;

(e) measures taken to alleviate the effect of the occurrence on the emissions from the Incinerator; and
(f) measures taken to prevent the occurrence of the same or similar occurrence in the future.

D. DESIGN AND PERFORMANCE REQUIREMENTS FOR THE EQUIPMENT AND THE SITE

39. Site (Noise)

(1) The Company shall ensure that the noise emissions from the Site comply with the limits set in accordance with Publication NPC-300.

40. Refrigerated Storage Units

(1) The Company shall ensure that there is a minimum of 130 cubic metres of refrigerated storage space available to accommodate 35 tonnes of waste.

41. Autoclaves:

(1) The Company shall ensure that the Autoclaves meets the requirements set out in the Guideline at all times when waste is Processed in either Autoclave.

42. Bottom Ash Quality

(1) The Company shall ensure that the organic content, measured as carbon, of the Bottom Ash does not exceed 10 percent by weight.

43. Secondary Chamber of the Incinerator

(1) The Company shall have the Incinerator designed in such a manner as to ensure that the Incinerator is capable of maintaining, on a continuous basis, a temperature of not less than 1100°C in the secondary chamber of the Incinerator.
(2) The Company shall have the Incinerator designed and operated in such a manner as to ensure that the following performance conditions are met at all times:

(a) The Incinerator shall be capable of regulating, by means of auxiliary fuel control, the temperature at the outlet of the secondary chamber of the Incinerator, so as to ensure that a temperature of not less than 1000 °C is attained prior to introduction of any waste into the primary chamber of the Incinerator during the start-up, and that the said temperature is thereafter maintained during the entire incineration cycle and subsequent shutdown until all waste combustion is completed in the primary chamber of the Incinerator, and until the final Bottom Ash is discharged from the primary chamber of the Incinerator.
(b) The Incinerator shall include primary and secondary air control systems, which are capable of automatically adjusting

the distribution and the quantity of combustion air, in such a manner that changes in the waste feed rate and/or waste composition or irregularities in the loading and/or combustion shall not adversely affect the performance of the Incinerator.
(c) The Residence Time for the combustion gases in the secondary chamber of the Incinerator shall be a minimum of one second at a temperature of 1000 °C, and shall be calculated from the point where most of the combustion has been completed and the incineration temperature fully developed, to the last thermocouple, where the temperature of not less than 1000 °C is maintained.
(d) The Incinerator shall provide and maintain a high degree of gas turbulence and mixing in the secondary chamber of the Incinerator.
(e) The Incinerator shall achieve the temperature, Residence Time, residual oxygen and turbulence requirements over the complete range of operating parameters, including feed rate, feed characteristics, combustion air, flue gas flow rate and heat losses.

44. Concentration Limits

(1) The Company shall, at all times, operate the Incinerator and the Air Pollution Control System in such a manner as to ensure that the following performance conditions are met:

(a) The concentration of nitrogen oxides at the Main Stack shall be not more than 187 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, calculated as the rolling arithmetic average of 24 hours of data derived from one-hour rolling average amounts measured by the Continuous Monitoring and Control System.
(b) The concentration of carbon monoxide at the Main Stack, shall be not more than 9 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, calculated as the rolling arithmetic average of 12 hours of data derived from one-hour rolling average amounts measured by the Continuous Monitoring and Control System.

(c) The residual oxygen in the Undiluted Gases at the outlet of the secondary combustion chamber of the incinerator shall be not less than 6 percent by volume on a dry basis, calculated as the rolling arithmetic average of 6 minutes of data measured by the Continuous Monitoring and Control System.
(d) The concentration of hydrochloric acid at the Main Stack shall be not more than 7 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.
(e) The concentration of suspended particulate matter at the Main Stack shall be not more than 17 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.
(f) The Toxic Equivalent Concentrations of dioxins, furans and dioxin-like PCBs at the Main Stack:

(A) Shall be not more than 80 picograms per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.
(B) The toxicity equivalent concentration of dioxins, furans and dioxin-like PCBs shall be calculated in accordance with Schedule 8 of O. Reg. 419/05. The Toxic Equivalent Factors (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 Technical Assessment and Standards Development Branch shall be contacted for appropriate procedures to convert non-isomer specific data to Toxic equivalents (TEQs).

(g) The concentration of organic matter having a carbon content, expressed as equivalent methane, in the Undiluted Gases at the outlet of the secondary chamber of the Incinerator and being an average of ten measurements taken at approximately one minute intervals, shall be not more than 50 parts per million by volume on dry basis, as measured by the Continuous Monitoring and Control System during Compliance Source Testing.

(h) The concentration of sulphur dioxide at the Main Stack shall be not more than 17 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, calculated as the rolling arithmetic average of 24 hours of data measured by Compliance Source Testing.

(i) The concentration of mercury at the Main Stack shall be not more than 15 micrograms per dry cubic metre normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.

(j) The concentration of cadmium at the Main Stack shall be not more than 7 micrograms per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.

(k) The concentration of lead at the Main Stack shall be not more than 26 micrograms per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.

(2) The data reporting for the Baseline Parameters requires the following:

(a) Data recording minute-by-minute whenever the averaging time for a parameter limit is less than or equal to an hour; in such cases, the data acquisition system is expected to “roll the data” minute-by-minute to produce a series of rolling averages.

(b) Data recording every fifteen minutes whenever the averaging time for a parameter limit is more than an hour; in such cases, the data acquisition system is expected to “roll the

data” every fifteen minutes to produce a series of rolling averages.

E. MONITORING

45. Noise

(1) The Company shall carry out acoustic audit measurements on the actual noise emissions due to the operation of the Site, in accordance with the procedures in Publication NPC-103.
(2) The Director may not accept the results of the acoustic audit if the requirements of Publication NPC-233 were not followed.
(3) If the Director does not accept the results of the acoustic audit the Director may require the Company to repeat the acoustic audit.

46. Autoclaves

(1) Every sixth day of operation of each of the two Autoclaves, the Company shall undertake Verification Testing as outlined in the Guideline.
(2) Waste loads tested shall be representative of the waste normally Processed in the Autoclaves to confirm that the outgoing waste is acceptable for disposal at an approved sanitary landfill site;
(3) Spore vials associated with the testing shall be cultured and monitored in accordance with the specifications of the manufacturers;
(4) If any tested load fails, as indicated by Verification Testing, the waste loads shall be reprocessed and the next load retested;
(5) Subject to condition 46(4), if a second tested load fails as well, no further waste may be received to be Processed in the Autoclaves or Processed in the Autoclave until the Company is able to ensure that the Treatable Waste can be effectively Processed in the Autoclaves; and
(6) All failures shall be immediately reported verbally to the District Office or Spills Action Centre and in writing to the District Manager and details of the failure(s) recorded in the Annual Report required under condition 51(1).

47. Continuous Monitoring and Control System

(1) The Continuous Monitoring and Control System shall be equipped with continuous recording devices and comply with the requirements outlined in the attached Schedules 3, 4, 5, and 6.
(2) The Company shall conduct and maintain a program to continuously monitor:

(a) the temperature in the primary chamber of the Incinerator,
(b) the temperature in the secondary chamber of the Incinerator,
(c) the concentration of carbon monoxide in the Undiluted Gases leaving the secondary chamber of the Incinerator or at

the outlet of the Main Stack,
(d) on an interim basis, the concentration of oxygen in the gases leaving the Air Pollution Control System, which can be used as an indicator of oxygen levels in the Undiluted Gases leaving the secondary combustion chamber of the Incinerator.

(i) Any proposed upgrade to the Air Pollution Control System will require a relocation of the oxygen probe to a location that will monitor oxygen in the Undiluted Gases.

(e) the concentration of nitrogen oxides in the undiluted gases leaving the Air Pollution Control System.
(f) all other Baseline Parameters.

(3) The Company shall, in consultation with the Manager, develop and implement quality assurance and quality control procedures ("QA/QC plan") for the Continuous Monitoring and Control System in accordance with Report EPS 1/PG/7, to be implemented upon written acceptance from the Manager.
(4) The Company shall assess the accuracy of the information contained in the QA/QC plan every three years or sooner to reflect the actual configuration of the Continuous Monitoring and Control System. If the assessment indicates the need for an update of the QA/QC plan, the Company shall submit updated quality assurance procedures and quality control activities plan shall to the Manager for written acceptance.

(a) Notwithstanding condition 47(4) above, by no later than March 31, 2020, the Company shall submit to the Manager and the District Manager, updated quality assurance procedures and quality control activities which will be employed in connection with the Continuous Monitoring and Control System.

(5) The Company shall not alter the quality assurance procedures and quality control activities unless the Director has approved the updated procedures in accordance with condition 47(4) above.

48. Source Testing

(1) The Company shall perform Source Testing to determine the rate of emission of the Test Contaminants in the Main Stack while processing a waste mix that may be encountered during the normal operation of the Incinerator yielding worse case emissions scenario.
(2) The Company shall perform Source Testing following the procedure outlined in Schedule 8 of this ECA to determine the rate of emission of the Test Contaminants from the Incinerator.
(3) The Company shall repeat the Source Testing on an annual basis ("Compliance Source Testing") for all Test Contaminants except for the polycyclic organic matter (excluding benzo(a)pyrene) and volatile organic contaminants, using one waste feed mix as agreed upon in writing by the Manager in consultation with the District Manager.
(4) If the annual Compliance Source Testing indicates that the toxicity equivalent concentration of dioxins, furans and dioxin-like PCBs has remained consistently below 32 picograms per dry cubic metre, normalized to 11 percent oxygen, at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, for five (5) consecutive years, then the Company may exclude dioxins, furans and dioxin-like PCBs from the annual Source Testing every second year as long as the toxicity equivalent concentration of dioxins, furans and dioxin-like PCBs continues to remain below 32 picograms per dry cubic metre normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals.
(5) If the annual Compliance Source Testing indicates that benzo(a)pyrene (as a surrogate of polycyclic aromatic compounds with no set standards or guidelines in O. Reg. 419/05) exceeds O. Reg. 419/05 upper risk threshold, speciation for the polycyclic aromatic compounds listed in Schedule 9 will be required during the following Compliance Source Testing, or sooner if requested by the Director.

49. Testing of Bottom Ash

(1) The Company shall conduct periodic verification testing of the Bottom Ash in accordance with the following:

(a) The Company shall conduct Bottom Ash sampling using the method described in the Ministry document entitled "Protocol for Sampling and Evaluating Fly Ash from Non-Hazardous Solid Waste Incineration Facilities, Ministry of the Environment and Energy, October 1990"; except for the sampling frequency and analytical requirements which are set out in this condition.
(b) The Company shall test the Bottom Ash no less than once per year.
(c) The Company shall analyze the samples in accordance with the Toxicity Characteristic Leaching Procedure described in Section 1 of Reg. 347 for compliance with the contaminant limits set out in Schedule 4 of Reg. 347

(2) If at any time Bottom Ash is produced from waste that includes a new waste stream, the Company shall test that Bottom Ash in accordance with condition 49(1)(a) above before disposing of it.
(3) The Company shall prepare a report on each verification test on the Bottom Ash and submit this report to the District Manager no later than one month after the sampling has been completed in accordance with conditions 49(1)(a) or 49(2) above.
(4) If any of the tests indicate that the Bottom Ash is hazardous based on the results of sampling and analysis, the Company shall immediately notify the District Manager by telephone as well as in writing take action to ensure that hazardous waste is not disposed of at a site that is not approved to accept hazardous waste for storage, transfer and/or final disposal.

F. RECORD KEEPING AND REPORTING

50. General

(1) All records, monitoring data and reports required by the conditions of this ECA shall be maintained at the Site for a minimum period of at least five (5) years from the date of their creation in a hard copy format and as an electronic record and shall be made available for inspection by staff of the Ministry. The records shall include, as a minimum, the following daily records:

(a) the sources, types and weights of all wastes received;
(b) the types, weights and destinations of all wastes transferred from the Site;
(c) the types and weights of all wastes present at the Site at the end of each operating day;
(d) the types and weights of wastes Processed in the Autoclaves;
(e) the types and weights of wastes Processed in the Incinerator;
(f) start time, end time and weight for each Autoclave and Incinerator batch or operating period together with the Trained employee's name responsible for the proper Processing of the respective batch;
(g) any needle stick injuries or accidental direct exposure to Biomedical Waste (e.g., splashing of blood from a container into an employee's face) resulting from the operation of the Site;
(h) results of verification testing required by condition 46(1) of this ECA;
(i) any records related to inspection, repair and maintenance of the Equipment;
(j) records produced by the recording devices associated with the Continuous Monitoring and Control Systems; and

(k) records obtained during Source Testing.

51. Annual Report for the Autoclave and the Site

(1) By March 31st, 2020, and thereafter by each subsequent March 31st, the Company shall prepare and submit to the District Manager, and post on a web site identified by the Company name, an Annual Report covering the operation of the Autoclaves and all waste handling activities relating to the Site during the previous calendar year. Each such report shall include, but not be limited to, the following information:

(a) monthly summaries of tonnages of all wastes Processed at, stored at and/or transferred to the Site;
(b) details of any incidents involving improperly labelled incoming wastes and actions taken to ensure proper handling of all wastes and to minimize the potential for reoccurrence of the improper labelling;
(c) dates when each of the two Autoclaves was operated during the reporting period, including start and finish times as well as the names of the Trained employees who were responsible for the proper operation of the Autoclaves;
(d) details of any loads that failed the Autoclave verification testing required under condition 46(1) **;**
(e) any environmental and operational problems, including spills, that may have negatively impacted the quality of the environment, encountered during the operation of either of the two Autoclaves and any mitigating actions taken, including a summary of any complaints received regarding the operation of the Autoclaves, as described under condition 10(1);
(f) a summary of all complaints received and any actions taken to mitigate;
(g) a statement as to compliance with all conditions of the ECA and with the inspection and reporting requirements of the conditions contained herein; and
(h) any recommendations to minimize environmental impacts and improve Site operations and monitoring programs.

52. Quarterly Report for the Incinerator

(1) The Company shall prepare and submit to the District Manager, and post on a website identified by the Company name, a Quarterly Report covering the operation of the Incinerator, the Air Pollution Control System and Continuous Monitoring and Control System, due not later than one (1) month after the end of the quarter being reported on.

Each report shall include, but not be limited to, the following information:

(a) dates when the Incinerator was operated during the reporting period, including start and finish times as well as the names of the Trained employees responsible for the operation of the Incinerator;
(b) hourly and daily waste feed rates into the Incinerator for each day when the Incinerator was operated during the reporting period;
(c) daily minimum, maximum and average values for all Baseline Parameters for the averaging times referred to in the Performance Conditions;
(d) duration of any secondary warning for carbon monoxide concentration, as triggered by the criteria detailed in Schedule 2, the concentration of carbon monoxide read during each warning period, and the corrective actions taken in response.
(e) duration of any Lockout triggered by an exceedance of the Waste Feed Lockout Set Point values listed in Schedule 2;
(f) detailed explanation of any Lockout triggered by an exceedance of the Waste Feed Lockout Set Point values listed in Schedule 2, and the course of action taken to resume the waste feed;
(g) summary table describing each incident in which any of the concentration limits prescribed in condition 45(1) of this Approval are exceeded. The table shall include for each exceedance:

(i) date of exceedance;
(ii) duration of exceedance;
(iii) the exceeded parameter;
(iv) a description of the exceedance, including the suspected cause; and
(v) corrective actions taken to ensure operation resumes within the approved concentration limits.

the data in the table shall be expressed in the same units of measurement used in

Condition 44(1).

(h) dates, duration and reason for any use of the Emergency Bypass Stack as well as actions taken to eliminate the need for using the Emergency Bypass Stack;
(i) any environmental and operational problems that may have negatively impacted the quality of the environment, encountered during the operation of the Incinerator and any mitigative actions taken, including a summary of any complaints received regarding the operation of the Incinerator. as described under condition 10(1);
(j) a statement as to compliance with all Conditions of this ECA and with the inspection and reporting requirements of the Conditions contained herein, including compliance with Design and Performance Specifications for the Continuous Monitoring and Control System, as set out in Schedules 3, 4, 5 and 6 as well as the quality assurance and quality control procedures for the methods and devices used to monitor the Baseline Parameters;
(k) any recommendations to minimize environmental impacts and improve Incinerator operations and monitoring programs; and
(l) summary of maintenance and repair activities in relation to the Incinerator, Air Pollution Control System and/or the Continuous Monitoring and Control System, including calibration and testing activities, during the reporting period.

53. Incinerator Transient Operation

(1) The Company shall prepare a monthly Incinerator's Transient Operation report to be maintained for at least two years by the Company and made available to the Ministry upon request. Each report shall be prepared in hard and electronic formats, and shall include, but not be limited to, the dates of any Baseline Parameter warning alarm triggered in accordance with criteria in Schedule 2, start and finishing times, the names of the Trained employees responsible for managing the alarm, and the course of action taken to resume operation of the Incinerator.

G. TRAINING

54. Training Requirements

(1) The Company shall ensure that staff receiving and/or Processing waste, handling waste, disinfecting or servicing equipment at the Site wear adequate protective clothing

at all times in compliance with applicable provincial legislation and are trained with respect to:

(a) the terms, conditions and operating requirements of this ECA;
(b) the procedures for all waste receipt, transfer, Processing and storage operations;
(c) the operation and maintenance of the specific equipment which they operate at the Site;
(d) all emergency and spill response procedures;
(e) any environmental concerns pertaining to the Site and wastes to be handled; and
(f) relevant waste management legislation, regulations and guidelines.

(2) The Company shall maintain an updated training manual at the Site at all times. The manual shall include sufficient material to satisfy the requirements detailed in condition 54(1) above.
(3) The Company shall develop, and periodically update, a training plan, that includes, but is not limited to:

(a) the credentials of the trainer(s);
(b) the duration of the training course;
(c) the specific content of the training course, including any updated and supplementary information;
(d) the schedule for updating staff; and
(e) criteria to determine whether an individual trainee has met all the training objectives.

(4) Staff shall be deemed to be Trained, if they successfully pass the appropriate components of the training courses, and annually, or more often, update their knowledge and skills with respect to the maintenance and operation of the equipment that they are responsible for.
(5) A listing of all Trained employee responsible for the Processing of waste shall be placed in a visible and conspicuous location at the Site.

H. SITE CLOSURE

55. Closure Plan

(1) Three (3) months prior to the planned closure of this Site, the Company shall provide to the Director, for approval, a written Closure Plan for the Site. This plan shall include, as a minimum, a description of the work that will be done to facilitate closure of the Site and a schedule for completion of that work; and

(2) Within four (4) months of closure of the Site, the Company shall provide the Director with a report, written by an independent, qualified consultant which confirms that the Site has been closed in accordance with the Closure Plan submitted and approved in accordance with Condition 55(1).

SCHEDULE "A"

This Schedule "A" forms part of this ECA.

1. Document entitled "Applications for Certificates of Approval in accordance with the regulations under the EPA For the Establishment of a Biomedical, Pharmaceutical and Product Destruction Operation in the City of Brampton", submitted Thursday, September 3, 1998 by Medical Waste Management Inc.
2. Revised application for Approval of a Waste Disposal Site (Transfer/Processing) dated October 27, 1998, and signed by Daniel Kennedy, President, Medical Waste Management Inc.
3. Letter from I. Parrott, MOE, to D. Kennedy, Medical Waste Management Inc., dated November 24, 1998, re: Request for Additional Information.
4. Letter from D. Kennedy, Medical Waste Management Inc., to I. Parrott, MOE, dated November 27, 1998, re: Response to November 24, 1998, re: Request for Additional Information.
5. Application for a Certificate of Approval (Air) for a condenser dated September 1, 1998 as amended by Application for a Certificate of Approval (Air) dated October 27, 1998.
6. Application for a Certificate of Approval (Air) for a boiler dated September 1, 1998 as amended by Application for a Certificate of Approval (Air) dated October 27,1998.
7. Application for Amendment to Certificate of Approval Air, and supporting information, dated June 7, 2000.
8. Application for Amendment to Certificate of Approval Waste Disposal Site, and supporting information, dated June 7, 2000.
9. A letter, dated August 17, 2000, signed by N. Shah, P. Eng. And John E. Coulter of J.E. Coulter Associates Limited, re: "Medical Waste Management 95 Deerhurst Drive, Brampton, Noise Monitoring".
10. Letter dated August 28, 2000 signed by Daniel Kennedy.
11. Additional information binder with a cover letter dated September 7, 2000, signed by Daniel Kennedy.
12. Letter dated September 20, 2000 signed by Daniel Kennedy.
13. Response package with a cover letter dated October 9, 2000, signed by Daniel Kennedy.
14. Emissions Inventory and Dispersion Modelling for the Medical Waste Management (MWM) Inc. Proposed Medical Waste Incinerator, Prepared by Envirometrex Corporation, dated October 2000.
15. Human Health Risk Assessment for the Medical Waste Management Inc. Proposed Medical Waste Incinerator System Final Report. Prepared by Cantox Environmental, dated October 16, 2000.
16. E-mail message dated December 18, 2000 from Jim Gallant of Medical Waste

Management Inc., including "Emergency Generator Addendum 1 to Human Health Risk Assessment For The Medical Waste Management Inc. Proposed Medical Waste Incinerator System, Brampton, Ontario" prepared by Cantox Environmental, December 2000 and "Human Health Risk Assessment Results for Santa Maria Foods Addendum 2 to Human Health Risk Assessment For The Medical Waste Management Inc. Proposed Medical Waste Incinerator System, Brampton, Ontario" prepared by Cantox Environmental, December 2000.

17. E-mail message dated December 21, 2000 from Richard Kolomeychuk of Envirometrex Corporation, including "Emergency Generator Dispersion Modelling Addendum 1 to Emissions Inventory and Dispersion Modelling For Medical Waste Management Inc. Proposed Medical Waste Incinerator prepared by Envirometrex Corporation November 30, 2000, revised December 21, 2000" and "Dispersion Modelling Results for Santa Maria Foods Addendum 2 to Emissions Inventory and Dispersion Modelling For Medical Waste Management Inc. Proposed Medical Waste Incinerator prepared by Envirometrex Corporation November 30, 2000, revised December 21, 2000".

18. E-mail message dated January 3, 2001 from Dan Kennedy regarding a financial assurance estimate.

19. Letter from Daniel Kennedy to Steve Klose, Ministry of the Environment, dated July 27, 2001, together with documentation referred to as “Medical Waste Management Inc. Pre-Commencement Date Reporting Requirements for the Ministry of the Environment.

20. Application for Approval of a Waste Disposal Site (transfer/processing) dated August 27, 2001, and signed by Daniel Kennedy.

21. Letter from Daniel Kennedy to Ian Parrott, Ministry of the Environment, dated August 28, 2001.

22. Letter from Jim Gallant on behalf of Medical Waste Management Inc. to Ken Smith, Ministry of the Environment, dated October 5, 2001.

23. Letter from Jim Gallant on behalf of Medical Waste Management Inc. to Ken Smith, Ministry of the Environment, dated October 23, 2001.

24. Medical Waste Management Inc. Continuous Emission Monitors QA/QC Program Updated: July 10, 2001.

25. Medical Waste Management Inc. Incinerator Air Pollution Control System Activated Carbon Monitoring & Replacement Program, December 11, 2001.

26. Medical Waste Management Inc. Incinerator Updated Activated Carbon Monitoring & Replacement Program, January 31, 2002 to replace Medical Waste Management Inc. Incinerator Air Pollution Control System Activated Carbon Monitoring & Replacement Program, December 11, 2001.

27. Letter from Jim Gallant on behalf of Medical Waste Management Inc. to Anne-Maria Pennanen, Ministry of the Environment, dated February 4, 2002.

28. Letter dated August 27, 2002 from Daniel Kennedy, Medical Waste Management Inc., to Ian Parrott, P. Eng., MOE, re: Provisional Certificate of Approval Number A-680324.

29. Letter dated August 21, 2002 from Paul Oldford, P. Eng., Manager of Solid Waste,

Cape Breton Regional Municipality, to Ian Parrott, P. Eng., MOE, regarding the labour dispute in Sydney, Nova Scotia.
30. Letter dated February 4, 2003 from Daniel Kennedy, President, Medical Waste Management Inc., to Ian Parrott, MOE, describing the requested amendment.
31. Fax dated February 26, 2003 enclosing a revised letter dated February 4, 2003 from Daniel Kennedy, President, Medical Waste Management Inc., to Ian Parrott, MOE, describing the requested amendment.
32. Application for a Provisional Certificate of Approval for a Waste Disposal Site dated July 9, 2003 and signed by Daniel Kennedy, President, Medical Waste Management Inc.
33. Cover letter dated Thursday July 10, 2003 from Daniel Kennedy, President, Medical Waste Management Inc., to Ian Parrott, MOE, describing the requested amendment and enclosing the application form.
34. Letter dated December 31, 2003 from Daniel Kennedy, President, Medical Waste Management Inc., to Ian Parrott, MOE, supplying additional required information regarding Michigan waste contingency plan and receipt of waste class 262.
35. Application for a Provisional Certificate of Approval for a Waste Disposal Site dated April 20, 2004 and signed by L. A. Hurley, Operations Manager, Medical Waste Management Inc. including all attached supporting information and covering letter.
36. Application for a Provisional Certificate of Approval for a Waste Disposal Site dated July 6, 2006 including all attached information, plans, drawings and specifications.
37. Application for approval, signed by Daniel Kennedy, dated December 18, 2007, together with a cover letter, dated December 17, 2007, signed by John Chandler, A. J. Chandler & Associates Ltd., and attachments prepared by John Chandler, A. J. Chandler & Associates Ltd.
38. An e-mail from John Chandler to Anne-Maria Pennanen on January 21, 2008 including a letter, dated January 18, 2008, signed by John Chandler, A. J. Chandler & Associates Ltd., addressed to Anne-Maria Pennanen, Ministry of the Environment".
39. A letter, dated February 1, 2008, signed by John Chandler, A. J. Chandler & Associates Ltd., addressed to Anne-Maria Pennanen, Ministry of the Environment regarding re-location of the Sharp Smart operation.
40. An e-mail from John Chandler to Anne-Maria Pennanen on February 10, 2008, including Figure 2: "Future Layout Inside Building, revised February 8, 2008" and "Design & Operating Report, Autoclave Waste Receipt and Handling Operations for Stericycle, Inc., revised February 8, 2008".
41. An e-mail from John Chandler to Anne-Maria Pennanen on February 11, 2008, including Figure 1: "Site Layout Showing Building Access and Outside Storage Areas", revised February 8, 2008.
42. An e-mail from Daniel Kennedy of Stericycle, Inc. to Anne-Maria Pennanen on February 18, 2008, including a copy of a neighbor notification letter and list of recipients.
43. An e-mail from Jean-Pierre Pepin of Stericycle, Inc. to Anne-Maria Pennanen on February 22, 2008, including a letter dated February 21, 2008 regarding a proposal for

financial assurance.
44. A copy of a Notice of Decision, dated April 1, 2008, certified to be a correct copy and signed by Eileen Collie, City of Brampton, approving a minor variance or special permission to extend a non-conforming use (building addition to facilitate a compactor and walking floor trailer).
45. A copy of a letter, dated April 22, 2008, signed by Eileen Collie, City of Brampton, notifying that the Decision on minor variance is final and binding.
46. A copy of Engineer's General Review Certificate Sprinkler & Life Safety, date of Inspection & Review April 30, 2008, signed by Francis P. Sim, P. Eng.
47. A copy of Building Permit, dated May 1, 2008, issued by B.L. Campbell, City of Brampton.
48. A copy of a Pest Control program prepared by Orkin PCO Services.
49. An e-mail message dated May 26, 2008 from John Chandler of A. J. Chandler & Associates Ltd. containing an e-mail message dated May 26, 2008 from Daniel Kennedy of Stericycle Inc. to John Chandler of A. J. Chandler & Associates Ltd.
50. A letter dated October 10, 2008, signed by Jean-Pierre Pepin.
51. Carbon Management Plan, Stericycle - Brampton, Ontario, dated March 2009, together with a cover letter, dated April 6, 2009, signed by Jean - Pierre Pepin, Director, Environment, Safety and Health, Stericycle Inc.
52. Letter dated May 4, 2010, from Jean-Pierre Pepin, Director, Environmental Health and Safety, Stericycle, Inc., to Director, MOE, including the attached document entitled “Carbon Management Plan, Stericycle - Brampton, Ontario, May 2010".
53. Application for a Provisional Certificate of Approval for a Waste Disposal Site dated June 15, 2010 signed by Dan Kokol, Stericycle Inc. on July 30, 2010, requesting a service area change to include the United States of America.
54. Report entitled "Ash Sampling Results in Support of Designation as Non-Hazardous Waste for the Medical Waste Management (Stericycle) Incineration Facility" dated March 2008 prepared by A.J. Chandler & Associates Ltd.
55. Financial Assurance Re-evaluation dated April 8, 2020, prepared by Stericycle, Inc. and submitted to the Director, including all attached supporting information.
56. Environmental Compliance Approval application dated May 11, 2020, submitted and signed by Dan Kokol, Operational EHS Specialist, Stericycle ULC, including all supporting documentation, information, drawings and appendices.
57. Drawing entitled "Floor & Equipment Plan", dated July 2020, prepared by West Engineering.

SCHEDULE 1

This Schedule 1 forms part of this ECA (Air and Waste Disposal Site).

List of Main Pieces of Equipment at the Site:

A. one (1) incineration facility, to burn a maximum of 10 tonnes per day of a mixture of biomedical waste, pharmaceutical waste and solid non-hazardous waste, complete with all auxiliary equipment and the following major components:

1. one (1) JOY ECOLAIRE 2500 TESI W/SR62H, or equivalent, controlled air 2-stage incinerator, referred to as the Incinerator, having a design operating capacity of 670

kilograms per hour, equipped with:

a. a hydraulic ram waste feed system with internal stoker;
b. a primary chamber complete with a fixed hearth, a natural gas fired burner rated at 1.95 gigajoules per hour, a combustion air fan with a maximum volumetric flowrate of 0.18 cubic metre per second, and two modulating under fire air blowers, one capable of delivering approximately 0.35 cubic metre per second, and the other approximately 0.25 cubic metre per second;
c. hydraulic rams for removal of Bottom Ash from the primary chamber into an ash pit with a volume of approximately 4.6 cubic metres, complete with a water quench system;
d. an in-line ash hoe for wet ash removal from the ash pit into ash collection bins, each with a volume of approximately 2.5 cubic metres;
e. a secondary chamber, complete with a natural gas fired burner, rated at 4.48 gig joules per second, a combustion air fan with a maximum volumetric flowrate of 1.2 cubic metres per second, and a flameport blower to provide combustion air at a volumetric flowrate of 2.6 cubic metres per second at 20 °C;
f. an Emergency Bypass Stack, having an exit diameter of 1.07 metres, extending 17.66 metres above grade, complete with a diverter valve and connection to route gases via a refractory lined hot gas duct into the Air Pollution Control System during normal operating conditions, discharging products of combustion and other Incinerator emissions during upset conditions into the natural environment at a maximum volumetric flowrate of 12.2 actual cubic metres per second at approximately 1000 °C;

2. one Air Pollution Control System, manufactured by EMCOTEK, including the following components:

a. one (1) quench pre-scrubber tower, having an internal diameter of 1.55 metres and a height of 5.2 metres, complete with a recirculation pump delivering 19.0 litres per hour of caustic into the spray nozzles at the upper parts of the pre-scrubber quench and condenser vessels, and an emergency potable water supply at 95 litres per hour into the spray nozzles

at the top of the prescrubber quench vessel;
b. one (1) roof mounted single-cell, mechanical draft evaporative cooling tower, having a height of 12.8 metres, rated at 15.8 gigajoules per hour cooling capacity, equipped with single two speed air coil fan, powered by a motor rated at 80 kilowatts, complete with a chemical water treatment system to control scaling, corrosion and biofouling, a drain down tank :having a capacity of 9,462 litres, and two pumps, installed in parallel providing 100 percent redundancy, each rated at 54 kilowatts, to deliver cooling water at an approximate flow rate of 82 litres per second at approximately 26 °C into the two heat exchangers associated with the Air Pollution Control System;
c. a caustic storage and delivery system, complete with a high density polyethylene tank capable of storing 18,928 litres of 50 percent caustic soda (sodium hydroxide) solution, three metering pumps, each rated at 30.28 litres per hour with one pump injecting caustic into the suction side of the quench vessel recirculation pump and the other two into the suction side of each of the two condenser vessel recirculation pumps with the combined flow of 50 percent caustic soda (sodium hydroxide) to be approximately 21 litres per hour;
d. one (1) condensing column, having an internal diameter of 1.55 metres and a height of 5.2 metres, complete with a recirculation pump delivering approximately 10 litres per hour of caustic, cooled in a heat exchanger, into the spray nozzles at the top of the condensing column;
e. two (2) rotary atomizer modules, each incorporating EmcoTek proprietary spray discs, spun at more than 10,000 revolutions per minute (rpm) by motors, rated at 67 kilowatts, to create a high shear energy water wall, complete with a pump circulating approximately 750 litres per minute of process water, cooled in a heat exchanger, such that the gases exit the rotary atomizers maintaining a minimum of 10 ^{O} C difference with the Carbon Bed Inlet Temperature;
f. one (1) 3-stage MistFree polypropylene acid absorber and de-mister system;
g. steam re-heat system, complete with a steam supply at 113 kilograms per hour from the boiler referenced in B. below, to raise temperature of the gases to approximately 52 °C before Carbon Bed;

h. Carbon Bed filter, complete with two carbon layers each measuring 2.29 metres by 4.88 metres by 0.2 metre and each containing at.least 1 tonne of carbon;
i. a HEPA filtration system, containing one array, measuring 2.44 metres by 2.44 metres, complete with filters each measuring 0.61 metre by 0.61 metre by 0.30 metre;
j. Selective non-catalytic reduction system (SNCR), to inject ammonia or an equivalent rate of urea to the water feed used to cool the incinerator gases; injecting ammonia or an equivalent rate of urea with range of 1.89 to 3.79 litres per hour.
k. one induced draft fan equipped with a motor, rated at 30 kilowatts, and variable' frequency drive, mounted at floor level, exhausting tangentially upwards directly into the Main Stack;
l. one Main Stack, discharging Undiluted Gases exiting the Air Pollution Control System at a maximum volumetric flowrate of 9,668 actual cubic metres per hour at 52 °C, having an exit diameter of 0.67 metre, extending 18.29 metres above grade;

3. a Continuous Monitoring and Control System, including, but not limited to the following:

a. waste feed rate;
b. shielded "R"-type thermocouples, or equivalent, to measure the temperature at the following locations:

i. primary combustion chamber of the incinerator (two locations);
ii. outlet duct of the secondary combustion chamber of the incinerator, at a location where a flue gas retention time of a minimum of one second is achieved;
iii. inlet of reheat section;
iv. fan exhaust I stack inlet;

c. one Rosemount World Class 3000, in-situ oxygen analyzer, or equivalent, to measure the concentration of oxygen at a location where the concentration of oxygen is representative of the operating condition at the exit of the secondary combustion

chamber;
d. one Rosemount Model 5100A, in-situ carbon monoxide analyzer, or equivalent, to measure the concentration of carbon monoxide at a location where the concentration of carbon monoxide is representative of the operating condition at the exit of the secondary combustion chamber or the outlet of the Main Stack;
e. One in-situ Chemiluminescence analyzer, or equivalent, to measure the concentration of nitrogen oxides where the concentration of nitrogen oxides is representative of the operating conditions at the exit of the Air Pollution Control System.
f. differential pressure gauges to measure the differential pressure across each of the carbon filter and HEPA filter;
g. sodium hydroxide flow rate into each of the pre-quench scrubber and condensing tower;
h. amperage for each rotary atomizer;
i. pre-scrubber liquor pH;

j. condensing tower liquor pH;
k. atomizer/de-mister tank liquor pH (two);
l. Ammonia or an equivalent urea injection rate to the SNCR.

All being recorded and monitored (and some automatically controlled) by either the Incinerator or EmcoTek Process Control System.

4. Process Control System to control the operation of the Incinerator, Air Pollution Control System, Continuos Monitoring and Control System, waste conveyors, caustic injection system, cooling tower system, and all associated pieces of equipment necessary for the proper functioning the aforementioned systems, complete with a computer-based data acquisition, alarm and reporting system.
B. 1. one (1) natural gas fired boiler, used as a back up boiler, to supply steam for an air pollution control reheat system associated with the incineration facility and also for two (2) autoclave sterilization systems, to sterilize a maximum of 70 tonnes per day of solid biomedical waste, having a maximum heat input of 9,284,000 kilojoules per hour, exhausting into the atmosphere through a stack, having an exit diameter of 0.46 metre, extending 2.5 metres above the roof and 9.71 metres above grade; and
2. one (1) natural gas fired boiler, to be used as the main boiler, to supply steam for an

air pollution control reheat system associated with the incineration facility and also for two (2) autoclave sterilization systems, to sterilize a maximum of 70 tonnes per day of solid biomedical waste, having a maximum heat input of 18,700,000 kilojoules per hour, discharging to the air at a maximum volumetric flow rate of 3.18 cubic metres per second, through a stack, having an exit diameter of 0.60 metre, extending 2.03 metres above the roof and 9.23 metres above grade.

C. one (1) condenser, connected in series with the autoclave sterilization system, used for controlling discharge from the autoclave, having a heat capacity of 2,563,000 kilojoules per hour, a minimum diameter of 0.76 metre and a height of 3.05 metre, discharging into the atmosphere through a vent having an exit diameter of 0.2 metre, extending 2.5 metres above the roof and 9.71 metres above grade;

D. a compactor located in the sterilized Treatable Waste shipping area to be used for loading treated waste into a walking floor trailer.

E. an Emergency Power Supply, consisting of a 500-kilowatt generator complete with a diesel fuel fired engine having a maximum fuel consumption rate of 117 litres per hour, and a manually operated transfer switch, to provide back up power during a power failure, discharging the products of combustion into the atmosphere through a stack having an exit diameter of 0.254 metre, extending 18.24 metres above grade.

SCHEDULE 2

This Schedule 2 forms part of this ECA (Air and Waste Disposal Site).

The Company shall ensure that appropriate equipment and systems are available to continuously monitor and provide visual and audible warnings for the following warning set points:

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Baseline Parameter	**Monitoring Capabilities**	**Warning Value Set Point (1)**	**Warning Activation Average Period**	**Waste Feed Lockout Set Point (2)**	**Waste Feed Lockout Average Period**
Residual Oxygen	1 minute	< 7.5% **(3)**	3 minutes	< 7.5% **(3)**	6 minutes
Carbon Monoxide **(4)**	1 minute	> 8 ppmvd	First: 30 minutes Second: 4 hours (based on 30-minute rolling averages)	> 8 ppmvd	12 hours (based on 1-hour rolling averages)
Nitrogen Oxides	1 minute	> 98 ppmvd	6 hours	> 98 ppmvd	24 hours
Waste Feed Rate into the Incinerator	1 hour	< 670 kg/h	1 hour	< 670 kg/h	1 hour

Primary Chamber Temperature	1 minute	[TBD]	[TBD]	[TBD]	[TBD]
Secondary Chamber Temperature	1 minute	≥1000 ^{o} C	1 minute	≥1000 ^{o} C	30 minutes
De-mister Exit/Carbon Bed Inlet differential Temperature	1 minute	10 ^{o} C	30 minutes	10 ^{o} C	3 hours
Carbon Bed/HEPA Filter Inlet Temperature	1 minute	≤ 57 ^{o} C	30 minutes	≤ 57 ^{o} C	3 hours
HEPA Filter Differential Pressure Drop	1 minute	>4" WC	30 minutes	>4" WC	3 hours
Carbon Filter Differential Pressure Drop	[TBD]	[TBD]	[TBD]	[TBD]	[TBD]
Quench pH	1 minute	[TBD] **(5)**	30 minutes	[TBD] **(5)**	3 hours
Atomizers pH	1 minute	[TBD] **(5)**	30 minutes	[TBD] **(5)**	3 hours
Condenser pH	1 minute	[TBD] **(5)**	30 minutes	[TBD] **(5)**	3 hours
Atomizers Amperage	1 minute	< 36 A	30 minutes	< 36 A	3 hours
Ammonia Injection Rate	1 hour	< 1.89 Lph or > 3.79 Lph	1 hour	< 1.89 Lph or > 3.79 Lph	3 hours

(1) Warning set points are based on the occurrence of abnormal conditions that will trigger a
warning, requiring the attention by the operator.
(2) Waste Feed Lockout set points are based on the occurrence of abnormal conditions showing exceedances beyond the average time of the ECA set emissions limits, or non-conformance of the acceptable operating range of the target process parameters beyond the transitional period of such abnormal condition; which requires corrective maintenance to bring back the emissions and/or process parameters within acceptable limits.

1. The calculation of the performance limits for determining

compliance starts when the waste feed resumes after a shutdown or lockout

2. The set points for those parameters, for which this Approval does not stipulate any value, shall be established not later than during the first Source Testing campaign after the issuance of this Approval.

3. All monitoring systems shall be operated and maintained so that accurate data is obtain during a minimum of 95% on an annual basis, excluding calibration time.

4. The expressed time duration in the “Waste Feed Locked Average Period” is continuous.

5. The lockout period includes the 4 hours immediately after the cessation of the waste feed

(3) Interim value. Shall be set to 6% when the probe is relocated to measure oxygen in the Undiluted Gases.

(4) Carbon Monoxide has two warning set points before Lockout. Triggering of the second warning requires reporting to the Ministry as part of the Quarterly Reports detailed in condition 54(1) **(5)** A Site Standard Operating Procedure (SSOP) is to be prepared by the Company providing the strategy to be used for setting up the pH values, based on latest HCl testing results, with annual revision of the pH values undertaken based on the latest source testing results.

SCHEDULE 3

This Schedule 3 forms part of ECA (Air and Waste Disposal Site).

PARAMETER:

Temperature

LOCATION:

The sample point for the Continuous Temperature Monitor shall be located at the exit of the secondary chamber of the Incinerator where the retention time of flue gases has reached a minimum of one second at a minimum temperature of 1000°C.

PERFORMANCE:

The Continuous Temperature Monitor shall meet the following minimum performance specifications for the following parameters.

PARAMETERS SPECIFICATION

1. Type: shielded "R" type thermocouple, or equivalent.
2. Accuracy: ± 1.5 percent of the minimum gas temperature

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor without a significant loss of accuracy and with a time resolution of one minute or better.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 95
percent of the time for each calendar quarter, excluding calibration time.

SCHEDULE 4

This Schedule 4 forms part of ECA (Air and Waste Disposal Site).

PARAMETER:

Oxygen

INSTALLATION:

The Continuous Oxygen Monitor shall be installed at an accessible location where the measurements are
representative of the actual concentration of oxygen in the undiluted gases leaving the secondary chamber of the
Incinerator and shall meet the following installation specifications:

PARAMETERS SPECIFICATION

1. Range (percentage): 0-20 or 0-25

2. Calibration Gas Ports: close to the sample point

PERFORMANCE:

The Continuous Oxygen Monitor shall meet the following minimum performance specifications for the following parameters:

PARAMETERS SPECIFICATION

1. Span Value (percentage): 2 times the average normal concentration of the source
2. Relative Accuracy: ≤ 10 percent of the mean value of the reference method test data
3. Calibration Error: 0.25 percent O_2
4. System Bias: ≤ 4 percent of the mean value of the reference method test data
5. Procedure for Zero and
Span Calibration Check: all system components checked
6. Zero Calibration Drift (24-hour): ≤ 0.5 percent O_2
7. Span Calibration Drift (24-hour): ≤ 0.5 percent O_2
8. Response Time (90 percent response
to a step change): ≤ 90 seconds
9. Operational Test Period: ≥ 168 hours without corrective maintenance

CALIBRATION:

Daily calibration drift checks on the monitor shall be performed and recorded in accordance with the requirements of
Report EPS l/PG/7.

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of a minimum of one (1) minute.

RELIABILITY:

The monitor 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, excluding calibration time.

SCHEDULE 5

This Schedule 5 forms part of this ECA (Air and Waste Disposal Site).

PARAMETER:

Carbon Monoxide

INSTALLATION:

The Continuous Carbon Monoxide Monitor shall be installed at an accessible location where the measurements are representative of the actual concentration of carbon monoxide in the undiluted gases leaving the secondary chamber of Incinerator or the outlet of the Main Stack and shall meet the following installation specifications.

PARAMETERS SPECIFICATION

1. Range (parts per million, ppm): 0 to ≥ 100 ppm by volume (dry)

2. Calibration Gas Ports: close to the sample point

PERFORMANCE:

The Continuous Carbon Monoxide Monitor shall meet the following minimum performance specifications for the following parameters:

PARAMETERS SPECIFICATION

1. Span Value (percentage): 2 times the average normal concentration of the source
2. Relative Accuracy: ≤ 10 percent of the mean value of the reference method test data or ± 5 ppm, whichever is greater
3. Calibration Error: ≤ 2 percent of actual concentration
4. System Bias: ≤ 4 percent of the mean value of the reference method test data
5. Procedure for Zero and
Span Calibration Check: all system components checked
6. Zero Calibration Drift (24-hour): ≤ 5 percent of span value
7. Span Calibration Drift (24-hour): ≤ 5 percent of span value
8. Response Time (90 percent response
to a step change): ≤ 90 seconds
9. Operational Test Period: ≥ 168 hours without corrective maintenance

CALIBRATION:

Daily calibration drift checks on the monitor shall be performed and recorded in accordance with the requirements of
Report EPS l/PG/7.

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor with an accrracy of 0.5 percent of a full scale reading or better and with a time resolution of a minimum of one (1) minute.

RELIABILITY:

The monitor 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, excluding calibration time.

SCHEDULE 6

This Schedule 6 forms part of this ECA (Air and Waste Disposal Site)

PARAMETER:

Nitrogen Oxides

INSTALLATION:

The Continuous Nitrogen Oxide Monitor shall be installed at the Main Stack where the measurements are representative of the actual concentration of nitrogen oxides in the Undiluted Gases leaving the Air Pollution Control System and shall meet the following specifications.

PARAMETERS SPECIFICATION

1. Range (parts per million, ppm): 0 to 200 ppm by volume (dry)

2. Calibration Gas Ports: close to the sample point

PERFORMANCE:

The Continuous Nitrogen Oxides Monitor shall meet the following minimum performance specifications for the following parameters:

PARAMETERS SPECIFICATION

1. Span Value (percentage): 2 times the average normal concentration of the source
2. Relative Accuracy: ≤ 10 percent of the mean value of the reference method test data or 5 ppm, whichever is greater
3. Calibration Error: ≤ 2 percent of actual concentration
4. System Bias: ≤ 4 percent of the mean value of the reference method test data
5. Procedure for Zero and
Span Calibration Check: all system components checked
6. Zero Calibration Drift (24-hour): ≤ 2.5 percent of span value
7. Span Calibration Drift (24-hour): ≤ 2.5 percent of span value
8. Response Time (90 percent response
to a step change): ≤ 90 seconds
9. Operational Test Period: ≥ 168 hours without corrective maintenance

CALIBRATION:

Daily calibration drift checks on the monitor shall be performed and recorded in accordance with the requirements of Report EPS 1/PG/7.

DATA RECORDER:

The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of 1 minute.

RELIABILITY:

The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

SCHEDULE 7

This Schedule 7 forms part of this ECA (Air and Waste disposal Site).

Test Contaminants

Gases and Particulate (Testing)

1. Gases:

Hydrogen Chloride
Carbon Monoxide
Carbon Dioxide
Oxides of Nitrogen
Oxygen
Sulphur Dioxide
Total Hydrocarbons
Ammonia

2. Particulate:

Total suspended particulate matter and particulate matter with the associated gaseous/vapour phase for the following materials:
Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, . Copper, Fluorides, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorous, Selenium, Silicon, Silver, Sodium, Strontium, Tin, Titanium, Vanadium, Zinc

Testing for Other Chlorinated Organics
Total Dichlorobenzenes
Total Trichlorobenzenes
Total Tetrachlorobenzenes
Pentachlorobenzene
Hexachlorobenzene
Total Dichlorophenols
Total Trichlorophenols
Total Tetrachlorophenols
Total Pentachlorophenols
Total Polychlorinated Biphenyls

SCHEDULE 7 (cont.)

Testing for Polycyclic Organic Matter
Acenaphthylene
Acenaphthene
Anthracene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)fluorene

Benzo(b)fluorene
Benzo(ghi)perylene
Benzo(a)pyrene
Benzo(e)pyrene
2-chloronaphthalene
Chrysene
Coronene
Dibenzo(a,c)anthracene
9,10 - Dimethylanthracene
7,12 - Dimethylbenzo(a)anthracene
Fluoranthene
Fluorene
Indeno(l,2,3 - Cd)pyrene
2 - Methylanthracene
3 - Methylcholanthrene
1 - Methylnaphthalene
2 - Methylnaphthalene
1 - Methylphenanthrene
9 - Methylphenanthrene
Naphthalene
Perylene
Phenanthrene
Picene
Pyrene
Tetralin
Triphenylene
Dibenzo(a,h)anthracene
Dibenzo(a,e)pyrene
Quinoline
Biphenyl
0-terphenyl
M-terphenyl
P-terphenyl

SCHEDULE 7 (cont.)

Volatile Organic Matter
Acetaldehyde
Acetone
Acrolein
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Butadiene

1,3 - Butanone
2 - Carbon Tetrachloride
Chloroform
Cumene
Dibromochloromethane
Dichlorodifluoromethane
Dichloroethane,
1,2 - Dichloroethene,
Trans- 1,2- Dichloroethene,
1,1 - Dichloropropane,
1,2 - Ethylbenzene
Ethylene Dibromide
Formaldehyde
Mesitylene
Methylene Chloride
Styrene
Tetrachloroethene
Toluene
Trichloroethane,
1,1,1 - Trichloroethene
Trichloroethylene,
1,1,2 - Trichlorofluoromethane
Trichlorotrifluoroethane
Vinyl Chloride
Xylenes, M-, P- and O-

SCHEDULE 7 (cont.)

Dioxins, Furans and Dioxin-Like Polychlorinated Biphenyls
Dioxin Isomers
2,3,7,8-Tetrachlorodibenzo-p- dioxin [2,3,7,8-TCDD]
1,2,3,7,8-Pentachlorodibenzo-p-dioxin [1,2,3,7,8-PeCDD]
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,4,7,8-HxCDD]
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,6,7,8-HxCDD]
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin [1,2,3,7,8,9-HxCDD]
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin [1,2,3,4,6,7,8-HpCDD]
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin [1,2,3,4,6,7,8,9-OCDD]
Furan Isomers
2,3,7,8-Tetrachlorodibenzofuran [2,3,7,8-TCDF]
1,2,3,7,8-Pentachlorodibenzofuran [1,2,3,7,8-PeCDF]
2,3,4,7,8-Pentachlorodibenzofuran [2,3,4,7,8-PeCDF]
1,2,3,4,7,8-Hexachlorodibenzofuran [1,2,3,4,7,8-HxCDF]
1,2,3,6,7,8-Hexachlorodibenzofuran [1,2,3,6,7,8-HxCDF]
1,2,3,7,8,9-Hexachlorodibenzofuran [1,2,3,7,8,9-HxCDF]
2,3,4,6,7,8-Hexachlorodibenzofuran [2,3,4,6,7,8-HxCDF]

1,2,3,4,6,7,8-Heptachlorodibenzofuran [1,2,3,4,6,7,8-HpCDF]
1,2,3,4,7,8,9-Heptachlorodibenzofuran [1,2,3,4,7,8,9-HpCDF]
1,2,3,4,6,7,8,9-Octachlorodibenzofuran [1,2,3,4,6,7,8,9-OCDF)
Co-Planar PCBs (Dioxin-like PCBs)
3,3',4,4'-Tetrachlorobiphenyl [3,3',4,4'-tetraCB (PCB 77)]
3,4,4',5- Tetrachlorobiphenyl [3,4,4',5-tetraCB (PCB 81)]
2,3,3',4,4'- Pentachlorobiphenyl [2,3,3',4,4'-pentaCB (PCB 105)]
2,3,4,4',5- Pentachlorobiphenyl [2,3,4,4',5-pentaCB (PCB 114)]
2,3',4,4',5- Pentachlorobiphenyl [2,3',4,4',5-pentaCB (PCB 118)]
2',3,4,4',5- Pentachlorobiphenyl [2',3,4,4',5-pentaCB (PCB 123)]
3,3',4,4',5- Pentachlorobiphenyl (PCB 126)
2,3,3',4,4',5- Hexachlorobiphenyl [2,3,3',4,4',5-hexaCB (PCB 156)]
2,3,3',4,4',5'- Hexachlorobiphenyl [2,3,3',4,4',5'-hexaCB (PCB 157)]
2,3',4,4',5,5'- Hexachlorobiphenyl 2,3',4,4',5,5'-hexaCB (PCB 167)
3,3',4,4',5,5'- Hexachlorobiphenyl [3,3',4,4',5,5'-hexaCB (PCB 169)]
2,3,3',4,4',5,5'- Heptachlorobiphenyl [2,3,3',4,4',5,5'-heptaCB (PCB 189)]

SCHEDULE 8

This Schedule 8 forms part of this ECA (Air and Waste Disposal Site).

Source Testing Procedure:

(1) The Company shall submit, within nine (9) months of the previous Source Testing, to the Manager a Pre-Test Plan for the Source Testing required under this Approval;
(2) The Company shall finalize the Pre-Test Plan in consultation with the Manager;
(3) The Company shall not commence the Source Testing required under this Approval until the Manager has approved the Pre-Test Plan;
(4) The Company shall complete the Source Testing not later than six (6) months after the Manager has approved the Pre-Test Plan;
(5) The Company shall notify the Manager and District Manager 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;
(6) The Company shall submit a report (hardcopy and electronic format) on the Source Testing to the Manager and District Manager 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:

(a) an executive summary;
(b) an identification of the applicable North American Industry Classification System code (NAICS) for the Facility; and
(c) records of operating conditions at the time of Source Testing, including but not limited to the following:

(i) types of waste;
(ii) hourly feed rates of the wastes;
(iii) all relevant records produced by the Continuous Monitoring and Control Systems;
(iv) results of Source Testing , including the emission rate and emission concentration of the Test Contaminants;
(v) where the analytical results indicate that the amount of a particular isomer of the dioxin-like compound is less than the detection limit reported by the laboratory analyzing the source testing samples, the Company shall determine the amount of dioxin-like compound to be reported as the toxicity equivalent concentration by using the reported detection limit as the amount present for that isomer. The reported detection limits are to be determined by the laboratory at the time the source testing samples are analysed based on analysis of appropriate replicate low level samples or blanks;
(vi) results of dispersion calculations in accordance with AERMOD, or any other method accepted by the Director, indicating the Point of Impingement concentrations of the Test Contaminants listed in Schedule 7 of this Approval; and
(vii) a tabular comparison of Source Testing results for the Incinerator and Test Contaminants to original emission rates described in the Company's application and the ESDM Report.

(7) The Director may not accept the results of the Source Testing if:

(a) the Source Testing Code or the requirements of the Manager were not followed;
(b) the Company did not notify the Manager and the District Manager of the Source Testing; or
(c) the Company failed to provide a complete Report on the Source Testing.

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

The reason for conditions 1(1), 1(2), 3(1) through 3(4), 4(1), 7(1) through 7(3), 9(1) is to clarify the legal rights and responsibilities of the Company.
The reason for conditions 2(1), 2(2), 12(1) through 12(7), and 22(1) through 22(3) is to ensure that the Site is operated in accordance with the application and supporting documentation submitted by the Company, and not in a manner which the Director has not been asked to consider.
The reasons for condition 5(1) is to ensure that the Site is operated under the corporate name which appears on the application form submitted for this Approval and to ensure that the Director is informed of any changes.
The reasons for condition 5(2) are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this Approval.
The reason for the condition 6(1) is to ensure that appropriate Ministry staff have ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this Approval. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA and OWRA.
The reason for conditions 8(1) through 8(4) is to ensure that sufficient funds are available to the Ministry to clean up the Site in the event that the Company is unable or unwilling to do so.
The reason for condition 10(1) is to ensure that any complaints regarding Site operations are responded to and recorded in a timely and appropriate manner.
The reason for conditions 11(1) and 11(2) is to ensure that all spills, as defined in Reg. 347, are reported and acted upon in the appropriate manner.
The reason for conditions 13(1) through 13(4) is to specify the approved service area from which waste may be accepted at the Site.
The reason for conditions 14(1) and 15(1) is to specify the types and amounts of waste that may be received at the Site on a daily basis.
The reasons for condition 16(1) and 18(1) through 18(5) is to specify the amounts of waste that may be stored at the Site at any one time and to specify any storage restrictions imposed to minimize the potential for an adverse impact.
The reason for conditions 17(1) through 17(5) is to specify the waste screening

procedures to be employed at the Site to ensure that any unacceptable wastes received at the Site are managed appropriately.
The reason for conditions 19(1) through 19(5) is to approve the use of the proprietary Biosystems reusable containers for biomedical waste management purposes and detail any restrictions regarding its use.
The reason for conditions 21(1), 21(2), 26(1), 27(1) through 27(3), 29(1), 30(1), 31(1), 33(1) through 38(4), is to ensure that the Site is operated in a manner which does not result in a nuisance or a hazard to the health and safety of any person or the environment.
The reason for conditions 20(1) through 20(3) is to specify the waste management activities that may be conducted outdoors.
The reason for conditions 22(1) and 22(2) is to ensure the controlled access and integrity of the Site by preventing unauthorized access.
The reason for condition 24(1), 25(1) through 25(3) is to ensure that waste and wastewater is managed and processed in accordance with the Act and its regulations and not in a manner which may results in an adverse impact or a potential hazard to the health and safety of any person or the environment.
The reasons for conditions 28(1) through 28(3) are to ensure that an Emergency Response and Contingency Plan is developed and maintained at the Site and that the Company is prepared and properly equipped to take immediate action in the event of an emergency or contingency situation.
The reason for conditions 39(1) through 44(2) is to outline the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Equipment.
The reason for conditions 45(1) through 49(4) is to require the Company to gather accurate information so that the environmental impact and subsequent compliance with the Act, the Regulations and this ECA can be verified.
The reason for conditions 50(1) through 53(1) is to require the Company to retain records and provide information to the Ministry so that the environmental impact and subsequent compliance with the Act, the Regulation and this ECA can be verified.
The reason for conditions 54(1) through 54(5) is to ensure that the Site is operated by properly trained staff to minimize the potential for a hazard or nuisance to the natural environment or any person.
The reason for conditions 55(1) and 55(2) is to ensure that the Site is closed in accordance with Ministry standards and to protect the health and safety of the public and the environment.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A680324 issued on June 28, 2019

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the

Environmental Protection Act provides that the Notice requiring the hearing 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:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

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 Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or** www.ert.gov.on.ca

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

DATED AT TORONTO this 20th day of July, 2020

Mohsen Keyvani, P.Eng.
Director
appointed for the purposes of Part II.1 of the *Environmental Protection*

DL/
c: District Manager, MECP Halton-Peel
Dan Kokol, Stericycle, ULC

APPENDIX B

Contaminant Name	CAS Number	Source ID	Source Description	Contaminant Emission Rate (by source) (g/s)	Distance to Property Line (m)	Criteria [1] (µg/m³)	50% of Criteria (µg/m³)	Regulation Schedule #	Benchmark Category [2]	Criteria Averaging Time (hours)	Table B-1 1-hour Dispersion Factor for Shortest Distance to Property Line [3] (µg/m³ / g/s)	Table B-1 Dispersion Factor Converted to Criteria Averaging Time (µg/m³ / g/s)	Predicted Concentration (µg/m³)	Contaminant Negligible?
Metals and Metal Compounds [4]														
Aluminum Oxide (Al_2O_3)	1344-28-1	STACK01	Incinerator Emission	1.42E-04	20	120	60	Schedule 3	B1	24	8700	3573	5.06E-01	yes
Antimony (Sb)	7440-36-0	STACK01	Incinerator Emission	2.80E-06	20	25	12.5	Schedule 3	B1	24	8700	3573	1.00E-02	yes
Arsenic (As)	7440-38-2	STACK01	Incinerator Emission	8.33E-07	20	0.3	0.15	Schedule 3	B1	24	8700	3573	2.98E-03	yes
Barium (Ba)	7440-39-3	STACK01	Incinerator Emission	8.91E-06	20	10	5	Schedule 3	B1	24	8700	3573	3.18E-02	yes
Beryllium (Be)	7440-41-7	STACK01	Incinerator Emission	1.87E-07	20	0.01	0.005	Schedule 3	B1	24	8700	3573	6.68E-04	yes
Boron (B)	7440-42-8	STACK01	Incinerator Emission	5.65E-05	20	120	60	Schedule 3	B1	24	8700	3573	2.02E-01	yes
Cadmium (Cd)	7440-43-9	STACK01	Incinerator Emission	5.50E-07	20	0.025	0.0125	Schedule 3	B1	24	8700	3573	1.97E-03	yes
Calcium Oxide (CaO)	1305-78-8	STACK01	Incinerator Emission	5.53E-04	20	10	5	Schedule 3	B1	24	8700	3573	1.97E+00	yes
Chromium (Cr) (III)	7440-47-3	STACK01	Incinerator Emission	3.24E-06	20	0.5	0.25	Schedule 3	B1	24	8700	3573	1.16E-02	yes
Cobalt (Co)	7440-48-4	STACK01	Incinerator Emission	1.87E-07	20	0.1	0.05	Schedule 3	B1	24	8700	3573	6.68E-04	yes
Copper (Cu)	7440-50-8	STACK01	Incinerator Emission	1.03E-05	20	50	25	Schedule 3	B1	24	8700	3573	3.68E-02	yes
Iron (Fe)	7439-89-6	STACK01	Incinerator Emission	7.01E-05	20	4	2	Schedule 3	B1	24	8700	3573	2.50E-01	yes
Lead (Pb)	7439-92-1	STACK01	Incinerator Emission	4.88E-06	20	0.5	0.25	Schedule 3	B1	24	8700	3573	1.74E-02	yes
Lead (Pb)	7439-92-1	STACK01	Incinerator Emission	4.88E-06	20	0.2	0.1	Schedule 3	B1	720	8700	1379	6.73E-03	yes
Lithium (Li)	7439-93-2	STACK01	Incinerator Emission	3.57E-06	20	20	10	Schedule 3	B1	24	8700	3573	1.28E-02	yes
Magnesium Oxide (MgO)	1309-48-4	STACK01	Incinerator Emission	5.12E-05	20	120	60	Schedule 3	B1	24	8700	3573	1.83E-01	yes
Manganese (Mn)	7439-96-5	STACK01	Incinerator Emission	2.04E-06	20	0.4	0.2	Schedule 3	B1	24	8700	3573	7.29E-03	yes
Mercury (Hg) (Total)	7439-97-6	STACK01	Incinerator Emission	1.47E-05	20	2	1	Schedule 3	B1	24	8700	3573	5.25E-02	yes
Molybdenum (Mo)	7439-98-7	STACK01	Incinerator Emission	7.75E-06	20	120	60	Schedule 3	B1	24	8700	3573	2.77E-02	yes
Nickel (Ni)	7440-02-0	STACK01	Incinerator Emission	2.62E-06	20	0.04	0.02	Schedule 3	B1	8760	8700	685	1.79E-03	yes
Nickel (Ni)	7440-02-0	STACK01	Incinerator Emission	2.62E-06	20	2	1	Schedule 3	B1	24	8700	3573	9.36E-03	yes
Phosphorus Pentoxide (P_2O_5)	1314-56-3	STACK01	Incinerator Emission	2.15E-04	20	1	0.5	Schedule 3	B2	24	8700	3573	7.67E-01	no
Selenium (Se)	7782-49-2	STACK01	Incinerator Emission	2.08E-06	20	10	5	Schedule 3	B1	24	8700	3573	7.43E-03	yes
Silicon Dioxide (SiO_2)	7631-86-9	STACK01	Incinerator Emission	2.22E-04	20	5	2.5	Schedule 3	B2	24	8700	3573	7.95E-01	yes
Silver (Ag)	7440-22-4	STACK01	Incinerator Emission	2.17E-06	20	1	0.5	Schedule 3	B1	24	8700	3573	7.75E-03	yes
Sodium Hydroxide (NaOH)	1310-73-2	STACK01	Incinerator Emission	2.92E-03	20	10	5	Schedule 3	B1	24	8700	3573	1.04E+01	no
Strontium Oxide (SrO)	1314-11-0	STACK01	Incinerator Emission	1.49E-06	20	120	60	Schedule 3	B1	24	8700	3573	5.32E-03	yes
Tin (Sn)	7440-31-5	STACK01	Incinerator Emission	1.96E-05	20	10	5	Schedule 3	B1	24	8700	3573	7.00E-02	yes
Titanium (Ti)	7440-32-6	STACK01	Incinerator Emission	1.08E-05	20	120	60	Schedule 3	B1	24	8700	3573	3.86E-02	yes
Vanadium (V)	7440-62-2	STACK01	Incinerator Emission	6.24E-07	20	2	1	Schedule 3	B1	24	8700	3573	2.23E-03	yes
Zinc (Zn)	7440-66-6	STACK01	Incinerator Emission	2.87E-04	20	120	60	Schedule 3	B1	24	8700	3573	1.03E+00	yes
Particulate Matter (Incinerator)														
Particulate Matter	N/A-PM	STACK01	Incinerator Emission	6.97E-03	20	120	60	Schedule 3	B1	24	8700	3573	2.49E+01	yes
Polycyclic Aromatic Hydrocarbons														
Chlorobenzenes														
1,2,3,4-Tetrachlorobenzene	634-66-2	STACK01	Incinerator Emission	8.81E-08	20	600	300	Schedule 3	B2	24	8700	3573	3.15E-04	yes
1,2,3,5+1,2,4,5-Tetrachlorobenzene	95-94-3	STACK01	Incinerator Emission	8.81E-08	20	1	0.5	Schedule 3	B2	24	8700	3573	3.15E-04	yes
1,2,3-Trichlorobenzene	87-61-6	STACK01	Incinerator Emission	8.81E-08	20	135	67.5	Schedule 3	B2	24	8700	3573	3.15E-04	yes
1,2,4-Trichlorobenzene	120-82-1	STACK01	Incinerator Emission	8.81E-08	20	400	200	Schedule 3	B1	24	8700	3573	3.15E-04	yes
1,2-Dichlorobenzene	95-50-1	STACK01	Incinerator Emission	8.81E-08	20	30500	15250	Schedule 3	B1	1	8700	8700	7.66E-04	yes
1,3,5-Trichlorobenzene	108-70-3	STACK01	Incinerator Emission	8.81E-08	20	3.6	1.8	Schedule 3	B2	24	8700	3573	3.15E-04	yes
1,3-Dichlorobenzene	541-73-1	STACK01	Incinerator Emission	8.81E-08	20	50	25	Schedule 3	B2	24	8700	3573	3.15E-04	yes
1,4-Dichlorobenzene	106-46-7	STACK01	Incinerator Emission	8.81E-08	20	95	47.5	Schedule 3	B1	24	8700	3573	3.15E-04	yes
Hexachlorobenzene	118-74-1	STACK01	Incinerator Emission	8.81E-08	20	0.011	0.0055	Schedule 3	B2	24	8700	3573	3.15E-04	yes
Pentachlorobenzene	608-93-5	STACK01	Incinerator Emission	8.81E-08	20	80	40	Schedule 3	B2	24	8700	3573	3.15E-04	yes
Phenolics														
2,3,4,5-Tetrachlorophenol	4901-51-3	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
2,3,4,6-Tetrachlorophenol	58-90-2	STACK01	Incinerator Emission	8.81E-08	20	0.75	0.375	Schedule 3	B2	24	8700	3573	3.15E-04	yes

Contaminant Name	CAS Number	Source ID	Source Description	Contaminant Emission Rate (by source) (g/s)	Distance to Property Line (m)	Criteria [1] (µg/m³)	50% of Criteria (µg/m³)	Regulation Schedule #	Benchmark Category [2]	Criteria Averaging Time (hours)	Table B-1 1-hour Dispersion Factor for Shortest Distance to Property Line [3] (µg/m³ / g/s)	Table B-1 Dispersion Factor Converted to Criteria Averaging Time (µg/m³ / g/s)	Predicted Concentration (µg/m³)	Contaminant Negligible?
2,3,4-Trichlorophenol	15950-66-0	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
2,3,5,6-Tetrachlorophenol	935-95-5	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
2,3,5-Trichlorophenol	933-78-8	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
2,3,6-Trichlorophenol	933-75-5	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
2,3-Dichlorophenol	576-24-9	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
2,4 + 2,5-Dichlorophenol	120-83-2	STACK01	Incinerator Emission	8.81E-08	20	33.5	16.75	Schedule 3	B2	24	8700	3573	3.15E-04	yes
2,4,5-Trichlorophenol	95-95-4	STACK01	Incinerator Emission	8.81E-08	20	220	110	Schedule 3	B2	24	8700	3573	3.15E-04	yes
2,4,6-Trichlorophenol	88-06-2	STACK01	Incinerator Emission	8.81E-08	20	1.5	0.75	Schedule 3	B2	24	8700	3573	3.15E-04	yes
2,6-Dichlorophenol	87-65-0	STACK01	Incinerator Emission	8.81E-08	20	19	9.5	Schedule 3	B2	24	8700	3573	3.15E-04	yes
2-Chlorophenol	95-57-8	STACK01	Incinerator Emission	8.81E-08	20	18	9	Schedule 3	B2	24	8700	3573	3.15E-04	yes
3,4,5-Trichlorophenol	609-19-8	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
3,4-Dichlorophenol	95-77-2	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
3,5-Dichlorophenol	591-35-5	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
3-Chlorophenol	108-43-0	STACK01	Incinerator Emission	8.81E-08	20	15	7.5	Schedule 3	B2	24	8700	3573	3.15E-04	yes
4-Chlorophenol	106-48-9	STACK01	Incinerator Emission	8.81E-08	20	15	7.5	Schedule 3	B2	24	8700	3573	3.15E-04	yes
Pentachlorophenol	87-86-5	STACK01	Incinerator Emission	8.81E-08	20	20	10	Schedule 3	B1	24	8700	3573	3.15E-04	yes
Other Non-Chlorinated Polycyclic Aromatic Hydrocarbons [5]														
1-Methylnaphthalene	90-12-0	STACK01	Incinerator Emission	8.81E-08	20	35.5	17.75	Schedule 3	B2	24	8700	3573	3.15E-04	yes
1-Methylphenanthrene	832-69-9	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
2-Chloronaphthalene	91-58-7	STACK01	Incinerator Emission	8.81E-08	20	1	0.5	Schedule 3	B2	24	8700	3573	3.15E-04	yes
2-Methylanthracene	613-12-7	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
2-Methylnaphthalene	91-57-6	STACK01	Incinerator Emission	9.40E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.36E-04	yes
3-Methylcholanthrene	56-49-5	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
7,12-Dimethylbenzo(a)anthracene	57-97-6	STACK01	Incinerator Emission	3.53E-07	20	0.1	0.1	De minimus	N/A	24	8700	3573	1.26E-03	yes
9,10-Dimethylanthracene	781-43-1	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
9-Methylphenanthrene	883-20-5	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Acenaphthene	83-32-9	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Acenaphthylene	208-96-8	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Anthracene	120-12-7	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Benzo(a)anthracene	56-55-3	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Benzo(a)fluorene	238-84-6	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Benzo(a)pyrene [5]	50-32-8	STACK01	Incinerator Emission	8.81E-08	20	1.00E-05	5.00E-06	Schedule 3	B1	8760	8700	685	6.03E-05	no
Benzo(a)pyrene [5]	50-32-8	STACK01	Incinerator Emission	8.81E-08	20	5.00E-03	2.50E-03	URT	B1	24	8700	3573	3.15E-04	yes
Benzo(b)Anthracene	56-55-3	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Benzo(b)fluoranthene	205-99-2	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Benzo(b)fluorene	30777-19-6	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Benzo(e)pyrene	192-97-2	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Benzo(g,h,i)perylene	191-24-2	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Benzo(k)fluoranthene	207-08-9	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Biphenyl	92-52-4	STACK01	Incinerator Emission	1.29E-07	20	60	30	Schedule 3	B1	1	8700	8700	1.12E-03	yes
Chrysene	218-01-9	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Coronene	191-07-1	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Dibenzo(a,h)anthracene	53-70-3	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Dibenzo(a,c)anthracene	215-58-7	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Dibenzo(a,e)pyrene	192-65-4	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Fluoranthene	206-44-0	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Fluorene	86-73-7	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Indeno(1,2,3-cd)pyrene	193-39-5	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
m-Terphenyl	92-06-8	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Naphthalene	91-20-3	STACK01	Incinerator Emission	1.66E-06	20	22.5	11.25	Schedule 3	B1	24	8700	3573	5.93E-03	yes
Naphthalene	91-20-3	STACK01	Incinerator Emission	1.66E-06	20	50	25	Schedule 3	B1	0.16	8700	14533	2.41E-02	yes

Contaminant Name	CAS Number	Source ID	Source Description	Contaminant Emission Rate (by source) (g/s)	Distance to Property Line (m)	Criteria [1] (µg/m³)	50% of Criteria (µg/m³)	Regulation Schedule #	Benchmark Category [2]	Criteria Averaging Time (hours)	Table B-1 1-hour Dispersion Factor for Shortest Distance to Property Line [3] (µg/m³ / g/s)	Table B-1 Dispersion Factor Converted to Criteria Averaging Time (µg/m³ / g/s)	Predicted Concentration (µg/m³)	Contaminant Negligible?
o-Terphenyl	84-15-1	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Perylene	198-55-0	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Phenanthrene	85-01-8	STACK01	Incinerator Emission	2.28E-07	20	0.1	0.1	De minimus	N/A	24	8700	3573	8.15E-04	yes
Picene	213-46-7	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
p-Terphenyl	92-94-4	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Pyrene	129-00-0	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
Quinoline	91-22-5	STACK01	Incinerator Emission	8.81E-08	20	0.005	0.0025	Schedule 3	B2	24	8700	3573	3.15E-04	yes
Tetralin	119-64-2	STACK01	Incinerator Emission	8.81E-08	20	151.5	75.75	Schedule 3	B2	24	8700	3573	3.15E-04	yes
Triphenylene	217-59-4	STACK01	Incinerator Emission	8.81E-08	20	0.1	0.1	De minimus	N/A	24	8700	3573	3.15E-04	yes
PCBs														
Polychlorinated biphenyls (PCBs)	1336-36-3	STACK01	Incinerator Emission	8.86E-07	20	0.15	0.075	Schedule 3	B1	24	8700	3573	3.17E-03	yes
Dioxins and Furans [6]														
Dioxins, Furans and Dioxin-like PCBs	N/A-DF	STACK01	Incinerator Emission	8.84E-11	20	1.00E-07	5.00E-08	Schedule 3	B1	24	8700	3573	3.16E-07	no
Hydrogen Halides and Halides														
Ammonia	7664-41-7	STACK01	Incinerator Emission	9.34E-04	20	100	50	Schedule 3	B1	24	8700	3573	3.34E+00	yes
Hydrochloric Acid	7647-01-0	STACK01	Incinerator Emission	8.97E-03	20	20	10	Schedule 3	B1	24	8700	3573	3.20E+01	no
Hydrofluoric Acid	7664-39-3	STACK01	Incinerator Emission	1.44E-03	20	0.86	0.43	Schedule 3	B1	24	8700	3573	5.14E+00	no
Hydrofluoric Acid	7664-39-3	STACK01	Incinerator Emission	1.44E-03	20	0.34	0.17	Schedule 3	B1	720	8700	1379	1.98E+00	no
Volatile Organic Compounds														
1,1,1-Trichloroethane	71-55-6	STACK01	Incinerator Emission	4.72E-06	20	115000	57500	Schedule 3	B1	24	8700	3573	1.69E-02	yes
1,1,2-Trichloroethane	79-00-5	STACK01	Incinerator Emission	4.72E-06	20	0.3	0.15	Schedule 3	B2	24	8700	3573	1.69E-02	yes
1,1-Dichloroethane	75-34-3	STACK01	Incinerator Emission	4.72E-06	20	165	82.5	Schedule 3	B1	24	8700	3573	1.69E-02	yes
1,2-Dichloroethane	107-06-2	STACK01	Incinerator Emission	4.72E-06	20	2	1	Schedule 3	B1	24	8700	3573	1.69E-02	yes
1,2-Dichloropropane	78-87-5	STACK01	Incinerator Emission	4.72E-06	20	2400	1200	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Acetone (2-Propanone)	67-64-1	STACK01	Incinerator Emission	7.01E-06	20	11880	5940	Schedule 3	B1	24	8700	3573	2.50E-02	yes
Benzene	71-43-2	STACK01	Incinerator Emission	6.59E-06	20	0.45	0.225	Schedule 3	B1	8760	8700	685	4.51E-03	yes
Bromodichloromethane	75-27-4	STACK01	Incinerator Emission	4.72E-06	20	350	175	Schedule 3	B2	24	8700	3573	1.69E-02	yes
Bromoform	75-25-2	STACK01	Incinerator Emission	4.72E-06	20	55	27.5	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Bromomethane	74-83-9	STACK01	Incinerator Emission	1.28E-05	20	1350	675	Schedule 3	B1	24	8700	3573	4.58E-02	yes
Carbon Tetrachloride	56-23-5	STACK01	Incinerator Emission	4.72E-06	20	2.4	1.2	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Chloroform	67-66-3	STACK01	Incinerator Emission	4.75E-06	20	1	0.5	Schedule 3	B1	24	8700	3573	1.70E-02	yes
cis-1,2-Dichloroethylene	156-59-2	STACK01	Incinerator Emission	4.72E-06	20	105	52.5	Schedule 3	B1	24	8700	3573	1.69E-02	yes
trans-1,2-Dichloroethylene	156-60-5	STACK01	Incinerator Emission	4.72E-06	20	105	52.5	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Dibromochloromethane	124-48-1	STACK01	Incinerator Emission	4.72E-06	20	0.2	0.1	Schedule 3	B2	24	8700	3573	1.69E-02	yes
Dichlorodifluoromethane (FREON 12)	75–71–8	STACK01	Incinerator Emission	4.72E-06	20	0.1	0.1	De minimus	N/A	24	8700	3573	1.69E-02	yes
Ethylbenzene	100-41-4	STACK01	Incinerator Emission	4.72E-06	20	1900	950	Schedule 3	B1	0.16	8700	14533	6.86E-02	yes
Ethylbenzene	100-41-4	STACK01	Incinerator Emission	4.72E-06	20	1000	500	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Ethylene Dibromide	106-93-4	STACK01	Incinerator Emission	4.72E-06	20	3	1.5	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Methyl Ethyl Ketone (2-Butanone)	78-93-3	STACK01	Incinerator Emission	4.72E-06	20	1000	500	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Methylene Chloride (Dichloromethane)	75-09-2	STACK01	Incinerator Emission	4.72E-06	20	220	110	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Styrene	100-42-5	STACK01	Incinerator Emission	4.72E-06	20	400	200	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Tetrachloroethylene	127-18-4	STACK01	Incinerator Emission	4.72E-06	20	360	180	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Toluene	108-88-3	STACK01	Incinerator Emission	1.08E-04	20	2000	1000	Schedule 3	B1	24	8700	3573	3.87E-01	yes
Trichloroethylene	79-01-6	STACK01	Incinerator Emission	4.72E-06	20	12	6	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Trichlorofluoromethane (FREON 11)	75-69-4	STACK01	Incinerator Emission	4.72E-06	20	6000	3000	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Vinyl Chloride	75-01-4	STACK01	Incinerator Emission	4.72E-06	20	1	0.5	Schedule 3	B1	24	8700	3573	1.69E-02	yes
Xylenes	1330-20-7	STACK01	Incinerator Emission	1.42E-05	20	3000	1500	Schedule 3	B1	0.16	8700	14533	2.06E-01	yes
Xylenes	1330-20-7	STACK01	Incinerator Emission	1.42E-05	20	730	365	Schedule 3	B1	24	8700	3573	5.06E-02	yes
Aldehydes														
Formaldehyde (Methanal)	50-00-0	STACK01	Incinerator Emission	1.76E-03	20	65	32.5	Schedule 3	B1	24	8700	3573	6.29E+00	yes
Acetaldehyde (Ethanal)	75-07-0	STACK01	Incinerator Emission	1.08E-04	20	500	250	Schedule 3	B1	24	8700	3573	3.86E-01	yes
Acetaldehyde (Ethanal)	75-07-0	STACK01	Incinerator Emission	1.08E-04	20	500	250	Schedule 3	B1	0.5	8700	10563	1.14E+00	yes
Acrolein	107-02-8	STACK01	Incinerator Emission	9.28E-05	20	0.4	0.2	Schedule 3	B1	24	8700	3573	3.32E-01	no
Acrolein	107-02-8	STACK01	Incinerator Emission	9.28E-05	20	4.5	2.25	Schedule 3	B1	1	8700	8700	8.07E-01	yes

Contaminant Name	CAS Number	Source ID	Source Description	Contaminant Emission Rate (by source) (g/s)	Distance to Property Line (m)	Criteria [1] (µg/m³)	50% of Criteria (µg/m³)	Regulation Schedule #	Benchmark Category [2]	Criteria Averaging Time (hours)	Table B-1 1-hour Dispersion Factor for Shortest Distance to Property Line [3] (µg/m³ / g/s)	Table B-1 Dispersion Factor Converted to Criteria Averaging Time (µg/m³ / g/s)	Predicted Concentration (µg/m³)	Contaminant Negligible?
Gaseous Pollutants														
Nitrogen Oxides (NO_X)	10102-44-0	STACK01	Incinerator Emission	2.28E-01	20	200	100	Schedule 3	B1	24	8700	3573	8.14E+02	no
Nitrogen Oxides (NO_X)	10102-44-0	STACK01	Incinerator Emission	2.28E-01	20	400	200	Schedule 3	B1	1	8700	8700	1.98E+03	no
Sulphur Dioxide (SO_2)	7446-09-5	STACK01	Incinerator Emission	5.47E-03	20	275	137.5	Schedule 3	B1	24	8700	3573	1.95E+01	yes
Sulphur Dioxide (SO_2)	7446-09-5	STACK01	Incinerator Emission	5.47E-03	20	690	345	Schedule 3	B1	1	8700	8700	4.76E+01	yes
Sulphur Dioxide (SO_2)	7446-09-5	STACK01	Incinerator Emission	5.47E-03	20	100	50	Schedule 3	B1	1	8700	8700	4.76E+01	yes
Sulphur Dioxide (SO_2)	7446-09-5	STACK01	Incinerator Emission	5.47E-03	20	10	5	Schedule 3	B1	8760	8700	685	3.74E+00	yes
Carbon Monoxide	630-08-0	STACK01	Incinerator Emission	1.08E-02	20	6000	3000	Schedule 3	B1	0.5	8700	10563	1.14E+02	yes
Particulate Matter (All Sources)														
Particulate Matter	N/A-PM	STACK01	Incinerator Emission	6.97E-03	20	120	60	Schedule 3	B1	24	8700	3573	2.49E+01	yes
Particulate Matter	N/A-PM	CT1	Cooling Tower Emission	1.53E-02	20	120	60	Schedule 3	B1	24	8700	3573	5.48E+01	yes
Particulate Matter	N/A-PM	Total	Total Facility Emission	2.23E-02	20	120	60	Schedule 3	B1	24	8700	3573	7.97E+01	no
Carbon Monoxide (All Sources)														
Carbon Monoxide	630-08-0	STACK01	Incinerator Emission	1.08E-02	20	6000	3000	Schedule 3	B1	0.5	8700	10563	1.14E+02	yes

Notes:
[1] Air quality limits set out the MECP ACB List dated April 2018, or de-minimus values as per Appendix B of Guideline A-10.
[2] Benchmark Categories are set out in the MECP ACB List; Benchmark 1 (B1) refers to Standards or Guidelines, Benchmark 2 (B2) refers to Screening Levels.
[3] Dispersion factor associated with shortest distance to property line for all sources emitting the contaminant was used.
[4] Metals have been reported from stack testing in the elemental form. It is assumed they will oxidize or react with water moisture in the air upon leaving the stack.
Where specified on the ACB List, the oxidized form of the metal has been used. If both metallic form and oxidized form are on the ACB List, the form having a Standard is assumed.
[5] ACB List Note #7 identifies benzo[a]pyrene (CAS # 50-32-8) as surrogate for the majority of polycyclic aromatic hydrocarbons (PAH).
Many PAH included here as "De minimus" are accounted for by this surrogate, and have been speciated in this negligibility assessment for completeness.
[6] ACB List Note #8: The air standard for dioxins, furans, and dioxin-like PCBs requires the calculation of the total toxicity equivalent (TEQ) concentration contributed by all dioxin-like compounds in the mixture.
The Standard is 0.1 pg TEQ/m3. This is converted to µg/m3 in the Criteria column to align with the Aermod results based on the g/s Contaminant Emission Rate.

Sample Calculation

Predicted Concentration (µg/m³) = Emission Rate (g/s) x Dispersion Factor from Table B-1 (µg/m³ / g/s emission)
= 1.42E-04 g/s x 3573 µg/m³ / g/s emission
= 1 µg/m³

APPENDIX C

Appendix C: Natural Gas Combustion Emissions Calculations

RWDI# 2204908

Stericycle 2022 ESDM Update

Natural gas combustion emissions are calculated based on emission factors from AP-42 Chapter 1.4, Table 1.4-1 and the thermal input rating of the combustion unit.

Assumed exhaust temperature: 125 degrees C

Source ID	Source Description or Title	Firing Configuration	Thermal Input Rating		Natural Gas Heating Value (BTU/ft^3)	Flow Rate (m^3/s)	Emission Factor ($lb/10^6\ ft^3$)	AP-42 Emission Factor Rating	Emission Rate (g/s)
			BTU/hr	KJ/hr					
STACK06	Roof top heating unit	Wall-fired	120,372	127,000	1,020	0.014	100	B	1.49E-03
STACK07	Roof top heating unit	Wall-fired	90,042	95,000	1,020	0.011	100	B	1.11E-03
STACK08	Roof top heating unit	Wall-fired	90,042	95,000	1,020	0.011	100	B	1.11E-03
STACK09	IR heating unit	Wall-fired	149,755	158,000	1,020	0.018	100	B	1.85E-03
STACK10	IR heating unit	Wall-fired	149,755	158,000	1,020	0.018	100	B	1.85E-03
STACK11	IR heating unit	Wall-fired	149,755	158,000	1,020	0.018	100	B	1.85E-03
STACK12	IR heating unit	Wall-fired	149,755	158,000	1,020	0.018	100	B	1.85E-03
STACK13	IR heating unit	Wall-fired	149,755	158,000	1,020	0.018	100	B	1.85E-03
STACK14	IR heating unit	Wall-fired	149,755	158,000	1,020	0.018	100	B	1.85E-03
STACK15	IR heating unit	Wall-fired	149,755	158,000	1,020	0.018	100	B	1.85E-03
STACK17	Dryer	Wall-fired	199,989	211,000	1,020	0.023	100	B	2.47E-03
STACK18	Roof-mounted MAU	Wall-fired	125,111	132,000	1,020	0.015	100	B	1.55E-03
Total:			**1,673,838**	**1,766,000**					**2.07E-02**
Total Excluding Dryer (STACK17):			**1,473,850**	**1,555,000**					**1.82E-02**

Emission Rate Sample Calculation for STACK06

ER = Thermal Input Rating / NG Heating Value x Emission Factor

$$ER = \frac{120{,}372\ BTU}{1\ hr} \times \frac{1\ ft^3}{1{,}020\ BTU} \times \frac{100\ lb}{1{,}000{,}000\ ft^3} \times \frac{1\ kg}{2.2\ lb} \times \frac{1{,}000\ g}{1\ kg} \times \frac{1\ hr}{3600\ s}$$

ER = 1.49E-03 g/s

Flow Rate Sample Calculation (using Ideal Gas Law) for STACK06

Flow Rate = BTU Rating / NG Heating Value x Conversion Factors for Fuel volume to Exhaust Volume

$$Flow\ Rate = \frac{120{,}372\ BTU}{1\ hr} \times \frac{1\ ft^3}{1{,}020\ BTU} \times \frac{28.32\ L}{1\ ft^3} \times \frac{0.042\ mol\ NG}{1\ L} \times \frac{10.996\ mol_{N_2}}{1\ mol_{NG}} \times \frac{1\ L}{0.031\ mol\ N_2} \times \frac{1\ m^3}{1{,}000\ L} \times \frac{1\ hr}{3600\ s}$$

Flow Rate = 0.014 Am³/s

Negligibility Calculation for Natural Gas Combustion Sources Based on Calculated Emission Rates

ER =	Sum of ERs in Column K excluding STACK17	1.82E-02 g/s
ER_I =	NOx Emissions Rate from Incinerator =	2.28E-01 g/s
ER_B =	NOx Emissions Rate from Main Boiler =	1.50E-01 g/s
ER_{TOTAL} =	**$ER + ER_I + ER_B$ =**	**3.96E-01** g/s
ER % =	$ER / ER_{TOTAL} * 100$	4.60%

Appendix C: Boiler Emission Calculations

400 BHP Boiler

Boiler Heat Input Rating	5.19	MW Input Rating (from Thermogenics Spec)
	17724779	BTU/h
	18701000	kJ/h
Actual Exhaust Gas Flow Rate	3.18	m^3/s
Exhaust Gas Flow Rate	280	ºC
	553	K
Atmospheric Pressure	101.3	kPa
Molar Flow	70	mol/s (at 280ºC, 101.3 kPa)

Contaminant	In-Stack Conc. ppm	Mol. Weight g/mol	Emission Rate µg/m^3	Comments
Oxides of Nitrogen	48	46	0.15	In-stack concentration from Thermogenics Inc. Themocoil spec sheet.

Sample Calculations:

Molar flow

$$\frac{3.18\ m^3}{1\ s} \times \frac{101.3\ kPa}{553\ K} \times \frac{1\ mol\ K}{8.314\ L\ kPa} \times \frac{1000\ L}{1\ m^3} = 70\ mol/s$$

NOx Emissions

$$\frac{7.0E{+}01\ mol\ exh}{1\ s} \times \frac{48\ mol\ NOx}{1000000\ mol\ exh} \times \frac{46\ g\ NOx}{1\ mol\ NOx} = 0.15\ g/s$$

THERMOGENICS INC.

STACK EXHAUST INFORMATION RE: THERMOCOILS

FUEL: NATURAL GAS
CONTROLS: FULLY MODULATING

Boiler HP	**75**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**600**
Maximum Heat Input (MW)	0.96	1.28	1.93	2.55	3.22	3.87	4.54	5.19	5.81	6.35	7.62
Maximum Gas Input (M^3 / hour)	93.5	124.6	187	249	311.5	374	439	501	534	613	736
Stack Inside Diameter (meter)	0.30	0.356	0.41	0.46	0.51	0.60	0.60	0.60	0.66	0.66	0.71
Stack Gases Volume (Actual m^3/sec)	0.60	0.80	1.22	1.60	2.00	2.40	2.86	3.18	3.54	3.98	4.77
Estimated Temp. of Exhaust at Stack Exit at Rated Output. (ºC)	285	280	290	280	280	275	285	280	285	275	280
Stack Exit Velocity at Rated Output. (m/sec)	8.57	8.04	9.24	9.63	9.80	8.50	10.14	11.28	10.35	11.63	12.10
Stack Emissions Estimated CO NOX SOX	Less Than 400 PPM Less Than 90 PPM NIL				Less Than 400 PPM Less Than 48 PPM NIL						

THERMOGENICS INC.

Monday, May 28, 2012
Re: 90145

Stericycle Inc.
19 Armthorpe Road
Brampton, Ontario, L6T 5M4
Canada

Tel: +1 (905) 595-2651
Fax: +1 (905) 595-2657

e-mail: nfernandes@stericycle.com

Attn: **To whom it may concern**

Re: **Thermocoil boiler Model MG 400 NAX, Serial No.: 212620**

Dear Mr. Fernandes,

Thermocoil boilers are designed to comply with the CCME National Emission Guidelines for Commercial/Industrial Boilers and Heaters guideline A9 for NOx 49.6 ppm at O2 of 3%, Boilers with capacity 10-100 MMBtu/h

Sincerely,

H. Bakalov, P.Eng.
Director of Engineering
Thermogenics Inc.
6 Scanlon Court
Aurora, Ontario, L4G 7B2
Tel: 905 727-1901 x 231
Fax: 905 727-7456
e-mail: cbakalov@thermogenicsboilers.com

LICENSED PROFESSIONAL ENGINEER
28.05.2012
H.D. BAKALOV
PROVINCE OF ONTARIO

APPENDIX D

REPORT

STERICYCLE ULC

BRAMPTON, ONTARIO

INCINERATOR SOURCE TESTING PROGRAM

RWDI #2202865

October 17, 2022

SUBMITTED TO

Ministry of the Environment, Conservations and Parks
Technical Assessment and Standards Development Branch
6th Floor
40 St. Claire Ave
Toronto, Ontario, M4V 1M2
Source.testing@ontario.ca

cc: Stericycle ULC
Dan Kokol: Env. Health Safety
dkokol@stericycle.com

SUBMITTED BY

Kirk Easto, d.E.T., QSTI
Senior Project Manager / Principal
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RWDI
600 Southgate Drive,
Guelph, Canada, N1G 4P6
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EXECUTIVE SUMMARY

RWDI AIR Inc. (RWDI) was retained by Stericycle ULC (Stericycle) to conduct emission sampling on the exhaust of the biomedical incinerator at their facility, located in Brampton, Ontario. The purpose of this sampling program was to fulfill the conditions in Stericycle's Environmental Compliance Approval (ECA) Number A680324. A copy of the ECA is presented in Appendix A. The Pre-Test Plan for this testing program was originally submitted on February 8th, 2022, to the Ontario Ministry of the Environment, Conservations and Parks. Approval for the testing program was granted by the MECP on February 18th, 2022. Testing was conducted from June 15th to 17th 2022 under normal operating process conditions. Results from the sampling program are presented in the 'Tables' section of the report, with more detailed sampling results located in the Appendices.

The following represents a summary of the stack testing results and compares the testing results to the limits set out in Stericycle's Environmental Compliance Approval.

Parameter	Stack Testing Results [1]	ECA Limit [2]
Total Hydrocarbons	7.91 ppm	50 ppm
Carbon Monoxide [3]	5.87 mg/m^3	9 mg/m^3
Oxygen (Secondary Combustion Chamber)	8.69 %	> 6%
Hydrogen Chloride	5.55 mg/m^3	7 mg/m^3
Particulate Matter	4.35 mg/m^3	17 mg/m^3
Dioxins and Furans (TEQ)	< 54.4 pg/m^3	80 pg/m^3
Oxides of Nitrogen (NO_X) [3]	123 mg/m^3	187 mg/m^3
Sulphur Dioxide [3]	< 2.96 mg/m^3	17 mg/m^3
Mercury	9.12 µg/m^3	15 µg/m^3
Cadmium	< 0.329 µg/m^3	7 µg/m^3
Lead	3.03 µg/m^3	26 µg/m^3

[1] Concentrations are referenced to 25°C, 101.3 kPa, 11% O_2 and dry.

[2] Refer to Section 44 of the ECA

[3] Permit has a 24-hr or 12-hr rolling average limit, the values presented only represents that of the test times

The results of the testing indicate that all parameters demonstrate compliance with respect to the ECA.

Dispersion Modelling was conducted using the results from this source test in order to assess the aggregate off-property impact from test contaminants. Predicted concentrations for contaminants having concentration limits specified in the ECA were found to be less than their respective Point of Impingement (POI) limits at all receptors in the area. Dispersion modeling was conducted using AERMOD version 19191 and MECP's Toronto suburban MET data set.

A relative accuracy test audit was also conducted on the facility CEM's. They were found to be within the acceptable limits.

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1 INTRODUCTION

1.1 Summary of Test Program

RWDI AIR Inc. (RWDI) was retained by Stericycle ULC (Stericycle) to conduct emission sampling on the exhaust of the biomedical incinerator at their facility, located in Brampton, Ontario. The purpose of this sampling program was to fulfill the conditions in Stericycle's Environmental Compliance Approval (ECA) Number A680324. A copy of the ECA is presented in Appendix A.

The results of this stack testing were modelled using AERMOD v.19191 dispersion model to determine compliance with Point of Impingement limits defined in the MECP Air Contaminants Benchmark List.

The Pre-Test Plan for this testing program was originally submitted on February 8th, 2022, to the Ontario Ministry of the Environment, Conservations and Parks. Approval for the testing program was granted by the MOE on February 18th, 2022. A copy of the approval letter is provided in Appendix B. This testing was completed from June 15th to 17th, 2022 under normal maximum operating process conditions.

The stack testing study consisted of the following parameters:

- Particulate Matter (PM)
- Velocity, flow rate and temperature
- Metals
- Poly-cyclic Aromatic Hydrocarbons (PAHs), Dioxins and furans and dioxin like PCB's
- Polychlorinated benzenes, phenols and biphenyls
- Acrolein, Acetylaldehyde (Ethanal) and Propionaldehyde (Propanal)
- Hydrogen chloride (HCl), Hydrogen Fluoride (HF) and Ammonia (NH_3)
- Total hydrocarbons (THC)
- Nitrogen oxides (NO_X)
- Sulphur dioxide (SO_2)
- Oxygen (O_2)
- Carbon dioxide (CO_2)
- Carbon monoxide (CO)

A relative accuracy test audit (RATA) was also conducted on the facility's continuous emission monitors (CEM's).

1.2 Key Personnel

RWDI's field team lead for the test program was Mitchell Southwell, B.Sc., QSTI, and Kirk Easto, d.E.T., QSTI was the Senior Project Manager. The primary contact for Stericycle was Dan Kokol. A list of all participants is included in **Appendix N**.

2 SOURCE DESCRIPTION

2.1 Facility Description

Stericycle ULC operates a biomedical waste incinerator in their plant at 95 Deerhurst Drive, Brampton, Ontario.

2.2 Process Description

A Joy Ecolaire MW 2500 two-stage starved air incinerator is used at the plant. Biomedical waste in containers is fed into the primary chamber of the incinerator using a hydraulic ram feed system. Auxiliary natural gas burners are used to ignite the waste which burns under sub-stoichiometric conditions. Combustion gases pass into a secondary chamber where the combustion process is completed. The combustion gases are retained for a minimum of 2 seconds above 1000°C in the secondary chamber.

2.3 Sample Location Description

The exhaust stack is located on the plant roof with a height above grade of 18.3 m and a diameter of 0.61 m. Two sampling ports for isokinetic sampling are 90° apart, at the same vertical height and located about 1 m above the roof. These ports are located at an "ideal" location as defined by the MOE Source Testing Code. Two additional sampling ports for non-isokinetic combustion gas and halides sampling are located about 0.4 m above the isokinetic sampling ports. For this round of testing an additional port was created at the outlet of the oxidizer secondary chamber. Oxygen, carbon monoxide and total hydrocarbons were measured at the outlet of the secondary chamber.

3 RESULTS

3.1 Objective and Test Matrix

The average emission results for this study are presented in the **tables section** of this report. A minimum of three tests were performed for all the parameters tested in the study. Detailed information for each test run can be found in the appendices. The following **Table 3.1.1** identifies each sampling parameter, and identifies the corresponding table, and appendices to locate the results from the sampling program.

Table 3.1.1: Test Matrix Summary

Parameter	Table	Appendix
Particulate Matter and Selected Metals	4	B
Benzenes, Phenolics and other Chlorinated Organics	5	C
Dioxins and Furan Isomers	6	C
Hydrogen chloride and Fluoride	7	D
Volatile Organic Compounds	8	E
Acrolein, Acetaldehyde (Ethanal) and Formaldehyde (Methanal)	9	F
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All field notes collected during this study are presented in **Appendix I**. All laboratory results are included in **Appendix J**. All calibration information for the equipment used for this study is included in **Appendix K**.

3.2 Discussion of Results

The source testing was a requirement of the facility ECA Number A680324, issued on June 28th, 2019. The results of this testing program shows that all parameters sampled for are in compliance with their applicable limits specified in the ECA.

When the laboratory reported values less than their method detection limit for a specific component, the respective concentration and emission rates were calculated using the Reportable Detection Limit (RDL). This method is a conservative approach when calculating the emissions.

3.2.1 Dispersion Modelling

Dispersion Modelling was conducted using the results from this source test in order to assess the aggregate off-property impact from all like contaminants. The AERMOD dispersion model has been used in the most recent ECA application and was used to predict maximum concentrations using the measured results from this source test.

One scenario was considered for this evaluation as the contaminants in question are only emitted from one source.

The dispersion modeling was conducted using the latest version of AERMOD 19191 and MECP's Toronto suburban MET data set.

Appendix M contains information on the dispersion modelling. **Table 12** provides a comparison of the ESDM emission rates to this year's stack testing results. Parameters modelled were those included in the most recent ESDM report. All contaminants were found to be less than their respective Point of Impingement (POI) limits at all receptors in the area.

3.2.2 Relative Accuracy Test Audit (RATA)

A total of twelve 30-minute tests were completed on the installed CEM system. The results of this study indicate that the relative accuracy and absolute difference for all the monitors audited were within the limits set out in Environment Canada 1/PG/7 Method.

A summary of all the RATA tests and the results of the relative accuracy calculations are presented in **Table 3.2.1**.

Table 3.2.1: Summary of RATA Results

Parameter	Relative Accuracy (10% limit)	Bias (5% limit)	Bias Adjustment Factor
Oxygen (O_2)	1.00%	No Bias	1.00
Carbon Monoxide (CO)	0.20%	0.09%	2.732
Nitrogen Oxides (NOx)	1.10%	0.20%	0.893

Detailed results and calculations of individual tests runs are presented in **Appendix H**.

The CEM system is acceptable following the criteria of equal to or less than 10% relative accuracy for the parameters tested. 1/PG/7 recommends the use of a bias adjustment factor (BAF) for monitors with a bias result; however, it is recommended that the new BAF for the Carbon Monoxide monitor is not used due to the low-level concentrations.

3.3 Conclusion

Testing was successfully completed on June 15th to 17th, 2022. All parameters were tested in accordance with referenced methodologies following the MOE approved Pre-Test Plan submitted February 8th, 2022. All parameters tested meet their respective limit in the ECA.

4 SAMPLING METHODOLOGY

The following section provides an overview of the sampling methodologies used in this program. Table 1, located in the Tables section, summarizes the testing parameters and corresponding methodologies.

4.1 Stack Velocity, Temperature, and Volumetric Flow Rate Determination

The exhaust velocities and flow rates were determined following the Ontario Source Testing Code (OSTC) Method 2, “Determination of Stack Gas Velocity and Flow Rate (Type S Pitot Tube)”. Velocity measurements were taken with a pre-calibrated S-Type Pitot tube and incline manometer.

Volumetric flow rates were determined following the equal area method as outlined in OSTC Method 2. Temperature measurements were made simultaneously with the velocity measurements and were conducted using a chromel-alumel type "k" thermocouple in conjunction with a digital temperature indicator.

The dry molecular weight of the stack gas was determined following calculations outlined in OSTC Method 3, "Determination of Molecular Weight of Dry Stack Gas". Stack moisture content was determined through direct condensation and according to OSTC Method 4, "Determination of Moisture Content of Stack Gas".

4.2 Sampling for Particulate Matter (PM) and Metals

Sampling for PM and Metals on the incinerator exhaust was performed in accordance with OSTC Method 5, "Determination of Particulate Emissions from Stationary Sources" and U.S. EPA Method 29 "Determination of Metals Emissions from Stationary Sources", respectively. Both PM and Metals were sampled concurrently using the same sampling train.

Sampling was conducted isokinetically using the required number of traverse points across the stack diameter. The sample was drawn through a glass lined sample probe and quartz fibre filter, which was maintained at a temperature of 120 ± 14°C (248 ± 25°F). The sample was then introduced into the impinger train. The impinger train included two 5% HNO_3/10% H_2O_2 absorbing solution impingers, one empty impinger, two impingers containing acidified $KMnO_4$ solution and one impinger containing silica gel. Particulate emissions are collected on the heated filter; gaseous emissions are collected in the hydrogen peroxide and acidified potassium permanganate solution impingers. Mercury is analyzed specifically in the permanganate solution and all metals including mercury are analyzed in the peroxide impingers.

For the isokinetic testing, a total of 16 points (8 per traverse) were used. Sampling duration was 20 minutes per point with a total sampling time per isokinetic test of 320 minutes. Target sample volume was 5.6 m^3 (200ft^3). A total of three test runs were completed for the isokinetic testing.

Upon completion of the test, the sampling train was recovered, as in the procedures detailed in the reference method, and the samples were packaged for transport to Bureau Veritas Laboratory in Mississauga, Ontario for analysis.

4.3 Sampling for Poly-cyclic Aromatic Hydrocarbons (PAH) and Dioxin and Furan Congeners (PCDD/PCDF)

Sampling for PAH's and dioxin and furan congeners was performed in accordance with Environment Canada Method 1/RM/2 (1/RM/2) "Measurement of Releases of Selected Semi-Volatile Organic Compounds from Stationary Sources". Both compound categories were determined concurrently using the same sampling train.

Sampling was conducted isokinetically using the required number of traverse points across the stack diameter. The sample was drawn through a glass lined sample probe and proofed glass fibre filter. Both of these were maintained at a temperature of 120 ± 14ºC (248 ± 25ºF). The sample then passed through a water cooled condenser and an XAD-2 absorbent module. The temperature of the XAD-2 module was kept below 20°C. The stack gas sample was then introduced into the impinger train. The impinger train was configured as specified in the reference method.

All glassware and filters were cleaned and proofed in accordance with procedures in 1/RM/2 prior to use in the field. Cleaning, proofing and analysis were performed by Bureau Veritas Laboratory in Mississauga, Ontario.

Upon completion of the test, the sampling train was recovered, as in the procedures detailed in the reference method, and the samples were kept cool and packaged for transport to Bureau Veritas Laboratory in Mississauga, Ontario for analysis. The filter, XAD-2 module, impinger catch, and all rinses were analysed for the PAH's and PCDD/PCDF's using high resolution gas chromatography / mass spectrometry.

For the isokinetic testing, a total of 16 points (8 per traverse) were used. Sampling duration was 20 minutes per point with a total sampling time per isokinetic test of 320 minutes. Target sample volume was 5.6 m^3 (200ft^3). There was a total of three test runs for PAH's and PCDD/PCDF's

4.4 Sampling for Hydrogen Chloride, Hydrogen Fluoride and Ammonia

Sampling for hydrogen chloride and fluoride compounds was completed following U.S. EPA Method 26 "Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources - Non-Isokinetic Method". The sampling was conducted using a midget impinger sampling train. The sample was drawn through a glass lined probe, glass fibre filter and three way stopcock which was maintained at a temperature of 120 ± 14 °C (248 ± 25 °F). The sample then entered the impinger train, which consisted of five impingers. The impingers included two 0.1N sulphuric acidic impingers, two 0.1N sodium hydroxide solutions, and one silica impinger.

Upon completion of the testing, samples were kept cool and submitted to Bureau Veritas Laboratory in Mississauga, Ontario for analysis.

There was a total of three samples for hydrogen chloride and fluoride compounds and Ammonia collected.

4.5 Sampling for Volatile Organic Compounds

Sampling for Polychlorinated benzenes, phenols and biphenyls was conducted using a volatile organic sampling train (VOST) following U.S. EPA SW846 Method 0030. Sample gas was collected on a pair of adsorbent tubes, the first containing Tenex, and the second, a combination of Tenex/charcoal. Since there was no visible condensate in the knockout flask located after the first tube, it was not recovered for analysis. Each set of tubes were sampled over a 60-minute period at 0.25 L/min. Samples were then submitted to Bureau Veritas Laboratory in Mississauga, Ontario for analysis. VOST tubes were "proofed" to ensure that there was no contamination before taking any samples.

There was a total of three samples for the VOST sampling collected.

4.6 Sampling for Acrolein, Acetaldehyde (Ethanal) and Propionaldehyde (Propanal)

Sampling for Acrolein, Acetaldehyde (Ethanal) and Propionaldehyde (Propanal) was conducted following California Air Resources Board (CARB) Modified Method 430. This method is based on chemistry using dinitrophenylhydrazine (DNPH) to capture acrolein in air. Acrolein reacts with DNPH in an acidic solution and is continuously extracted out by toluene. During sampling, the toluene breaks up into small droplets; this allows a liquid-liquid extraction removing any hydrazones in the aqueous solution.

Gas samples were extracted from the stack using a Teflon probe connected to three mini-impingers containing acidified dinitrophenylhydrazine (DNPH), toluene and water (2 mL DNPH-HCl, 2 mL toluene, and 10 mL deionized water). Triplicate samples were collected 30-minutes per duct at a sampling rate of 0.3 L/min. Stack gas was collected until either the first impinger received enough carbonyl containing compounds (aldehydes and ketones) to consume the DNPH reagent causing the lower water phase to turn clear or to a maximum of two (2) hours. For each of the tests conducted, the two (2) hour maximum was reached.

4.7 Continuous Emissions Monitoring for O_2, CO_2, CO, SO_2, NO_X, and THC

Testing for O_2, CO_2, CO, SO_2, and NO_X was accomplished using continuous emission monitors (CEM). The exhaust gas sample was withdrawn from a single point at the center of the duct using a stainless-steel probe. The sample proceeded to a heated filter, where particulate matter was removed, and then transferred via a heated Teflon line to a sample conditioner. The Teflon line was heated above the condensation temperature of the exhaust gas stream. The sample conditioner removed any moisture in the exhaust. The sample was then routed through a manifold system and introduced to the individual CEM's for measurement.

THC was measured by drawing a sample of the gas stream through a heated filter, where particulate matter was removed, and then directly into a flame ionization detector, with moisture present in the gas stream.

Prior to testing, sample system bias checks and instrument linearity checks (calibration error) were completed. In addition, the analysers were calibrated (zeroed and span checked) at the completion of each run. A Campbell Scientific data logger system programmed to collect and record data at 1- second intervals was used. Average 1-minute concentrations were recorded from the 1-second measurements.

Oxygen was measured at the exhaust of the main stack as well as at the outlet of the secondary chamber. THC was measured at the outlet of the secondary chamber; CO, CO_2, SO_2 and NO_X were measured at the main stack location.

4.8 Relative Accuracy Test Audit

Stericycle's CEM system was tested using the performance specifications as outlined in Section 5.3.4 (Relative Accuracy Test Protocols) of the Environment Canada document, EPS 1/PG/7, "Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emissions from Thermal Power Generation". A total of twelve 30-minute tests were conducted, and the corresponding 30-minute average concentrations from Stericycle's CEM system and RWDI's reference method were obtained. Prior to starting the RATA all bias adjustment factors (BAF's) were set to 1.00.

5 QUALITY ASSURANCE/QUALITY CONTROL ACTIVITIES

Applicable quality assurance measures were implemented during the sampling program to ensure the integrity of the results. These measures included detailed documentation of field data, equipment calibrations for all measured parameters, completion of Chain of Custody forms when submitting laboratory samples, and submission of field blank samples to the laboratories. Table 2 presents a sample log and summarizes the sampling times, sample ID's, filter ID's, and XAD trap ID's.

Quality control procedures specific to the CEM monitoring included linearity checks, to determine the instrument performance, and reproducibility checks prior to its use in the field. Regular performance checks on the analyser were also carried out during the testing program by performing hourly zero checks and span calibration checks using primary gas standards. Sample system bias checks were also done. These checks were used to verify the ongoing accuracy of the monitor and sampling system over time. Pollutant-free (zero) air was introduced to perform the zero checks, followed by a known calibration (span) gas into the monitor. The response of the monitor to pollutant-free air and the corresponding sensitivity to the span gas were recorded regularly during the tests.

Calibration gas was mixed using an Environics 4040 Gas Dilution System. The mass flow controllers are factory calibrated using a primary flow standard traceable to the United States National Institute of Standards and Technology (NIST). Each flow controller utilizes an 11-point calibration table with linear interpolation, to increase accuracy and reduce flow controller nonlinearity. The calibration is performed yearly, and the records will be included in the Source Testing Report. A multi-point EPA Method 205 check will be executed in the field prior to testing to ensure accurate gas-mixtures. The gas dilution system consisting of calibrated orifices or mass flow controllers dilutes a high-level calibration gas to within ±2% of predicted values. The gas divider is capable of diluting gases at set increments and will be evaluated for accuracy in the field in accordance with US EPA Method 205 "Verification of Gas Dilution Systems for Field Instrument Calibrations". Before testing, the gas divider dilutions will be measured to evaluate that the responses are within ±2% of predicted values. In addition, a certified calibration gas within ±10% of one of the tested dilution gases will be introduced into an analyzer to ensure the response of the gas calibration is within ±2% of the cylinder concentration.

Leak checks were performed on the sampling train by plugging the sample inlet and pulling a representative vacuum. This check was done before and after each test. Similar leak check procedures for pitot tube and pressure lines were also conducted. Leak checks for each test were documented on the field data sheets presented in the applicable appendices for each sample parameter.

6 OPERATING CONDITIONS

Operating conditions during the sampling were monitored by Stericycle personnel. All equipment was operated under normal conditions.

Radio contact was kept between the process operators and the sampling team. A member of the RWDI sampling team contacted the operator before each test, to ensure that the process was at normal operating conditions. Appendix L contains the process information supplied by Stericycle.

TABLES

Table 1: Summary of Sampling Parameters and Methodology

Source Location	No. of Tests	Sampling Parameter	Sampling Method
Incinerator	6	Velocity, Temperature and Flow Rate	OSTC [1] Methods 1-4
	3	Particulate Matter	OSTC [1] Methods 5
	3	Metals	U.S. EPA[2] Method 29
	3	Semi Volatile Organic Compounds	Environment Canada Method RM/2
	3	Dioxins and Furans	Environment Canada Method RM/2
	3	Ammonia	U.S. EPA[2] Method 26
	3	Acrolein	CARB [3] 430 Method
	3	Volatile Organic Compounds	U.S. EPA[2] SW846 Method 0030
	3	Sulphur Dioxide	U.S. EPA[2] Method 6C (CEM)
	3	Total Oxides of Nitrogen	U.S. EPA[2] Method 7E (CEM)
	3	Oxygen	OSTC[1] Method 3A
	3	Carbon Dioxide	OSTC[1] Method 3A
	3	Carbon Monoxide	U.S. EPA[2] Method 10
	3	Hydrogen Chloride/Fluoride	U.S. EPA[2] Method 26
	3	Total Hydrocarbons (THC)	U.S. EPA[2] Method 25A

Notes:

[1] OSTC - Ontario Source Testing Code - Version 3

[2] U.S. EPA - United States Environmental Protection Agency

[3] CARB - California Air Resources Board

Table 2: Sampling Summary and Sample Log

Source and Test #	Sampling Date	Start Time	End Time	Filter ID / Trap ID	Lab Sample ID
Velocity / Particulate Matter / Metals					
Blank	17-Jun-22	-	-	-	SYG281
Test #1	15-Jun-22	9:18 AM	2:58 PM	22021721	SYG283
Test #2	16-Jun-22	8:58 AM	4:16 PM	22031105	SYG284
Test #3	17-Jun-22	8:36 AM	2:11 PM	22031106	SYG285
Velocity / PAH / Dioxins and Furans					
Blank	17-Jun-22	-	-	-	SYG390
Test #1	15-Jun-22	9:18 AM	2:58 PM	Trap 6	SYG391
Test #2	16-Jun-22	8:58 AM	4:16 PM	Trap 3	SYG392
Test #3	17-Jun-22	8:36 AM	2:11 PM	Trap 2	SYG393
Acrolein					
Blank	17-Jun-22	-	-	-	SYG286
Test #1	15-Jun-22	11:43 AM	1:43 PM	-	SYG287
Test #2	16-Jun-22	2:06 PM	4:06 PM	-	SYG288
Test #3	17-Jun-22	11:00 AM	1:00 PM	-	SYG289
Volatile Organic Compounds					
Blank	17-Jun-22	-	-	-	SYG207
Test #1	15-Jun-22	10:30 AM	11:30 AM	-	SYG208
Test #2	16-Jun-22	10:05 AM	11:05 AM	-	SYG209
Test #3	17-Jun-22	9:47 AM	10:47 AM	-	SYG210
Hydrogen Chloride/ Hydrogen Fluoride/ Ammonia					
Blank	17-Jun-22	-	-	-	SYG273,SYH388,SYG277
Test #1	15-Jun-22	9:20 AM	10:20 AM	-	SYG274,SYG278
Test #2	16-Jun-22	9:00 AM	10:00 AM	-	SYG275,SYG279
Test #3	17-Jun-22	8:40 AM	9:40 AM	-	SYG276,SYG280

Table 3: Sampling Summary - Flow Characteristics

Stack Gas Parameter		Test No. 1			Test No. 2			Test No. 3			TOTAL AVERAGE
		PM [1]	SVOC[2]	Average	PM [1]	SVOC[2]	Average	PM [1]	SVOC[2]	Average	Average
Testing Date		15-Jun-22			16-Jun-22			17-Jun-22			-
Stack Temperature	°F	114	115	115	125	126	126	122	123	123	**121**
	°C	45.6	46.1	45.8	51.7	52.2	51.9	50.0	50.6	50.3	**49.4**
Moisture	%	4.0%	3.9%	4.0%	6.1%	6.2%	6.2%	5.9%	6.1%	6.0%	**5.4%**
Velocity	ft/s	22.6	23.0	22.8	25.5	24.9	25.2	23.3	24.5	23.9	**24.0**
	m/s	6.87	7.01	6.94	7.77	7.60	7.68	7.10	7.46	7.28	**7.30**
Actual Flow Rate	CFM	4,251	4,337	4294	4,807	4,697	4752	4,392	4,613	4,502	**4,516**
Referenced Flow Rate[3]	CFM	3,821	3,903	3862	4,133	4,032	4082	3,703	3,876	3,790	**3,911**
	m^3/s	1.80	1.84	1.82	1.95	1.90	1.93	1.75	1.83	1.79	**1.84**
Sampling Isokinetic Rate	%	98	99	98	100	100	100	98	101	99	**99**

Notes:

[1] PM = Sampling for total particulate matter and metals

[2] SVOC = Sampling for Semi-Volatile Organic Compounds

[3] Referenced flow rate expressed as dry at 101.3 kPa, 25 °C, and Actual Oxygen

Table 4: Particulate Matter and Metals - Averaged Results

Parameter	Concentration	Concentration @ 11% O_2	Emission Rate
Particulate	**(mg/m^3)**	**(mg/m^3)**	**(mg/s)**
Particulate in Acetone Rinse	-	-	-
Particulate on Filter	-	-	-
Particulate Matter	3.81	4.35	6.97
Metals	**($\mu g/m^3$)**	**($\mu g/m^3$)**	**(mg/s)**
Aluminum (Al)	40.9	46.7	0.0749
Calcium (Ca)	217	248	0.395
Iron (Fe)	38.6	44.1	0.0701
Lithium (Li)	< 1.95	< 2.23	< 0.00357
Magnesium (Mg)	16.9	19.3	0.0309
Silicon (Si)	57.2	65.3	0.104
Sodium (Na)	917	1047	1.68
Zinc (Zn)	156	178	0.287
Antimony (Sb)	< 1.53	< 1.75	< 0.00280
Arsenic (As)	< 0.455	< 0.520	< 0.000833
Barium (Ba)	4.86	5.55	0.00891
Beryllium (Be)	< 0.102	< 0.117	< 0.000187
Boron (B)	< 30.9	< 35.3	< 0.0565
Cadmium (Cd)	< 0.288	< 0.329	< 0.000550
Chromium (Cr)	< 1.78	< 2.03	< 0.00324
Cobalt (Co)	< 0.102	< 0.117	< 0.000187
Copper (Cu)	5.62	6.42	0.0103
Lead (Pb)	2.65	3.03	0.00488
Manganese (Mn)	1.12	1.28	0.00204
Molybdenum (Mo)	4.24	4.84	0.00775
Nickel (Ni)	1.43	1.63	0.00262
Phosphorus (P)	< 51.2	< 58.5	< 0.0937
Selenium (Se)	< 1.14	< 1.30	< 0.00208
Silver (Ag)	1.17	1.34	0.00217
Strontium (Sr)	< 0.689	< 0.787	< 0.00126
Tin (Sn)	10.7	12.2	0.0196
Titanium (Ti)	5.90	6.74	0.0108
Vanadium (V)	< 0.341	< 0.390	< 0.000624
Mercury	**($\mu g/m^3$)**	**($\mu g/m^3$)**	**(mg/s)**
Filterable Hg	-	-	-
Non-Filterable Hg	-	-	-
Total Hg	7.98	9.12	0.0147

Notes:

-Sampling followed OSTC Method 5 (PM) and U.S. EPA Method 29 (Metals)

-All referenced concentration values are expressed at 101.3kPa, 25°C,

-Average of three tests

-When laboratory analysis was below the detection limit, the Reportable Detection Limit (RDL) was used to calculate the concentration and emission rate

Detailed sampling results including individual test results can be found in Appendix B

Table 5: Polycyclic Aromatic Hydrocarbons (PAH's) - Averaged Results

Parameter	Concentration	Concentration @ 11% O_2	Emmision Rate
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/s$)
1-Methylnaphthalene	< 0.0475	< 0.0543	< 0.0881
1-Methylphenanthrene	< 0.0475	< 0.0543	< 0.0881
2-Chloronaphthalene	< 0.0475	< 0.0543	< 0.0881
2-Methylanthracene	< 0.0475	< 0.0543	< 0.0881
2-Methylnaphthalene	< 0.0506	< 0.0578	< 0.0940
3-Methylcholanthrene	< 0.0475	< 0.0543	< 0.0881
7,12-Dimethylbenzo(a)anthracene	< 0.190	< 0.217	< 0.353
9,10-Dimethylanthracene	< 0.0475	< 0.0543	< 0.0881
9-Methylphenanthrene	< 0.0475	< 0.0543	< 0.0881
Acenaphthene	< 0.0475	< 0.0543	< 0.0881
Acenaphthylene	< 0.0475	< 0.0543	< 0.0881
Anthracene	< 0.0475	< 0.0543	< 0.0881
Benzo(a)anthracene	< 0.0475	< 0.0543	< 0.0881
Benzo(a)fluorene	< 0.0475	< 0.0543	< 0.0881
Benzo(a)pyrene	< 0.0475	< 0.0543	< 0.0881
Benzo(b)Anthracene	< 0.0475	< 0.0543	< 0.0881
Benzo(b)fluoranthene	< 0.0475	< 0.0543	< 0.0881
Benzo(b)fluorene	< 0.0475	< 0.0543	< 0.0881
Benzo(e)pyrene	< 0.0475	< 0.0543	< 0.0881
Benzo(g,h,i)perylene	< 0.0475	< 0.0543	< 0.0881
Benzo(k)fluoranthene	< 0.0475	< 0.0543	< 0.0881
Biphenyl	< 0.0698	< 0.0797	< 0.129
Chrysene	< 0.0475	< 0.0543	< 0.0881
Coronene	< 0.0475	< 0.0543	< 0.0881
Dibenzo(a,h)anthracene	< 0.0475	< 0.0543	< 0.0881
Dibenzo(a,c)anthracene	< 0.0475	< 0.0543	< 0.0881
Dibenzo(a,e)pyrene	< 0.0475	< 0.0543	< 0.0881
Fluoranthene	< 0.048	< 0.0543	< 0.0881
Fluorene	< 0.0475	< 0.0543	< 0.0881
Indeno(1,2,3-cd)pyrene	< 0.0475	< 0.0543	< 0.0881
m-Terphenyl	< 0.0475	< 0.0543	< 0.0881
Naphthalene	0.894	1.02	1.66
o-Terphenyl	< 0.0475	< 0.0543	< 0.0881
Perylene	< 0.0475	< 0.0543	< 0.0881
Phenanthrene	< 0.123	< 0.141	< 0.228
Picene	< 0.0475	< 0.0543	< 0.0881
p-Terphenyl	< 0.0475	< 0.0543	< 0.0881
Pyrene	< 0.0475	< 0.0543	< 0.0881
Quinoline	< 0.0475	< 0.0543	< 0.0881
Tetralin	< 0.0475	< 0.0543	< 0.0881
Triphenylene	< 0.0475	< 0.0543	< 0.0881

Notes:

-Sampling followed Environment Canada Method RM/2

-All referenced concentration values are expressed at 101.3kPa, 25oC

-Average of three tests

-When laboratory analysis was below the detection limit, the Reportable Detection Limit (RDL) was used to calculate the concentration and emission rate.

Detailed sampling results including individual test results can be found in Appendix C

Table 6: Dioxins and Furans - Average Results

Parameter	Average Concentration	Average Concentration @25°C and 11% O_2	Reg 419 Toxic Equivalency Factors		
			TEF	TEF Concentration	TEF Emission Rate
	(pg/m^3)	(pg/m^3)		($pg\ TEQ/m^3$)	(pg/s)
2,3,7,8-Tetra CDD *	< 1.65	< 1.88	1	< 1.88	< 3.06
1,2,3,7,8-Penta CDD *	< 1.76	< 2.01	1	< 2.01	< 3.27
1,2,3,4,7,8-Hexa CDD *	< 1.65	< 1.88	0.1	< 0.188	< 0.306
1,2,3,6,7,8-Hexa CDD *	< 1.44	< 1.64	0.1	< 0.164	< 0.267
1,2,3,7,8,9-Hexa CDD *	< 1.49	< 1.70	0.1	< 0.170	< 0.277
1,2,3,4,6,7,8-Hepta CDD *	< 1.37	< 1.56	0.01	< 0.0156	< 0.0254
1,2,3,4,6,7,8,9-Octa CDD *	< 2.73	< 3.12	0.0003	< 0.000936	< 0.00152
2,3,7,8-Tetra CDF **	< 1.83	< 2.09	0.1	< 0.209	< 0.340
1,2,3,7,8-Penta CDF **	< 1.55	< 1.77	0.03	< 0.0531	< 0.0863
2,3,4,7,8-Penta CDF **	< 1.54	< 1.76	0.3	< 0.528	< 0.858
1,2,3,4,7,8-Hexa CDF **	< 1.57	< 1.79	0.1	< 0.179	< 0.291
1,2,3,6,7,8-Hexa CDF **	< 1.42	< 1.62	0.1	< 0.162	< 0.264
2,3,4,6,7,8-Hexa CDF **	< 1.64	< 1.87	0.1	< 0.187	< 0.304
1,2,3,7,8,9-Hexa CDF **	< 1.78	< 2.03	0.1	< 0.203	< 0.330
1,2,3,4,6,7,8-Hepta CDF **	< 1.35	< 1.54	0.01	< 0.0154	< 0.0251
1,2,3,4,7,8,9-Hepta CDF **	< 1.71	< 1.95	0.01	< 0.0195	< 0.0317
1,2,3,4,6,7,8,9-Octa CDF **	< 2.27	< 2.59	0.0003	< 0.000778	< 0.00126
	(ng/m^3)	(ng/m^3)		($pg\ TEQ/m^3$)	(pg/s)
33'44'-TetraCB-(77)	8.12	9.28	0.0001	0.928	1.51
344'5-TetraCB-(81)	< 0.353	< 0.403	0.0003	< 0.121	< 0.197
233'44'-PentaCB-(105)	16.5	18.8	0.00003	0.565	0.919
2344'5-PentaCB-(114)	1.03	1.18	0.00003	0.0353	0.0574
23'44'5-PentaCB-(118)	47.6	54.4	0.00003	1.63	2.65
23'44'5'-PentaCB-(123)	0.827	0.945	0.00003	0.0283	0.0461
33'44'5-PentaCB-(126)	0.391	0.447	0.1	44.7	72.6
HexaCB-(156)+(157)	3.20	3.66	0.00003	0.110	0.178
23'44'55'-HexaCB-(167)	1.32	1.51	0.00003	0.0452	0.0735
33'44'55'-HexaCB-(169)	< 0.00837	< 0.00956	0.03	< 0.287	< 0.466
233'44'55'-HeptaCB-(189)	< 0.0416	< 0.0475	0.00003	< 0.00143	< 0.00232
			Total Toxic Equivalency	**< 54.4**	**< 88.4**

Notes:

-Sampling followed Environment Canada Method 1/RM/2

-All referenced concentration values are expressed at 101.3kPa, 25°C, and 11% Oxygen

-Average of three tests

-When laboratory analysis was below the detection limit, this detection limit was used to calculate the concentration and emission rate.

*CCD = Chloro Dibenzo-p-Dioxin,

**CDF = chlorodibenzo-p-furan

***CB = chlorobenzene

Detailed sampling results including individual test results can be found in Appendix C

Table 7: Hydrogen Chloride- Averaged Results

Parameter	Concentration	Concentration @ 11% O_2	Emission Rate
	(mg/m^3)	(mg/m^3)	(mg/s)
Ammonia (NH_3)	0.506	0.578	0.934
Hydrochloric Acid	4.86	5.55	8.97
Hydrofluoric Acid	< 0.779	< 0.890	< 1.44

Notes:

-Sampling followed U.S. EPA Method 26

-All referenced concentration values are expressed at 101.3kPa, 25^{o}C

-Average of three tests

-When laboratory analysis was below the detection limit, this detection limit was used to calculate the concentration and emission rate.

Detailed sampling results including individual test results can be found in Appendix D

Table 8: Volatile Organic Compounds - Averaged Results

Parameter	Concentration	Concentration @ 11% O_2	Emmision Rate
	($\mu g/m^3$)	($\mu g/m^3$)	(mg/s)
Dichlorodifluoromethane (FREON 12)	< 2.56	< 2.92	< 0.00472
Vinyl Chloride	< 2.56	< 2.92	< 0.00472
Bromomethane	6.94	7.93	0.0128
Trichlorofluoromethane (FREON 11)	< 2.56	< 2.92	< 0.00472
Acetone (2-Propanone)	< 3.80	< 4.34	< 0.00701
Methylene Chloride(Dichloromethane)	< 2.56	< 2.92	< 0.00472
1,1-Dichloroethane	< 2.56	< 2.92	< 0.00472
cis-1,2-Dichloroethylene	< 2.56	< 2.92	< 0.00472
Chloroform	< 2.57	< 2.94	< 0.00475
1,2-Dichloroethane	< 2.56	< 2.92	< 0.00472
Methyl Ethyl Ketone (2-Butanone)	< 2.56	< 2.92	< 0.00472
1,1,1-Trichloroethane	< 2.56	< 2.92	< 0.00472
Carbon Tetrachloride	< 2.56	< 2.92	< 0.00472
Benzene	< 3.57	< 4.08	< 0.00659
1,1,2-Trichloroethane	< 2.56	< 2.92	< 0.00472
1,2-Dichloropropane	< 2.56	< 2.92	< 0.00472
Trichloroethylene	< 2.56	< 2.92	< 0.00472
Bromodichloromethane	< 2.56	< 2.92	< 0.00472
Dibromochloromethane	< 2.56	< 2.92	< 0.00472
Toluene	< 58.72	< 67.1	< 0.108
Ethylene Dibromide	< 2.56	< 2.92	< 0.00472
Tetrachloroethylene	< 2.56	< 2.92	< 0.00472
Ethylbenzene	< 2.56	< 2.92	< 0.00472
m / p-Xylene	< 5.12	< 5.84	< 0.00944
Styrene	< 2.56	< 2.92	< 0.00472
o-Xylene	< 2.56	< 2.92	< 0.00472
Bromoform	< 2.56	< 2.92	< 0.00472

Notes:

-Sampling followed US EPA Method 0030

-All referenced concentration values are expressed at 101.3kPa, 25oC

-Average of three tests

-When laboratory analysis was below the detection limit, the Reportable Detection Limit (RDL) was used to calculate the concentration and emission rate.

Detailed sampling results including individual test results can be found in Appendix E

Table 9: Acrolein- Averaged Results

Parameter	Concentration	Concentration @ 11% O_2	Emission Rate
	(mg/m^3)	(mg/m^3)	(mg/s)
Formaldehyde (Methanal)	0.954	1.09	1.76
Acetaldehyde (Ethanal)	< 0.0586	< 0.0669	< 0.108
Acrolein	< 0.0503	< 0.0574	< 0.0928

Notes:

-Sampling followed CARB 430

-All referenced concentration values are expressed at 101.3kPa, 25°C

-Average of three tests

-When laboratory analysis was below the detection limit, this detection limit was used to calculate the concentration and emission rate.

Detailed sampling results including individual test results can be found in Appendix F

Table 10: Gaseous Pollutants - Average Results

Parameter	Concentration			Emission Rate
	Actual O_2	Actual O_2	11% O_2	
	(ppm)	**(mg/m^3)**	**(mg/m^3)**	**(g/s)**
Nitrogen Oxides, expressed as NO_2 (NO_X)	58.0	109	123	0.228
Sulphur Dioxide (SO_2)	< 1.00	< 2.62	< 2.96	< 0.00547
Carbon Monoxide	4.53	5.19	5.87	0.0108
	(%)			
Oxygen (O_2)	12.2	-	-	-
Carbon Dioxide ($CO_{2)}$	5.65			
Secondary Chamber Outlet				
	(ppm)	**(mg/m^3)**	**(mg/m^3)**	**(g/s)**
Total Hydrocarbons (expressed as Methane)	7.91	-	-	-
	(%)			
Oxygen (O_2)	8.69	-	-	-

Notes:

-Sampling followed U.S. EPA Method 3 (O_2 and CO_2), Method 10 (CO), Method 6C (SO_2), Method 7E (NO_X), and Method 25A (THC)

-All referenced concentration values are expressed at 101.3kPa, 25^{o}C

-Average of all three tests

-Emission rate for Incinerator calculated based on average volumetric flow rate of all Isokinetic tests

Detailed sampling results including individual test results can be found in Appendix G

Table 11: ECA Limit Comparisons

Parameter	Stack Testing Results[1]		ECA Limit [2]
Total Hydrocarbons	7.91	ppm	50 ppm
Carbon Monoxide [3]	5.87	mg/m^3	9 mg/m^3
Oxygen (Secondary Combustion chamber)	8.69	%	> 6%
Hydrogen Chloride	5.55	mg/m^3	7 mg/m^3
Particulate Matter	4.35	mg/m^3	17 mg/m^3
Dioxins and Furans (TEQ)	< 54.4	pg/m^3	80 pg/m^3
Oxides of Nitrogen (NO_X) [3]	123	mg/m^3	187 mg/m^3
Sulphur Dioxide [3]	< 2.96	mg/m^3	17 mg/m^3
Mercury	9.12	$\mu g/m^3$	15 $\mu g/m^3$
Cadmium	< 0.329	$\mu g/m^3$	7 $\mu g/m^3$
Lead	3.03	$\mu g/m^3$	26 $\mu g/m^3$

Notes:

[1] - Concentration referenced to 25°C, 101.3kPa, and 11% oxygen

[2] - Refer to Section 44 of the ECA.

[3] - Permit has a 24-hr or 12-hr rolling average limit, the values presented only represents that of the test times

Table 12: Modelling Results - Test Contaminants - ECA Contaminants

Scenario	Contaminant	CAS Number	ESDM Estimated Emission Rates	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration (µg/m³) [6]	Averaging Period (Hrs)	ACB (µg/m³) [1]	Limiting Effect	Regulation Schedule #	Benchmark Category [2]	Percentage of MECP Standard (%)
Normal	1,2,4-Trichlorobenzene	120-82-1	-	8.81E-08	AERMOD	2.59E-05	24	400	Health	Guideline	B1	< 1%
	Aluminum Oxide	1344-28-1	-	2.83E-04	AERMOD	8.32E-02	24	120	Health	Guideline	B1	< 1%
	Arsenic (As)	7440-38-2	-	8.33E-07	AERMOD	2.45E-04	24	0.3	Health	Guideline	B1	< 1%
	Barium (Ba)	7440-39-3	-	8.91E-06	AERMOD	2.62E-03	24	10	Health	Guideline	B1	< 1%
[3][4]	PCDD/F (ITEQ)	n/a	3.50E-12	8.84E-11	AERMOD	2.60E-08	24	1.00E-07	Health	Standard	B1	26%
[3][4]	PCDD/F (ITEQ)	n/a	3.50E-12	8.84E-11	AERMOD	2.60E-08	24	1.00E-06	Health	URT	URT	3%
	Pentachlorophenol	87-86-5	-	8.81E-08	AERMOD	2.59E-05	24	20	Health	Guideline	B1	< 1%
	Phosphorus (P)	10026-13-8	-	9.37E-05	AERMOD	2.75E-02	24	10	Health	Guideline	B1	< 1%
	Total PCB	1336-36-3	-	8.86E-07	AERMOD	2.60E-04	24	0.15	Health	Guideline	B1	< 1%
	Selenium (Se)	7782-49-2	-	2.08E-06	AERMOD	6.12E-04	24	10	Health	Guideline	B1	< 1%
	Cadmium	7440-43-9	4.00E-07	5.50E-07	AERMOD	1.62E-04	24	0.025	Health	Standard	B1	< 1%
	Cadmium	7440-43-9	4.00E-07	5.50E-07	AERMOD	1.62E-04	24	0.25	Health	URT	URT	< 1%
	Carbon Monoxide	630-08-0	8.10E-03	1.08E-02	AERMOD	1.00E+01	0.5	6000	Health	Standard	B1	< 1%
	Hydrochloric Acid	7647-01-0	5.50E-04	8.97E-03	AERMOD	2.64E+00	24	20	Health	Standard	B1	13%
	Hydrochloric Acid	7647-01-0	5.50E-04	8.97E-03	AERMOD	2.64E+00	24	200	Health	URT	URT	1%
	Lead	7439-92-1	1.70E-06	4.88E-06	AERMOD	1.43E-03	24	0.5	Health	Standard	B1	< 1%
	Lead	7439-92-1	1.70E-06	4.88E-06	AERMOD	2.62E-04	720	0.2	Health	Standard	B1	< 1%
	Lead	7439-92-1	1.70E-06	4.88E-06	AERMOD	1.43E-03	24	2	Health	URT	URT	< 1%
	Mercury	7439-97-6	2.50E-06	1.47E-05	AERMOD	4.32E-03	24	2	Health	Standard	B1	< 1%
	Oxides of Nitrogen	10102-44-0	4.30E-01	2.28E-01	AERMOD	1.76E+02	1	400	Health	Standard	B1	44%
	Oxides of Nitrogen	10102-44-0	4.30E-01	2.28E-01	AERMOD	6.70E+01	24	200	Health	Standard	B1	33%
	Particulate Matter	n/a	8.10E-04	6.97E-03	AERMOD	2.05E+00	24	120	Visibility	Standard	B1	2%
	Sulphur dioxide	7446-09-5	5.60E-04	5.47E-03	AERMOD	4.21E+00	1	690	Health	Standard	B1	< 1%
	Sulphur dioxide	7446-09-5	5.60E-04	5.47E-03	AERMOD	1.61E+00	24	275	Health	Standard	B1	< 1%
	Sulphur dioxide	7446-09-5	5.64E-04	5.47E-03	AERMOD	4.21E+00	1	690	Health	URT	URT	< 1%
[5]	Sulphur dioxide	7446-09-5	5.64E-04	5.47E-03	AERMOD	4.21E+00	1	100	Health	Standard	B1	4%
[5]	Sulphur dioxide	7446-09-5	5.64E-04	5.47E-03	AERMOD	2.24E-01	8760	10	Health	Standard	B1	2%

*Modelling was updated in September, 2022. Meterological data was run using MECP Suburban Met. Data Set (v.19191) and modelling was completed using AERMOD v.19191

Notes:

[1] The term "MECP POI Limit" identified in Table D-4 of Guideline A-10 refers to the following information (there may be more than one relevant MECP POI Limit for each contaminant):
- Air quality Standards, Guidelines or SL-JSLs set out the MECP publication, "Air Contaminants Benchmark (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", 01 April 2018;
- The Daily Assessment Values (DAV) from the MECP ACB List;
- The Annual Assessment Values (AAV) from the MECP ACB List; or,
- Upper Risk Threshold (URT) from the MECP ACB List; or,

[2] Benchmark Categories are set out in the MECP ACB List; Benchmark 1 (B1) refers to Standards or Guidelines, Benchmark 2 (B2) refers to Screening Levels.
[3] The PCDD/F (ITEQ) based on the total toxicity equivalent for all individual compounds based on stack sampling program conducted by RWDI
[4] Concentrations in micrograms per cubic metre
[5] New ACB Standard for Sulphur Dioxide, effective date July 1, 2023.
[6] AERMOD maximum 1-hour predicted concentrations multiplied by factor of 1.2 to derive equivalent 1/2 hour concentrations.

1 g/sec modelling rates results in a maximum half-hour POI of 925 µg/m^3
1 g/sec modelling rates results in a maximum 1-hour POI of (from Model) 770 µg/m^3
1 g/sec modelling rates results in a maximum 24-hour POI of (from Model) 294 µg/m^3
1 g/sec modelling rates results in a maximum Monthly POI of (from Model) 54 µg/m^3
1 g/sec modelling rates results in a maximum Annual Average POI of (from Model) 29 µg/m^3

Any Annual POI Concentrations in Table 12 were obtained by multiplying the contaminant emission rate by the Annual Average unit dispersion factor with that result multiplied by 140% as specified in MECP Guideline A-10, Secion 11.1.5.

Table 13- Incinerator - Certification Results

Certification Date - June 15, 2022

Test	Date	RWDI Time		NO_x			O_2			CO		
		Start Time	End Time	RM (dppm)	CEM (ppm)	di (ppm)	RM (dry%)	CEM (dry%)	di (%)	RM (dppm)	CEM (ppm)	di (ppm)
1	15-Jun-22	9:15	9:44	33.17	41.1	7.9	12.0	12.1	0.1	1.4	0.6	-0.8
2	15-Jun-22	9:49	10:18	41.66	41.3	-0.4	11.5	11.6	0.1	1.8	0.5	-1.2
3	15-Jun-22	10:23	10:52	53.34	50.8	-2.5	11.8	11.7	-0.1	2.0	0.5	-1.5
4	15-Jun-22	11:04	11:33	64.09	76.8	12.7	12.2	12.1	0.0	~~8.0~~	~~28.0~~	~~20.0~~
5	15-Jun-22	11:37	12:06	~~60.15~~	~~81.0~~	~~20.8~~	12.5	12.2	-0.3	~~1.6~~	~~37.2~~	~~35.6~~
6	15-Jun-22	12:10	12:39	~~50.79~~	~~69.8~~	~~19.0~~	~~11.69~~	~~12.4~~	~~0.7~~	2.0	0.5	-1.5
7	15-Jun-22	12:44	13:13	61.59	66.0	4.4	12.0	12.0	0.1	1.9	0.5	-1.4
8	15-Jun-22	13:21	13:50	58.53	70.7	12.2	11.7	11.7	0.0	2.2	0.7	-1.5
9	15-Jun-22	14:!2	14:41	57.61	65.0	7.4	11.5	11.5	0.0	2.2	0.5	-1.7
10	15-Jun-22	14:50	15:19	56.34	71.0	14.6	11.8	11.5	-0.3	2.2	0.6	-1.5
11	15-Jun-22	15:24	15:53	63.71	66.3	2.6	11.3	11.3	0.0	2.1	2.1	0.0
12	15-Jun-22	15:56	16:25	~~56.80~~	~~72.2~~	~~15.4~~	11.6	11.7	0.1	2.5	0.9	-1.6
		AVERAGE		54.45	60.99	6.54	11.79	11.76	-0.03	2.01	0.74	-1.27
		STDS		10.5	13.2	6.0	0.3	0.3	0.1	0.3	0.5	0.5
		n		9			11			10		
		Full Scale		1000			25			1000		
		$t_{0.025}$		2.306			2.228			2.262		
		I d I		6.5			0.0			1.3		
		I cc I		4.61			0.10			0.38		
Bias present? (Idl > Iccl)				**bias present**			**no bias**			**bias present**		
Bias (5% limit)				**0.2%**			**-**			**0.09%**		
ACCURACY (10% limit)				**1.1%**			**1.0%**			**0.2%**		
Bias Adjustment Factor (BAF) during RATA				1.000			1.000			1.000		
New Bias Adjustment Factor (BAF)				0.893			1.000			2.732		

Notes:

RM = Reference Method (RWDI measurements)
CEM = Continuous Emission Monitors (Lafarge measurements)
di = Difference between CEM and RM for each point
n = number of tests
$t_{0.025}$ = value for a one-tailed t-test
I d I = Absolute mean difference between the CEM and RM results
I cc I = Confidence coefficient
~~99~~ indicates test was ommited from calculating criteria

APPENDIX A

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: kirk.easto@rwdi.com
TSS File No.: CR:SA:110038:22

2022/02/18

Mr. Kirk Easto
RWDI Air Inc.
600 Southgate Dr.
Guelph, Ontario
N1G 4P6

Re.: Pre-test plan for source testing to be conducted at Stericycle ULC. Amended Environmental Compliance Approval No. A680324.

Dear Mr. Easto:

We reviewed your pre-test plan, RWDI Project No. 2202865, dated 2022/02/08, prepared and submitted on behalf of Stericycle ULC, and referring to source testing to be conducted at Stericycle's biomedical waste incinerator, located at 95 Deerhurst Dr., Brampton, Ontario.

The testing is an annual requirement under Condition 48 of the amended Environmental Compliance Approval (ECA) No. A680324, issued on 2019/06/28.

***Target contaminants*:**

- Total suspended particulate matter (TSP),
- Selected metals (29 metals, as listed in the ECA's Schedule 7),
- SVOCs - Dioxins and furans (29 dioxin-like compounds, as listed in O.Reg.419/05, Schedule 8),
- SVOCs – Chlorinated benzenes, chlorophenols and PCBs functional groups, and targeted polycyclic organic matter compounds (benzo(a)pyrene, naphthalene and biphenyl), as listed in the ECA's Schedule 7,
- VOCs (30 compounds, as listed in the ECA's Schedule 7),
- Aldehydes (acetaldehyde, acrolein, formaldehyde),
- Ammonia (NH_4)
- Hydrogen chloride (HCl),
- Hydrogen Fluoride (HF),
- Nitrogen oxides (NOx),
- Sulphur dioxide (SO_2),

- Total hydrocarbons (THC), and
- Combustion gases (CO, CO_2, and O_2).

Notes: *It is indicated in the pre-test plan that oxygen will be measured at two locations: undiluted from the gas stream at the outlet of the secondary combustion chamber (for validation of excess combustion oxygen levels), and at the stack (to normalize the concentrations of the target contaminants to 11% oxygen).*

THC will also be monitored undiluted, at the outlet of the secondary combustion chamber.

***Reference methodologies*:**

- For TSP: Ontario Source Testing Code's Method ON-5,
- For Metals: US EPA 40CFR60 Method 29,
- For SVOCs: Environment Canada's Report EPS 1/RM/2,
- For VOCs: US EPA SW846 Method 0030,
- For Aldehydes: Ashland Modified CARB Method 430,
- For halides (HCl, HF), and ammonia: US EPA 40CFR60 Method 26,
- For THC: US EPA 40CFR60 Method 25A,
- For SO_2: US EPA 40CFR60 Method 6C,
- For NOx: US EPA 40CFR60 Method 7E,
- For combustion gases: US EPA 40CFR60 Method 3A for oxygen and carbon dioxide, and US EPA 40CFR60 Method 10 for CO; and
- Stack Gas Parameters OSTC Method ON-1 to ON-4.

Notes: *A relative accuracy certification will be carried out on Stericycle's continuous emissions monitoring system, following the requirements of Environment Canada's Report EPS 1/PG/7.*

***Sampling Strategies*:**

Triplicate samples will be collected for each of the contaminants (or group of contaminants) of interest.

Two sampling ports for isokinetic sampling will be used, 90° apart, at the same vertical height and located about 1 m above the roof. These ports are located at an "ideal" location. Two additional sampling ports for non-isokinetic combustion gas and halides sampling are located about 0.4 m above the isokinetic sampling ports.

It is expected all sampling be conducted in accordance with the methodologies and procedures stated in **Table 3.1 and Section 5 of the PTP.**

Otherwise, no modifications to the sampling methodologies have been identified.

***Brief Process Description*:**

Stericycle ULC operates a two-stage starved air incinerator to treat biomedical waste, having a design operating capacity of 670 kg/h, located at 95 Deerhurst Drive, Brampton, Ontario.

The treatment of the biomedical waste starts when the waste (in containers) is fed into the primary chamber of the incinerator using a hydraulic ram feed system. Auxiliary natural gas burners are used to ignite the waste which burns under sub-stoichiometric conditions. Combustion gases pass into a secondary chamber where the combustion process is completed. The combustion gases are retained for a minimum of 2 seconds above 1000°C in the secondary chamber.

Gases exiting the secondary chamber are the treated by various control devices before being exhausted to atmosphere.

Although waste material is fed in batches to the incinerator (on average every 9 minutes), the incinerator operates continuously and is only shutdown periodically for maintenance work.

The facility operates under NAICS code 562211 “Hazardous Waste Treatment & Disposal”.

***Target Process Condition during the Source Testing Program*:**

Stericycle will be conducting the source testing targeting operating the facility at the maximum feet rate achievable during the test program (anticipated to be a biomedical waste feed rate of approximately 500 kg/h).

Note: *It is stated in the ECA’s Schedule 1, Part A.1 that the Incinerator, having a design operating capacity of 670 kilograms per hour.*

The PTP states, operating at the 500 kg/hr feed rate allows for a constant feed rate over 24-hours. Operating at the ECA listed maximum would result in shutdowns and start ups each day.

Process Parameters to be monitored and reported during the source testing program:

Stericycle’s personnel will be responsible for the monitoring, collection, compilation and reporting of pertinent process data during the test program, to establish waste processing rate levels.

The incinerator’s operating parameters are automatically recorded for each minute of operation, by Stericycle. The process parameters to be monitored and recorded include:

- Waste incinerator feed rate (kg/h)
- Waste description
- Primary chamber temperature (°C)
- Secondary chamber temperature (°C)
- Demister exit temperature (°C)
- Carbon bed inlet temperature (°C)

- Cooling tower return water temperature (°C)
- ID fan temperature (°C)
- Atomizers amperage (A)
- Atomizer, quench and condenser pH
- Oxygen concentration (%)
- Carbon monoxide concentration
- Nitrogen oxides concentration

Our review indicated that the pre-test plan is approved, based on the proposed reference methodologies, sampling strategies, and process monitoring strategies during the source testing program.

We noted your intention at testing the incinerator exhaust during the week of 2022/05/09, with the actual testing conducted over three consecutive days from 2022/02/10 thru 2022/02/12. If there are changes to the sampling schedule change, please notify (via email) both the MECP's Halton-Peel District Office and the Technology Standards Section source testing group at sourcetesting@ontario.ca.

Just a reminder that the source testing report is required to be submitted **only** in electronic format to the Technology Standards Section source testing group at sourcetesting@ontario.ca; and in electronic and hardcopy formats to the MECP's Halton-Peel District Office.

If you have any questions with regard to this assessment, I can be reached by phone at 416-705-4660, or by email at sourcetesting@ontario.ca.

Regards,

Bill Fullerton
Source Assessment Specialist (A)
Technology Standards Section

cc: D. Kokol - Stericycle Inc. (via email: dkokol@stericycle.com)
C. Broux – MECP Halton-Peel District Office (via email: christelle.broux@ontario.ca)
D. Lee – MECP EPB (via email: david.w.lee@ontario.ca)
J. McKerrall – MECP TASDB TSS (via email: jeffrey.mckerrall@ontario.ca)
C. Ruddy – MECP TASDB TSS (via email: caitlyn.ruddy@ontario.ca)

File AQ-02 (Stericycle ULC - Brampton)

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A680324
Issue Date: June 28, 2019

Stericycle, ULC
95 Deerhurst Dr
Brampton, Ontario
L6T 5R7

Site Location: 95 Deerhurst Drive
Brampton City, Regional Municipality of Peel

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:

the use and operation of a Waste Disposal Site which includes the use of the Site for the transfer, processing and incineration of the following categories of waste:

Waste Class Nos. 148 (Miscellaneous waste inorganic chemicals), 261 (Pharmaceutical), except bulk liquids, 262 (Detergents and Soaps), 264 (Photoprocessing) and 312 (Pathological), as defined in the New Ontario Waste Classes dated January, 1986 or the most recent revision; Biomedical Waste and solid non-hazardous wastes, including but not limited to controlled substances as defined in the *Controlled Drug and Substances Act* , currency, stamps, confiscated videos and other media.

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

"**Act**" means the Environmental Protection Act, R.S.O. 1990, C. E-19 as amended;

"**Activated Carbon Maintenance and Replacement Plan**" means the document amended as item (52) of Schedule "A";

"**AERMOD**" is as defined in Ontario Regulation 419/05 subsection 6(1).

"**Air Pollution Control System**" means the quench pre-scrubber tower, the cooling tower, the caustic storage and delivery system, the condensing column, the two rotary atomizer modules, the acid absorber and demister system, the induced draft fan, the steam re-heat system, the carbon filter, the HEPA filtration system, the NOx selective non-catalytic reduction (SNCR) system, the Main Stack and all auxiliary equipment necessary for proper operation of the main components listed in the attached Schedule 1 and approved by this ECA;

"**Autoclave**" means either of the two autoclave sterilization systems, referred to in this ECA as the North and South Autoclaves, complete with the condenser, as described in the Company's application, Schedule 1 of this ECA and in the supporting documentation referred to herein, to the extent approved by this ECA;

"**Baseline Parameters**" means the operation and emissions parameters listed in Column 1 of Schedule 2 of this ECA;

"**Biomedical Waste**" is as defined in the Guideline and generated by any of the following:

(a) human health care and residential facilities;

(b) animal health care facilities;

(c) medical research and medical teaching establishments;

(d) veterinary research and veterinary teaching establishments;

(e) health care teaching establishments for human health care;

(f) health care teaching establishments for animal health care;

(g) clinical testing or research laboratories;

(h) the professional office of a health professional within the meaning of the Regulated Health Professions Act, 1991;

(i) the professional office of a member of the College of Veterinarians of Ontario;

(j) mortuaries and funeral establishments, including any similar establishments for pets and other animals;

(k) facilities involved in the production of vaccines;

(l) facilities involved in mobile health care for humans; and

(m) facilities involved in mobile health care for animals,

"**Boilers**" means the two boilers as described in the Company's application, Schedule 1 of this ECA and in the supporting documentation referred to in Schedule "A";

"**Bottom Ash**" means the ash residue resulting from combustion of waste and being discharged from the primary chamber of the Incinerator into an ash pit using a hydraulic ram;

"**Carbon Bed**" means the carbon filter bed associated with the Air Pollution Control System and as

specified in the Activated Carbon Maintenance and Replacement Plan;

"**Company**" means any person(s) that is responsible for the operation of the Site and its Equipment, and includes Stericycle, Inc., its successors and assigns;

"**Continuous Monitoring and Control System**" means the differential pressure gauges, the pH monitoring devices, flow rate measuring devices, waste feed measuring device the continuous temperature monitors, continuous carbon monoxide monitor, continuous oxygen monitor together, NO_x monitoring system with all associated sampling lines, analysers, recording devices, computer hardware and software and other appurtenances necessary for proper operation of the Continuous Monitoring and Control System, as described in Schedule 1 of this ECA;

"**Controlled Shutdown**" means the complete cessation of operation of the incinerator after lockout, if the exceeded operational and/or emission performance parameters cannot be normalized below required ECA limits within a 24-hour period.

"**Director**" means a Director of the Environmental Assessment and Permissions Branch of the Ministry of the Environment, Conservation and Parks, or successor;

"**District Manager**" means the District Manager of the Halton-Peel District Office of the Ministry of the Environment, Conservation and Parks, or successor;

"**ECA**" means the Environmental Compliance Approval number A680324, including its schedules, issued under the Act, as amended from time to time;

"**Emergency Bypass Stack**" means the exhaust stack that discharges emissions generated during combustion of waste in the primary chamber of the Incinerator after those emissions have been controlled by the secondary chamber of the Incinerator;

"**Emergency Power Supply**" means a diesel fuel fired generator set, described in Schedule 1 of this ECA, rated at 500 kilowatts, capable of supplying sufficient electrical power to maintain the proper functioning of the Incinerator, the Air Pollution Control System and the Continuous Monitoring and Control System to ensure compliance with the Performance Conditions during external power supply failures;

"**Emergency Shutdown**" means an immediate cut-off of all waste into the primary chamber of the Incinerator; followed by natural gas standby until the emergency condition has been resolved, or the controlled termination of the combustion process when all the residual waste has been combusted;

"**Equipment**" means the North Autoclave, the South Autoclave, the Boiler, the Incinerator, the Air Pollution Control System, the Reusable Container System, the Continuous Monitoring and Control System together with all associated pieces of equipment necessary for the proper functioning of the major components listed in the above, as described in Schedule 1 of this ECA;

"**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 ECA in accordance with section 26 of O. Reg. 419/05 and the Procedure Document;

"**Guideline**" means the Ministry document, "Guideline C-4: The Management of Biomedical Waste in Ontario", dated November 2009, as amended from time to time;

"**Incineration Waste**" means any other waste, approved by this ECA, that is not a Treatable Waste;

"**Incinerator**" means JOY ECOLAIRE 2500 TESI W/SR62H, or equivalent, controlled air 2-stage incinerator, described in Schedule 1 of this ECA;

"**Lockout**" means a temporary termination of the waste feed to the incinerator; either triggered by a waste feed lockout set point alarm, as prescribed in Schedule 2 of this ECA; and/or while the Incinerator is under shutdown mode; and/or when the Incinerator or the Continuous Monitoring and Control System is under maintenance or inoperative;

"**Main Stack**" means the exhaust stack that discharges emissions generated during combustion of waste in the primary chamber of the Incinerator after those emissions have been controlled by the secondary chamber of the Incinerator and the Air Pollution Control System, as described in Schedule 1 of this ECA;

"**Manager**" means the Manager, Technology Standards Section, Technical Assessment and Standards Development Branch of the Ministry of the Environment, Conservation and Parks, or successor, including any other person who represents and carries out the duties of the Manager, or successor, as those duties relate to the conditions of this ECA;

"**Ministry**" means the Ontario Ministry of the Environment, Conservation and Parks, or successor, unless specific reference is made to another ministry;

"**North Autoclave**" means the autoclave sterilization system, complete with one condenser, as described in Schedule 1 and Item 37 of Schedule "A" of this ECA;

"**O. Reg. 419/05**" means the Ontario Regulation 419/05, Air Pollution – Local Air Quality, as amended;

"**OWRA**" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;

"**PA**" means the Pesticides Act, R.S.O. 1990, c. P-11, as amended from time to time;

"**Pathological Waste**" is as defined in Reg. 347;

"**Performance Conditions**" means the conditions listed in Section D of this ECA, entitled "Design and Performance Requirements for the Equipment and the Site";

"**Point of Impingement**" means any point outside the Site in the natural environment and as defined in section 2 of O. Reg. 419/05;

"**Pre-Test Plan**" means a document, part of the Source Testing, prepared following the requirements of

Part A, Section 5 of the Source Testing Code;

"**Process**" means:

(a) in relation to Treatable Waste, the receipt of Treatable Waste at the Site, its treatment in an Autoclave to achieve sterilization and the segregation of the treated waste into the appropriate storage area; and

(b) in relation to Incineration Waste, the receipt, segregation of the Incineration Waste into the appropriate storage or staging area, Destruction of the Incineration Waste in the primary chamber of the Incinerator, and segregation, handling and disposal of the Residual Waste,

Note: "**Processed**" and "**Processing**" have a corresponding meaning;

"**Provincial Officer**" means any person designated in writing by the Minister as a provincial officer pursuant to section 5 of the OWRA or section 5 of the EPA or section 17 of PA;

"**Publication NPC-103**" means the technical publication NPC-103, as amended, included in the "Model Municipal Noise Control By-Law, Final Report, August 1978" document;

"**Publication NPC-233**" means Ministry Publication NPC-233, Information to be Submitted for Approval of Stationary Sources of Sound, October 1995, as amended;

"**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.

"**Reg. 347**" means Regulation 347, R.R.O. 1990, as amended;

"**Rejected Waste**" means any waste that cannot be processed at the facility or waste which the Site is not approved to accept;

"**Residence Time**" means the period of time combustion gases are subjected to the minimum temperature and oxygen content as specified by conditions 43(1) and 44(1)(c) of this ECA after the flame front where the combustion is fully developed and after the point of final addition of air in the secondary chamber of the Incinerator;

"**Report EPS 1/PG/7**" means Environment Canada Report EPS 1/PG/7, "Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emissions from Thermal Generation", December, 2005;

"**Residual Waste**" means the spent filter material from the carbon filter and the HEPA filter and the Bottom Ash generated as a result of Processing waste in the Incinerator;

"**Reusable Container System**" means all equipment and materials associated with the Biosystems

reusable sharps container system.

"**Site**" means the waste disposal site permitted under this ECA, located at 95 Deerhurst Drive, City of Brampton, in the Regional Municipality of Peel;

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

"**Source Testing**" means sampling and testing to measure emissions resulting from operating the Incinerator under conditions which yield the worst case emissions within the approved operating range of the Incinerator which satisfies paragraph 1 of subsection 11(1) of O. Reg. 419/05;

"**South Autoclave**" means the autoclave sterilization system, complete with one condenser, as described in in Item 37 of Schedule "A" of this ECA, that was originally installed at 95 Deerhurst Drive in Brampton;

"**Test Contaminants**" means those contaminants set out in Schedule 7 of this ECA;

"**Trained**" means competent and knowledgeable in the operation of the Site through instruction and practice, as required and detailed in condition 54(1) of this ECA.;

"**Treatable Waste**" means that waste which is to be treated using the North or South Autoclave. More specifically, "Treatable Waste" means Biomedical Waste that is limited to non-anatomical Waste Class 312P; and

"**Undiluted Gases**" means the flue gas stream which contains oxygen, carbon monoxide, total hydrocarbons and all contaminants in the same concentrations as they exist in the flue gas stream emerging from an individual piece of equipment.

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

TERMS AND CONDITIONS

A. GENERAL REQUIREMENTS

1. Compliance

(1) The Company shall ensure compliance with all the conditions of this ECA and shall ensure that any person authorized to carry out work on or operate any aspect of the Site is notified of this ECA and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Any person authorized to carry out work on or operate any aspect of the Site shall comply with the conditions of this ECA.

2. In Accordance

(1) Except as otherwise provided by these conditions, the Site shall be designed, developed, used, maintained and operated, and all facilities, equipment and fixtures shall be built and installed, in accordance with the Applications for a Certificate of Approval (Waste Disposal Site) dated October 27, 1998 and June 7, 2000, and the Applications for a Certificate of Approval (Air) dated October 27, 1998 and June 7, 2000 and the supporting documentation, plans and specifications listed in Schedule "A".

(2) Use of the Site for any other type of waste, or other waste management activity, is not permitted under this ECA, and requires obtaining a separate approval amending this ECA.

3. Interpretation

(1) Where there is a conflict between a provision of any document, including the application, referred to in this ECA, and the conditions of this ECA, the conditions in this ECA shall take precedence.

(2) Where there is a conflict between the application and a provision in any documents listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application, and that the Ministry approved the amendment.

(3) Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.

(4) The conditions of this ECA are severable. If any condition of this ECA, or the application of any condition of this ECA to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this ECA shall not be affected thereby.

4. Other Legal Obligations

(1) The issuance of, and compliance with, this ECA does not:

(a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement; or

(b) limit in any way the authority of the Ministry to require certain steps be taken or to require the Company to furnish any further information related to compliance with this ECA.

(2) All wastes at the Site shall be managed and disposed in accordance with the EPA and Reg. 347.

5. Change of Owner

(1) The Company shall notify the Director, in writing, and forward a copy of the notification to the District Manager, within 30 days of the occurrence of any changes in the following information:

(a) the ownership of the Site;

(b) appointment of, or a change in, the operator of the Site;

(c) the name or address of the Company;

(d) the partners, where the Company is or at any time becomes a partnership and a copy of the most recent declaration filed under the Business Names Act, R. S. O. 1990, c. B.17, shall be included in the notification.

(2) No portion of this Site shall be transferred or encumbered prior to or after closing of the Site unless the Director is notified in advance and sufficient financial assurance is deposited with the Ministry to ensure that these conditions will be carried out.

(3) In the event of any change in ownership of the Site, other than change to a successor municipality, the Company shall notify the successor of and provide the successor with a copy of this ECA, and the Company shall provide a copy of the notification to the District Manager and the Director.

6. Inspections

(1) No person shall hinder or obstruct a Provincial Officer from carrying out any and all inspections authorized by the OWRA, the EPA, or the PA, of any place to which this ECA relates, and without limiting the foregoing:

(a) to enter upon the premises where the approved works are located, or the location where the records required by the conditions of this ECA are kept;

(b) to have access to, inspect, and copy any records required to be kept by the conditions of this ECA;

(c) to inspect the Site, related equipment and appurtenances;

(d) to inspect the practices, procedures, or operations required by the conditions of this ECA; and

(e) to sample and monitor for the purposes of assessing compliance with the terms and conditions of this ECA or the EPA, the OWRA or the PA.

7. Information and Record Retention

(1) Any information requested, by the Ministry, concerning the Site and its operation under this ECA, including but not limited to any records required to be kept by this ECA shall be provided to the Ministry, upon request**,** in a timely manner**.**

(2) The Company shall maintain and retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the operation of the Equipment, and monitoring and recording activities, in both hard copy and electronic formats.

(3) The receipt of any information by the Ministry or the failure of the Ministry to prosecute any person or to require any person to take any action, under this ECA or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:

(a) an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any term or condition of this Approval or any statute, regulation or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

(4) Any information relating to this ECA and contained in Ministry files may be made available to the public in accordance with the provisions of the Freedom of Information and Protection of Privacy Act, R.S.O. 1990, C. F-31.

8. Financial Assurance

(1) The Company shall maintain Financial Assurance, as defined in Section 131 of the Act, for the amount of two hundred twenty-five thousand Canadian dollars (225 000 CAD). This Financial Assurance shall be in a form acceptable to the Director and shall provide sufficient funds for compliance with and performance of any action specified in the Certificate, including waste analysis, monitoring and disposal of all quantities of waste at the Site at any one time, transportation of waste, Site clean-up as well as closure and post-closure care of the Site.

(2) Commencing on March 31, 2020 and at intervals of three (3) years thereafter, the Company shall submit to the Director, a re-evaluation of the amount of Financial Assurance to implement the actions required under condition 8(1). The re-evaluation shall include an assessment based on any new information relating to the environmental conditions of the Site and shall include the costs of additional monitoring and/or implementation of contingency plans required by the Director upon review of the closure plan, quarterly and annual reports. The Financial Assurance must be submitted to the Director within twenty (20) days of written acceptance of the re-evaluation by the Director.

(3) The amount of Financial Assurance is subject to review at any time by the Director and may be amended at his/her discretion. If any Financial Assurance is scheduled to expire or notice is received, indicating Financial Assurance will not be renewed, and satisfactory methods have not been made to replace the Financial assurance at least sixty (60) days before the Financial Assurance terminates, the Financial Assurance shall forthwith be replaced by cash.

9. Liability Insurance

(1) The Company shall, at all times while the Site is operating, maintain an environmental impairment liability insurance policy in the amount of at least two million Canadian dollars (2 000 000 CAD) and a general third party liability insurance policy in the amount of at least ten million Canadian dollars (10 000 000 CAD).

10. Complaint Response Procedure

(1) If at any time, the Company receives complaints regarding the operation of the Site, the Company shall respond to these complaints according to the following procedure:

(a) The Company shall record each complaint on a formal complaint form entered in a sequentially numbered log book. The information recorded shall include the nature of the complaint, the name, address and the telephone number of the complainant and the time and date of the complaint;

(b) The Company, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, noting and recording the prevalent weather conditions, wind strength and wind direction at the time of the complaint, and shall proceed to take the necessary actions to eliminate the cause

of the complaint, forward a formal reply to the complainant and within 24 hours of the complaint having been received notify by telephone and in writing the District Manager of the complaint and the actions taken; and

(c) The Company shall prepare a report within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the reoccurrence of similar incidents.

11. Spill Response and Reporting

(1) The Company shall promptly take all necessary steps to contain and clean up any spills which result from the operation of the Site.

(2) All spills, upsets, exceedance of any concentration limit prescribed in condition 44(1), as well as any instance of the use of the Emergency Bypass Stack, shall be immediately reported to the Ministry's Spills Action Centre at (416) 325-3000 or 1-800-268-6060, with the following information to be recorded:

(a) the nature and cause of the spill or upset, and

(b) the action taken for clean-up, as well as any corrective or preventative measures taken to avoid any similar occurrences in the future.

B. RECEIPT, STORAGE AND HANDLING OF WASTE

12. General

(1) Except as otherwise provided by these conditions, the collection, handling and disposal of Biomedical Waste shall be carried out in accordance with the Guideline.

(2) All waste unloading shall occur indoors at all times;

(3) All waste received at, but not Processed at the Site, shall be stored indoors at all times, pending transfer to final disposal with the exception of waste stored in accordance with conditions 20(1) and 20(2);

(4) Treatable Waste must be stored, pending Processing, as described in the information listed in Schedule "A"; and

(5) Only Treatable Waste may be Processed in an Autoclave;

(6) All other acceptable wastes received at the Site shall be stored, transferred and/or Processed in the Incinerator, in accordance with this ECA and information listed in Schedule "A".

(7) The Company shall ensure that only waste haulers approved by the Ministry to handle these wastes are used to transport waste to and from the Site.

13. Service Area

(1) The Company may only receive waste generated within Canada and the United States of America.

(2) No Biomedical Waste shall be received from the United States of America unless:

(a) the Biomedical Waste is being transferred from a facility under the control of Stericycle, Inc.; and

(b) the Biomedical Waste has been identified as being equivalent to waste class 312P by being identified on the manifest with code UN 3291.

(3) Any waste received from the United States of America that does not meet the labelling and/or packaging standards listed in Guideline C-4 shall be immediately re-labelled upon receipt to provide a clear indication of the nature of the waste and the treatment requirements for that waste. Any waste that is not clearly identified shall be incinerated on-site.

(4) All waste received from the United States of America shall be segregated from all other waste on-site.

14. Acceptable Waste Types

(1) Only Waste Class Nos. 148 (Miscellaneous waste inorganic chemicals), 261 (Pharmaceutical), 262 ((Detergents and Soaps), 264 (Photoprocessing), and 312 (Pathological) as defined in the New Ontario Waste Classes, and dated January 1986 or as revised, Biomedical wastes and solid non-hazardous wastes contracted for product destruction may be received at this Site.

15. Approved Waste Receiving Rate

(1) The total, maximum rate at which the Company may receive waste at the Site for Processing in an Autoclave and/ or Transfer and/ or Processing in the Incinerator shall be 95 tonnes per day.

16. Approved Waste Storage Capacity

(1) The maximum amount of Processed, unprocessed and Residual Waste that may be present at the Site is limited to 250 tonnes at any time.

17. Waste Screening

(1) Incoming waste containers shall be visually inspected by a Trained employee, prior to being accepted at the Site, to ensure that the Site is approved to accept that type of waste. This inspection does not require opening the containers, but shall include inspection to determine that the containers are undamaged and correctly and appropriately labelled and that the wastes are properly packaged.

(2) All incoming waste that arrives in leaking, damaged, improperly labelled, packaged or identified containers shall be repackaged to contain any leakage and re-labelled appropriately.

(3) Only properly identified, packaged, undamaged and labelled waste containers shall be Processed at the Site.

(4) Upon receipt at the Site, incoming materials must be categorized, by a Trained employee, as either Treatable Waste or Incineration Waste;

18. Waste Storage and Receiving Restrictions

(1) The Company shall ensure that all Treatable Waste except sharps received at the Site are Processed within 72 hours of receipt. If, for any reason, this is not possible, the Company shall ensure that all wastes are placed in refrigerated storage or removed from the Site, within 24 hours of the equipment or process failure or otherwise in accordance with the procedures as described in the information listed in Schedule "A", and disposed at an approved waste disposal site;

(2) Subject to Condition 18(1), if Treatable Waste is not Processed within 72 hours of receipt, no additional waste may be received at the Site for Processing in an Autoclave, until such time as the Site can operate in compliance with the conditions of this ECA;

(3) Waste Class 261 may be stored at the Site for a maximum of 30 days;

(4) All anatomical waste, including anatomical waste which is also cytotoxic, shall be refrigerated as soon as the waste has been weighed, inspected, time-stamped and recorded into the database unless it can be fed into the primary chamber of the Incinerator within 12 hours of having been recorded into the database; and

(5) All cytotoxic waste shall be immediately stored in separate, secure and clearly marked areas.

19. Treatable Waste Received in Biosystems Reusable Containers

(1) Treatable Waste received at the Site in Biosystems containers shall be unloaded and stored prior to processing in an area specified for only Biosystems containers.

(2) Biosystems containers received at the site that have been bagged prior to receipt at the

site shall be manually removed from the rack and disposed of immediately in the next load of waste being prepared for an Autoclave. These containers shall not be reused.

(3) Biosystems containers that will not be treated on site shall be stored in a designated area inside the building or in a locked authorized vehicle outside in a fenced area.

(4) Biosystems containers for storage or transport shall be removed from the site within 15 days of receipt at the Site.

(5) In the event that legislation is promulgated that regulates biomedical waste containers, the requirements of this condition may be amended in order to conform to any new regulatory requirements.

20. Outdoor Activities

(1) Unprocessed waste shall not be stored outside the building in any containers or in any vehicles, but may remain in refrigerated vehicles within a fenced, secure area at the Site, up to a maximum of four 10-tonne refrigerated truckloads, for a maximum of 12 hours while waiting to be unloaded; and

(2) Only Bottom Ash, demonstrated to be non-hazardous, up to a maximum of two 10-tonne lugger bins, and waste Processed in an Autoclave, up to a maximum of five 15-tonne compactor bins, may be stored outside the building in leak-proof, completely covered containers within a secure, fenced and paved area; and

(3) All waste present outdoors at the Site is subject to the overall limitation referred to in condition 16(1).

21. Processed Waste Handling

(1) Each load of Processed material and other waste, including Residual Waste, destined for final disposal, shall be removed from the Site in accordance with the information listed in Schedule "A".

(2) All biomedical waste Processed in an Autoclave, destined for final disposal, shall be packaged in accordance with the Guideline.

22. Signage and Security

(1) The Site shall be maintained in a secure manner to prevent unauthorized persons from entering the Site.

(2) A sign shall be posted outside the building in a prominent location to indicate when the Site is open, and shall include a telephone number for an emergency response contact.

23. Nuisance Impacts

(1) The Company shall ensure that the Site is operated in a manner that is clean, orderly and hygienic and that prevents any off-site impacts, including the impacts of vermin, vectors, dust, litter, noise and traffic on the environment and the public.

24. Wastewater Management

(1) The Company shall ensure that all wastewater generated is discharged in accordance with the applicable municipal sewer use by-laws or shipped off-site for treatment.

25. Disposal of Residual Waste

(1) The Company shall transfer the spent carbon and spent HEPA filters for disposal at a site approved to accept hazardous waste for disposal.

(2) Bottom Ash that is not leachate toxic is not considered hazardous waste and may therefore be disposed of as solid, non-hazardous waste at a landfill site approved to receive and dispose of such waste.

(3) Waste Processed in an Autoclave is not considered hazardous waste and may therefore be disposed of as solid, non-hazardous waste at a landfill site approved to receive and dispose of such waste.

C. OPERATION AND MAINTENANCE OF THE EQUIPMENT AND SITE

26. General

(1) The Company shall ensure that the Equipment and the Site are properly operated and maintained at all times.

27. Operating and Maintenance Manual

(1) Maintain an operating and maintenance manual that outlines the operating procedures and a maintenance program for the all Equipment on-site that includes, but is not limited to the following:

(a) routine operating procedures in accordance with recommendations of the equipment manufacturers and good engineering practices and other requirements contained in this ECA;

(b) a detailed waste acceptance protocol, including appropriate characterization and pre-screening procedures for all incoming wastes and acceptance procedures for waste received in the Biosystems reusable containers, maintenance and cleaning procedures associated with the cleaning of Biosystems containers and operation instructions and safety requirements for the associated washing equipment, with

special attention to Incineration Waste from any new customers with a view on combustion characteristics as well as potential impact on Bottom Ash quality;

(c) inspection programs, including frequency of inspection of all pieces of Equipment, and the methods or tests employed to detect when maintenance is necessary;

(d) repair and maintenance programs, including the frequency of routine maintenance of all pieces of Equipment;

(e) emergency procedures;

(f) instructions for any record keeping activities relating to operation, inspection and maintenance of the Equipment;

(g) any other plans and procedures which are necessary because of the special nature of the Site, the materials used at the Site, or the location thereof;

(h) a list of personnel positions responsible for operation and maintenance, including supervisory personnel and personnel responsible for recording and reporting pursuant to the requirements of this ECA, along with the training and experience required for the positions and a description of the responsibilities;

(i) a list and location of spare parts to be kept available at the Site;

(j) the procedures for recording and responding to environmental complaints;

(k) all appropriate measures to minimize dust, odours, noise and other nuisances generated from all potential sources at the Site; and

(l) the Activated Carbon Maintenance and Replacement Plan

(2) provide the operating and maintenance manual for inspection by staff of the Ministry upon request; and

(3) implement the recommendations of the operating and maintenance manual.

28. Emergency Response and Spill Contingency Plan

(1) The Company shall maintain an emergency response and spill contingency plan at the Site at all times when the Site is operational and shall submit the same to the District Manager for their information, the local Fire Department and the City of Brampton for their reference before any waste is received at the Site. The emergency response and contingency plan shall contain, as a minimum:

(a) emergency response procedures, including notification procedures in case of spills, fires and explosions;

(b) list of home and business phone numbers and work locations of all person(s) responsible for the Site;

(c) list of emergency phone numbers for the local Ministry office, Ministry's Spills Action Centre, and the Local Fire Department;

(d) measures to prevent spills, fires and explosions;

(e) description and procedures for use of fire fighting as well as spill clean-up related equipment and control and safety devices;

(f) maintenance and testing program for spill clean-up equipment and fire fighting equipment;

(g) training of Site operators and Site emergency response personnel;

(h) an emergency Site plan, identifying the location and nature of wastes on Site.

(2) The Company shall, as a minimum, review the emergency response and spill contingency plan on an annual basis, and, if amended, immediately submit the amended emergency response and contingency plan to the District Manager for their information, the local Fire Department and the City of Brampton.

(3) The Company shall ensure that at all times that equipment and material are kept on hand and in good repair for immediate use in the event of:.

(a) any change in process parameters which results or potentially could result in an excursion from approved operational ranges;

(b) any fire or explosion;

(c) any unauthorized discharge of a contaminant into the natural environment or interior of any building; or

(d) any spill within the meaning of Part X of the Act.

29. Equipment and Site Inspections

(1) The Company shall conduct regular inspections of the Equipment and Site to ensure that all pieces of Equipment and the Site are operated in a manner that will not negatively impact the environment. Any deficiencies detected during these regular inspections, that might negatively impact the environment, shall be promptly corrected. A written record shall be prepared, which includes the following:

(a) name and signature of Trained employee conducting the inspection;

(b) date and time of the inspection;

(c) list of pieces of Equipment inspected and all deficiencies that might negatively impact the environment observed;

(d) recommendations for remedial action and actions undertaken;

(e) date and time of maintenance activity; and

(f) a detailed description of the maintenance activity.

30. Emergency Power Supply

(1) The Company shall maintain the Emergency Power Supply in proper working condition at all times so that it is capable of maintaining the proper operation of all components of the Incinerator, the Air Pollution Control System and the Continuous Monitoring and Control System in order to ensure compliance with the Performance Conditions and to continue to operate the Incinerator and the Air Pollution Control System within the Operating Window.

31. Refrigerated Storage Units

(1) The Company shall ensure that the refrigerated storage units are operated at a temperature equal to or lower than 4 $^{\circ}$C at all times when waste is required to be refrigerated;

32. Autoclaves

(1) The Company shall Process a maximum of 70 tonnes per day of Treatable waste in the Autoclaves.

(2) The Company shall ensure that each of the two Autoclaves is operated at all times in such a manner that:

(a) the load per cycle does not exceed 1,590 kilograms;

(b) the sterilization temperature is maintained at 149 $^{\circ}$C +/ or - one (1) percent; and

(c) the sterilization cycle per load lasts at least 20 minutes when using the North Autoclave and 30 minutes when using the South Autoclave.

33. Incinerator and Air Pollution Control System

(1) The Company shall ensure that the waste feed into the Incinerator does not exceed 670 kilograms per hour, up to a maximum of 10 tonnes per day, at any time.

(2) The Company shall ensure that the temperature of the flue gas at the exit of the de-mister section of the Air Pollution Control System maintaining a minimum of 10 °C difference with the Carbon Bed inlet temperature.

(3) The Company shall ensure that the flue gas is reheated to a temperature not exceeding 57 °C before entering the Carbon Bed.

(4) The Company shall plan any Carbon replacement to occur eight (8) weeks after the annual source testing has been completed to confirm, based on the Source Testing results, that the Carbon half-life has been adequately determined for the Carbon Bed to effectively control the emissions of mercury, as well as dioxins, furans and dioxin-like PCB compounds.

(5) The Company shall ensure that appropriate equipment and systems are available to continuously monitor and provide visual and audible warnings for the warning set points detailed in Schedule 2.

34. Failure to Operate in Accordance

(1) The Company shall forthwith bring the Incinerator to a waste feed Lockout if one or more Baseline Parameters exceeds the waste feed Lockout set point continuously for a period of time longer than the time referred to in Column 6 of the attached Schedule 2; or under Controlled Shutdown if the Approval exceeded Baseline Parameters cannot be normalized below required limits within a 24-hour period.

35. Power Failure

(1) Upon the reduction, loss or failure of the external power source to the Site, the Company shall forthwith, in order to maintain compliance with the Performance Conditions of this ECA, take all reasonable steps to minimize all discharges from the Site, including steps to switch to the Emergency Power Supply within two minutes of the external power failure having occurred, and to control, reduce or halt combustion in the Incinerator, as may be necessary to ensure continued compliance with Performance Conditions and the ability to operate within the Operating Window.

(2) Despite subsection (a), the Company shall forthwith proceed to an Emergency Shutdown of the Incinerator, if there is a loss or failure of the external power supply; pursuant to subsection (a), and the Emergency Power Supply is not available within 2 minutes of the failure of the external power supply having occurred or the Emergency Power Supply fails while the external power supply is not available.

36. Air Pollution Control System Failure

(1) In the event that the Air Pollution Control System fails and/or malfunctions, the Company shall forthwith initiate an Emergency Shutdown of the Incinerator, while maintaining the temperature of the secondary chamber of the Incinerator in accordance with conditions 43(1) and 43(2).

37. Continuous Monitoring and Control System Failure

(1) In the event that the Continuous Monitoring and Control System fails and/or malfunctions, the Company shall bring the Incinerator to a waste feed Lockout, and not resume the waste feed to the Incinerator until such time that the Continuous Monitoring and Control System has been repaired and operates in compliance with the design and performance specifications set out in Schedules 3, 4, 5 and 6.

38. Use of Emergency Bypass Stack

(1) The Company shall not use the Emergency Bypass Stack, except during the following conditions:

(a) start-up of the Incinerator, when no waste has been fed into the Incinerator; or

(b) failure and/or malfunction of the Air Pollution Control System pursuant to condition 36(1) above.

(2) When use of the Emergency Bypass Stack is necessary, pursuant to condition 38(1)(b) above, the Company shall forthwith bring the Incinerator to an Emergency Shutdown, while maintaining the temperature in the secondary chamber of the Incinerator at a minimum temperature of 1000 °C by burning natural gas only, until all waste is completely incinerated and the Bottom Ash discharged from the primary chamber of the Incinerator.

(3) The Company shall forthwith notify the District Manager and Spills Action Centre by telephone, when use of the Emergency Bypass Stack occurs.

(4) In the event of any use of the Emergency Bypass Stack, the Company shall prepare and submit a report to the District Manager within five (5) calendar days of the use, which shall include the following:

(a) date of the occurrence;

(b) general description of the occurrence;

(c) duration of the occurrence;

(d) effect of the occurrence on the emissions from the Incinerator;

(e) measures taken to alleviate the effect of the occurrence on the emissions from the Incinerator; and

(f) measures taken to prevent the occurrence of the same or similar occurrence in the future.

D. DESIGN AND PERFORMANCE REQUIREMENTS FOR THE EQUIPMENT AND THE SITE

39. Site (Noise)

(1) The Company shall ensure that the noise emissions from the Site comply with the limits set in accordance with Publication NPC-300.

40. Refrigerated Storage Units

(1) The Company shall ensure that there is a minimum of 130 cubic metres of refrigerated storage space available to accommodate 35 tonnes of waste.

41. Autoclaves:

(1) The Company shall ensure that the Autoclaves meets the requirements set out in the Guideline at all times when waste is Processed in either Autoclave.

42. Bottom Ash Quality

(1) The Company shall ensure that the organic content, measured as carbon, of the Bottom Ash does not exceed 10 percent by weight.

43. Secondary Chamber of the Incinerator

(1) The Company shall have the Incinerator designed in such a manner as to ensure that the Incinerator is capable of maintaining, on a continuous basis, a temperature of not less than 1100°C in the secondary chamber of the Incinerator.

(2) The Company shall have the Incinerator designed and operated in such a manner as to ensure that the following performance conditions are met at all times:

(a) The Incinerator shall be capable of regulating, by means of auxiliary fuel control, the temperature at the outlet of the secondary chamber of the Incinerator, so as to ensure that a temperature of not less than 1000 °C is attained prior to introduction of any waste into the primary chamber of the Incinerator during the start-up, and that the said temperature is thereafter maintained during the entire incineration cycle and subsequent shutdown until all waste combustion is completed in the primary chamber of the Incinerator, and until the final Bottom Ash is discharged from the primary chamber of the Incinerator.

(b) The Incinerator shall include primary and secondary air control systems, which are capable of automatically adjusting the distribution and the quantity of combustion air, in such a manner that changes in the waste feed rate and/or waste composition or irregularities in the loading and/or combustion shall not adversely affect the performance of the Incinerator.

(c) The Residence Time for the combustion gases in the secondary chamber of the Incinerator shall be a minimum of one second at a temperature of 1000 °C, and shall be calculated from the point where most of the combustion has been completed and the incineration temperature fully developed, to the last thermocouple, where the temperature of not less than 1000 °C is maintained.

(d) The Incinerator shall provide and maintain a high degree of gas turbulence and mixing in the secondary chamber of the Incinerator.

(e) The Incinerator shall achieve the temperature, Residence Time, residual oxygen and turbulence requirements over the complete range of operating parameters, including feed rate, feed characteristics, combustion air, flue gas flow rate and heat losses.

44. Concentration Limits

(1) The Company shall, at all times, operate the Incinerator and the Air Pollution Control System in such a manner as to ensure that the following performance conditions are met:

(a) The concentration of nitrogen oxides at the Main Stack shall be not more than 187 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, calculated as the rolling arithmetic average of 24 hours of data derived from one-hour rolling average amounts measured by the Continuous Monitoring and Control System.

(b) The concentration of carbon monoxide at the Main Stack, shall be not more than 9 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, calculated as the rolling arithmetic average of 12 hours of data derived from one-hour rolling average amounts measured by the Continuous Monitoring and Control System.

(c) The residual oxygen in the Undiluted Gases at the outlet of the secondary combustion chamber of the incinerator shall be not less than 6 percent by volume on a dry basis, calculated as the rolling arithmetic average of 6 minutes of data measured by the Continuous Monitoring and Control System.

(d) The concentration of hydrochloric acid at the Main Stack shall be not more than 7 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined

by Compliance Source Testing.

(e) The concentration of suspended particulate matter at the Main Stack shall be not more than 17 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.

(f) The Toxic Equivalent Concentrations of dioxins, furans and dioxin-like PCBs at the Main Stack:

(A) Shall be not more than 80 picograms per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.

(B) The toxicity equivalent concentration of dioxins, furans and dioxin-like PCBs shall be calculated in accordance with Schedule 8 of O. Reg. 419/05. The Toxic Equivalent Factors (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 Technical Assessment and Standards Development Branch shall be contacted for appropriate procedures to convert non-isomer specific data to Toxic equivalents (TEQs).

(g) The concentration of organic matter having a carbon content, expressed as equivalent methane, in the Undiluted Gases at the outlet of the secondary chamber of the Incinerator and being an average of ten measurements taken at approximately one minute intervals, shall be not more than 50 parts per million by volume on dry basis, as measured by the Continuous Monitoring and Control System during Compliance Source Testing.

(h) The concentration of sulphur dioxide at the Main Stack shall be not more than 17 milligrams per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, calculated as the rolling arithmetic average of 24 hours of data measured by Compliance Source Testing.

(i) The concentration of mercury at the Main Stack shall be not more than 15 micrograms per dry cubic metre normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.

(j) The concentration of cadmium at the Main Stack shall be not more than 7 micrograms per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.

(k) The concentration of lead at the Main Stack shall be not more than 26 micrograms per dry cubic metres normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, as determined by Compliance Source Testing.

(2) The data reporting for the Baseline Parameters requires the following:

(a) Data recording minute-by-minute whenever the averaging time for a parameter limit is less than or equal to an hour; in such cases, the data acquisition system is expected to "roll the data" minute-by-minute to produce a series of rolling averages.

(b) Data recording every fifteen minutes whenever the averaging time for a parameter limit is more than an hour; in such cases, the data acquisition system is expected to "roll the data" every fifteen minutes to produce a series of rolling averages.

E. MONITORING

45. Noise

(1) The Company shall carry out acoustic audit measurements on the actual noise emissions due to the operation of the Site, in accordance with the procedures in Publication NPC-103.

(2) The Director may not accept the results of the acoustic audit if the requirements of Publication NPC-233 were not followed.

(3) If the Director does not accept the results of the acoustic audit the Director may require the Company to repeat the acoustic audit.

46. Autoclaves

(1) Every sixth day of operation of each of the two Autoclaves, the Company shall undertake Verification Testing as outlined in the Guideline.

(2) Waste loads tested shall be representative of the waste normally Processed in the Autoclaves to confirm that the outgoing waste is acceptable for disposal at an approved sanitary landfill site;

(3) Spore vials associated with the testing shall be cultured and monitored in accordance with the specifications of the manufacturers;

(4) If any tested load fails, as indicated by Verification Testing, the waste loads shall be reprocessed and the next load retested;

(5) Subject to condition 46(4), if a second tested load fails as well, no further waste may be received to be Processed in the Autoclaves or Processed in the Autoclave until the Company is able to ensure that the Treatable Waste can be effectively Processed in the Autoclaves; and

(6) All failures shall be immediately reported verbally to the District Office or Spills Action Centre and in writing to the District Manager and details of the failure(s) recorded in the Annual Report required under condition 51(1).

47. Continuous Monitoring and Control System

(1) The Continuous Monitoring and Control System shall be equipped with continuous recording devices and comply with the requirements outlined in the attached Schedules 3, 4, 5, and 6.

(2) The Company shall conduct and maintain a program to continuously monitor:

(a) the temperature in the primary chamber of the Incinerator,

(b) the temperature in the secondary chamber of the Incinerator,

(c) the concentration of carbon monoxide in the Undiluted Gases leaving the secondary chamber of the Incinerator or at the outlet of the Main Stack,

(d) on an interim basis, the concentration of oxygen in the gases leaving the Air Pollution Control System, which can be used as an indicator of oxygen levels in the Undiluted Gases leaving the secondary combustion chamber of the Incinerator.

(i) Any proposed upgrade to the Air Pollution Control System will require a relocation of the oxygen probe to a location that will monitor oxygen in the Undiluted Gases.

(e) the concentration of nitrogen oxides in the undiluted gases leaving the Air Pollution Control System.

(f) all other Baseline Parameters.

(3) The Company shall, in consultation with the Manager, develop and implement quality assurance and quality control procedures ("QA/QC plan") for the Continuous Monitoring and Control System in accordance with Report EPS 1/PG/7, to be implemented upon written acceptance from the Manager.

(4) The Company shall assess the accuracy of the information contained in the QA/QC plan every three years or sooner to reflect the actual configuration of the Continuous

Monitoring and Control System. If the assessment indicates the need for an update of the QA/QC plan, the Company shall submit updated quality assurance procedures and quality control activities plan shall to the Manager for written acceptance.

(a) Notwithstanding condition 47(4) above, by no later than March 31, 2020, the Company shall submit to the Manager and the District Manager, updated quality assurance procedures and quality control activities which will be employed in connection with the Continuous Monitoring and Control System.

(5) The Company shall not alter the quality assurance procedures and quality control activities unless the Director has approved the updated procedures in accordance with condition 47(4) above.

48. Source Testing

(1) The Company shall perform Source Testing to determine the rate of emission of the Test Contaminants in the Main Stack while processing a waste mix that may be encountered during the normal operation of the Incinerator yielding worse case emissions scenario.

(2) The Company shall perform Source Testing following the procedure outlined in Schedule 8 of this ECA to determine the rate of emission of the Test Contaminants from the Incinerator.

(3) The Company shall repeat the Source Testing on an annual basis ("Compliance Source Testing") for all Test Contaminants except for the polycyclic organic matter (excluding benzo(a)pyrene) and volatile organic contaminants, using one waste feed mix as agreed upon in writing by the Manager in consultation with the District Manager.

(4) If the annual Compliance Source Testing indicates that the toxicity equivalent concentration of dioxins, furans and dioxin-like PCBs has remained consistently below 32 picograms per dry cubic metre, normalized to 11 percent oxygen, at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals, for five (5) consecutive years, then the Company may exclude dioxins, furans and dioxin-like PCBs from the annual Source Testing every second year as long as the toxicity equivalent concentration of dioxins, furans and dioxin-like PCBs continues to remain below 32 picograms per dry cubic metre normalized to 11 percent oxygen at a reference temperature of 25°C and a reference pressure of 101.3 kilopascals.

(5) If the annual Compliance Source Testing indicates that benzo(a)pyrene (as a surrogate of polycyclic aromatic compounds with no set standards or guidelines in O. Reg. 419/05) exceeds O. Reg. 419/05 upper risk threshold, speciation for the polycyclic aromatic compounds listed in Schedule 9 will be required during the following Compliance Source Testing, or sooner if requested by the Director.

49. Testing of Bottom Ash

(1) The Company shall conduct periodic verification testing of the Bottom Ash in accordance with the following:

(a) The Company shall conduct Bottom Ash sampling using the method described in the Ministry document entitled "Protocol for Sampling and Evaluating Fly Ash from Non-Hazardous Solid Waste Incineration Facilities, Ministry of the Environment and Energy, October 1990"; except for the sampling frequency and analytical requirements which are set out in this condition.

(b) The Company shall test the Bottom Ash no less than once per year.

(c) The Company shall analyze the samples in accordance with the Toxicity Characteristic Leaching Procedure described in Section 1 of Reg. 347 for compliance with the contaminant limits set out in Schedule 4 of Reg. 347

(2) If at any time Bottom Ash is produced from waste that includes a new waste stream, the Company shall test that Bottom Ash in accordance with condition 49(1)(a) above before disposing of it.

(3) The Company shall prepare a report on each verification test on the Bottom Ash and submit this report to the District Manager no later than one month after the sampling has been completed in accordance with conditions 49(1)(a) or 49(2) above.

(4) If any of the tests indicate that the Bottom Ash is hazardous based on the results of sampling and analysis, the Company shall immediately notify the District Manager by telephone as well as in writing take action to ensure that hazardous waste is not disposed of at a site that is not approved to accept hazardous waste for storage, transfer and/or final disposal.

F. RECORD KEEPING AND REPORTING

50. General

(1) All records, monitoring data and reports required by the conditions of this ECA shall be maintained at the Site for a minimum period of at least five (5) years from the date of their creation in a hard copy format and as an electronic record and shall be made available for inspection by staff of the Ministry. The records shall include, as a minimum, the following daily records:

(a) the sources, types and weights of all wastes received;

(b) the types, weights and destinations of all wastes transferred from the Site;

(c) the types and weights of all wastes present at the Site at the end of each operating day;

(d) the types and weights of wastes Processed in the Autoclaves;

(e) the types and weights of wastes Processed in the Incinerator;

(f) start time, end time and weight for each Autoclave and Incinerator batch or operating period together with the Trained employee's name responsible for the proper Processing of the respective batch;

(g) any needle stick injuries or accidental direct exposure to Biomedical Waste (e.g., splashing of blood from a container into an employee's face) resulting from the operation of the Site;

(h) results of verification testing required by condition 46(1) of this ECA;

(i) any records related to inspection, repair and maintenance of the Equipment;

(j) records produced by the recording devices associated with the Continuous Monitoring and Control Systems; and

(k) records obtained during Source Testing.

51. Annual Report for the Autoclave and the Site

(1) By March 31st, 2020, and thereafter by each subsequent March 31st, the Company shall prepare and submit to the District Manager, and post on a web site identified by the Company name, an Annual Report covering the operation of the Autoclaves and all waste handling activities relating to the Site during the previous calendar year. Each such report shall include, but not be limited to, the following information:

(a) monthly summaries of tonnages of all wastes Processed at, stored at and/or transferred to the Site;

(b) details of any incidents involving improperly labelled incoming wastes and actions taken to ensure proper handling of all wastes and to minimize the potential for reoccurrence of the improper labelling;

(c) dates when each of the two Autoclaves was operated during the reporting period, including start and finish times as well as the names of the Trained employees who were responsible for the proper operation of the Autoclaves;

(d) details of any loads that failed the Autoclave verification testing required under condition 46(1)**;**

(e) any environmental and operational problems, including spills, that may have negatively impacted the quality of the environment, encountered during the

operation of either of the two Autoclaves and any mitigating actions taken, including a summary of any complaints received regarding the operation of the Autoclaves, as described under condition 10(1);

(f) a summary of all complaints received and any actions taken to mitigate;

(g) a statement as to compliance with all conditions of the ECA and with the inspection and reporting requirements of the conditions contained herein; and

(h) any recommendations to minimize environmental impacts and improve Site operations and monitoring programs.

52. Quarterly Report for the Incinerator

(1) The Company shall prepare and submit to the District Manager, and post on a website identified by the Company name, a Quarterly Report covering the operation of the Incinerator, the Air Pollution Control System and Continuous Monitoring and Control System, due not later than one (1) month after the end of the quarter being reported on. Each report shall include, but not be limited to, the following information:

(a) dates when the Incinerator was operated during the reporting period, including start and finish times as well as the names of the Trained employees responsible for the operation of the Incinerator;

(b) hourly and daily waste feed rates into the Incinerator for each day when the Incinerator was operated during the reporting period;

(c) daily minimum, maximum and average values for all Baseline Parameters for the averaging times referred to in the Performance Conditions;

(d) duration of any secondary warning for carbon monoxide concentration, as triggered by the criteria detailed in Schedule 2, the concentration of carbon monoxide read during each warning period, and the corrective actions taken in response.

(e) duration of any Lockout triggered by an exceedance of the Waste Feed Lockout Set Point values listed in Schedule 2;

(f) detailed explanation of any Lockout triggered by an exceedance of the Waste Feed Lockout Set Point values listed in Schedule 2, and the course of action taken to resume the waste feed;

(g) summary table describing each incident in which any of the concentration limits prescribed in condition 45(1) of this Approval are exceeded. The table shall include for each exceedance:

(i) date of exceedance;
(ii) duration of exceedance;
(iii) the exceeded parameter;
(iv) a description of the exceedance, including the suspected cause; and
(v) corrective actions taken to ensure operation resumes within the approved concentration limits.

the data in the table shall be expressed in the same units of measurement used in Condition 44(1).

(h) dates, duration and reason for any use of the Emergency Bypass Stack as well as actions taken to eliminate the need for using the Emergency Bypass Stack;

(i) any environmental and operational problems that may have negatively impacted the quality of the environment, encountered during the operation of the Incinerator and any mitigative actions taken, including a summary of any complaints received regarding the operation of the Incinerator. as described under condition 10(1);

(j) a statement as to compliance with all Conditions of this ECA and with the inspection and reporting requirements of the Conditions contained herein, including compliance with Design and Performance Specifications for the Continuous Monitoring and Control System, as set out in Schedules 3, 4, 5 and 6 as well as the quality assurance and quality control procedures for the methods and devices used to monitor the Baseline Parameters;

(k) any recommendations to minimize environmental impacts and improve Incinerator operations and monitoring programs; and

(l) summary of maintenance and repair activities in relation to the Incinerator, Air Pollution Control System and/or the Continuous Monitoring and Control System, including calibration and testing activities, during the reporting period.

53. Incinerator Transient Operation

(1) The Company shall prepare a monthly Incinerator's Transient Operation report to be maintained for at least two years by the Company and made available to the Ministry upon request. Each report shall be prepared in hard and electronic formats, and shall include, but not be limited to, the dates of any Baseline Parameter warning alarm triggered in accordance with criteria in Schedule 2, start and finishing times, the names of the Trained employees responsible for managing the alarm, and the course of action taken to resume operation of the Incinerator.

G. TRAINING

54. Training Requirements

(1) The Company shall ensure that staff receiving and/or Processing waste, handling waste, disinfecting or servicing equipment at the Site wear adequate protective clothing at all times in compliance with applicable provincial legislation and are trained with respect to:

(a) the terms, conditions and operating requirements of this ECA;

(b) the procedures for all waste receipt, transfer, Processing and storage operations;

(c) the operation and maintenance of the specific equipment which they operate at the Site;

(d) all emergency and spill response procedures;

(e) any environmental concerns pertaining to the Site and wastes to be handled; and

(f) relevant waste management legislation, regulations and guidelines.

(2) The Company shall maintain an updated training manual at the Site at all times. The manual shall include sufficient material to satisfy the requirements detailed in condition 54(1) above.

(3) The Company shall develop, and periodically update, a training plan, that includes, but is not limited to:

(a) the credentials of the trainer(s);

(b) the duration of the training course;

(c) the specific content of the training course, including any updated and supplementary information;

(d) the schedule for updating staff; and

(e) criteria to determine whether an individual trainee has met all the training objectives.

(4) Staff shall be deemed to be Trained, if they successfully pass the appropriate components of the training courses, and annually, or more often, update their knowledge and skills with respect to the maintenance and operation of the equipment that they are responsible for.

(5) A listing of all Trained employee responsible for the Processing of waste shall be placed in a visible and conspicuous location at the Site.

H. SITE CLOSURE

55. Closure Plan

(1) Three (3) months prior to the planned closure of this Site, the Company shall provide to the Director, for approval, a written Closure Plan for the Site. This plan shall include, as a minimum, a description of the work that will be done to facilitate closure of the Site and a schedule for completion of that work; and

(2) Within four (4) months of closure of the Site, the Company shall provide the Director with a report, written by an independent, qualified consultant which confirms that the Site has been closed in accordance with the Closure Plan submitted and approved in accordance with Condition 55(1).

SCHEDULE "A"

This Schedule "A" forms part of this ECA.

1. Document entitled "Applications for Certificates of Approval in accordance with the regulations under the EPA For the Establishment of a Biomedical, Pharmaceutical and Product Destruction Operation in the City of Brampton", submitted Thursday, September 3, 1998 by Medical Waste Management Inc.

2. Revised application for Approval of a Waste Disposal Site (Transfer/Processing) dated October 27, 1998, and signed by Daniel Kennedy, President, Medical Waste Management Inc.

3. Letter from I. Parrott, MOE, to D. Kennedy, Medical Waste Management Inc., dated November 24, 1998, re: Request for Additional Information.

4. Letter from D. Kennedy, Medical Waste Management Inc., to I. Parrott, MOE, dated November 27, 1998, re: Response to November 24, 1998, re: Request for Additional Information.

5. Application for a Certificate of Approval (Air) for a condenser dated September 1, 1998 as amended by Application for a Certificate of Approval (Air) dated October 27, 1998.

6. Application for a Certificate of Approval (Air) for a boiler dated September 1, 1998 as amended by Application for a Certificate of Approval (Air) dated October 27,1998.

7. Application for Amendment to Certificate of Approval Air, and supporting information, dated June 7, 2000.

8. Application for Amendment to Certificate of Approval Waste Disposal Site, and supporting information, dated June 7, 2000.

9. A letter, dated August 17, 2000, signed by N. Shah, P. Eng. And John E. Coulter of J.E. Coulter Associates Limited, re: "Medical Waste Management 95 Deerhurst Drive, Brampton, Noise Monitoring".

10. Letter dated August 28, 2000 signed by Daniel Kennedy.

11. Additional information binder with a cover letter dated September 7, 2000, signed by Daniel Kennedy.

12. Letter dated September 20, 2000 signed by Daniel Kennedy.

13. Response package with a cover letter dated October 9, 2000, signed by Daniel Kennedy.

14. Emissions Inventory and Dispersion Modelling for the Medical Waste Management (MWM) Inc. Proposed Medical Waste Incinerator, Prepared by Envirometrex Corporation, dated October

2000.

15. Human Health Risk Assessment for the Medical Waste Management Inc. Proposed Medical Waste Incinerator System Final Report. Prepared by Cantox Environmental, dated October 16, 2000.

16. E-mail message dated December 18, 2000 from Jim Gallant of Medical Waste Management Inc., including "Emergency Generator Addendum 1 to Human Health Risk Assessment For The Medical Waste Management Inc. Proposed Medical Waste Incinerator System, Brampton, Ontario" prepared by Cantox Environmental, December 2000 and "Human Health Risk Assessment Results for Santa Maria Foods Addendum 2 to Human Health Risk Assessment For The Medical Waste Management Inc. Proposed Medical Waste Incinerator System, Brampton, Ontario" prepared by Cantox Environmental, December 2000.

17. E-mail message dated December 21, 2000 from Richard Kolomeychuk of Envirometrex Corporation, including "Emergency Generator Dispersion Modelling Addendum 1 to Emissions Inventory and Dispersion Modelling For Medical Waste Management Inc. Proposed Medical Waste Incinerator prepared by Envirometrex Corporation November 30, 2000, revised December 21, 2000" and "Dispersion Modelling Results for Santa Maria Foods Addendum 2 to Emissions Inventory and Dispersion Modelling For Medical Waste Management Inc. Proposed Medical Waste Incinerator prepared by Envirometrex Corporation November 30, 2000, revised December 21, 2000".

18. E-mail message dated January 3, 2001 from Dan Kennedy regarding a financial assurance estimate.

19. Letter from Daniel Kennedy to Steve Klose, Ministry of the Environment, dated July 27, 2001, together with documentation referred to as “Medical Waste Management Inc. Pre-Commencement Date Reporting Requirements for the Ministry of the Environment.

20. Application for Approval of a Waste Disposal Site (transfer/processing) dated August 27, 2001, and signed by Daniel Kennedy.

21. Letter from Daniel Kennedy to Ian Parrott, Ministry of the Environment, dated August 28, 2001.

22. Letter from Jim Gallant on behalf of Medical Waste Management Inc. to Ken Smith, Ministry of the Environment, dated October 5, 2001.

23. Letter from Jim Gallant on behalf of Medical Waste Management Inc. to Ken Smith, Ministry of the Environment, dated October 23, 2001.

24. Medical Waste Management Inc. Continuous Emission Monitors QA/QC Program Updated: July 10, 2001.

25. Medical Waste Management Inc. Incinerator Air Pollution Control System Activated Carbon Monitoring & Replacement Program, December 11, 2001.

26. Medical Waste Management Inc. Incinerator Updated Activated Carbon Monitoring & Replacement Program, January 31, 2002 to replace Medical Waste Management Inc. Incinerator Air Pollution Control System Activated Carbon Monitoring & Replacement Program, December 11, 2001.

27. Letter from Jim Gallant on behalf of Medical Waste Management Inc. to Anne-Maria Pennanen, Ministry of the Environment, dated February 4, 2002.

28. Letter dated August 27, 2002 from Daniel Kennedy, Medical Waste Management Inc., to Ian Parrott, P. Eng., MOE, re: Provisional Certificate of Approval Number A-680324.

29. Letter dated August 21, 2002 from Paul Oldford, P. Eng., Manager of Solid Waste, Cape Breton Regional Municipality, to Ian Parrott, P. Eng., MOE, regarding the labour dispute in Sydney, Nova Scotia.

30. Letter dated February 4, 2003 from Daniel Kennedy, President, Medical Waste Management Inc., to Ian Parrott, MOE, describing the requested amendment.

31. Fax dated February 26, 2003 enclosing a revised letter dated February 4, 2003 from Daniel Kennedy, President, Medical Waste Management Inc., to Ian Parrott, MOE, describing the requested amendment.

32. Application for a Provisional Certificate of Approval for a Waste Disposal Site dated July 9, 2003 and signed by Daniel Kennedy, President, Medical Waste Management Inc.

33. Cover letter dated Thursday July 10, 2003 from Daniel Kennedy, President, Medical Waste Management Inc., to Ian Parrott, MOE, describing the requested amendment and enclosing the application form.

34. Letter dated December 31, 2003 from Daniel Kennedy, President, Medical Waste Management Inc., to Ian Parrott, MOE, supplying additional required information regarding Michigan waste contingency plan and receipt of waste class 262.

35. Application for a Provisional Certificate of Approval for a Waste Disposal Site dated April 20, 2004 and signed by L. A. Hurley, Operations Manager, Medical Waste Management Inc. including all attached supporting information and covering letter.

36. Application for a Provisional Certificate of Approval for a Waste Disposal Site dated July 6, 2006 including all attached information, plans, drawings and specifications.

37. Application for approval, signed by Daniel Kennedy, dated December 18, 2007, together with a cover letter, dated December 17, 2007, signed by John Chandler, A. J. Chandler & Associates Ltd., and attachments prepared by John Chandler, A. J. Chandler & Associates Ltd.

38. An e-mail from John Chandler to Anne-Maria Pennanen on January 21, 2008 including a letter, dated January 18, 2008, signed by John Chandler, A. J. Chandler & Associates Ltd., addressed to

Anne-Maria Pennanen, Ministry of the Environment".

39. A letter, dated February 1, 2008, signed by John Chandler, A. J. Chandler & Associates Ltd., addressed to Anne-Maria Pennanen, Ministry of the Environment regarding re-location of the Sharp Smart operation.

40. An e-mail from John Chandler to Anne-Maria Pennanen on February 10, 2008, including Figure 2: "Future Layout Inside Building, revised February 8, 2008" and "Design & Operating Report, Autoclave Waste Receipt and Handling Operations for Stericycle, Inc., revised February 8, 2008".

41. An e-mail from John Chandler to Anne-Maria Pennanen on February 11, 2008, including Figure 1: "Site Layout Showing Building Access and Outside Storage Areas", revised February 8, 2008.

42. An e-mail from Daniel Kennedy of Stericycle, Inc. to Anne-Maria Pennanen on February 18, 2008, including a copy of a neighbor notification letter and list of recipients.

43. An e-mail from Jean-Pierre Pepin of Stericycle, Inc. to Anne-Maria Pennanen on February 22, 2008, including a letter dated February 21, 2008 regarding a proposal for financial assurance.

44. A copy of a Notice of Decision, dated April 1, 2008, certified to be a correct copy and signed by Eileen Collie, City of Brampton, approving a minor variance or special permission to extend a non-conforming use (building addition to facilitate a compactor and walking floor trailer).

45. A copy of a letter, dated April 22, 2008, signed by Eileen Collie, City of Brampton, notifying that the Decision on minor variance is final and binding.

46. A copy of Engineer's General Review Certificate Sprinkler & Life Safety, date of Inspection & Review April 30, 2008, signed by Francis P. Sim, P. Eng.

47. A copy of Building Permit, dated May 1, 2008, issued by B.L. Campbell, City of Brampton.

48. A copy of a Pest Control program prepared by Orkin PCO Services.

49. An e-mail message dated May 26, 2008 from John Chandler of A. J. Chandler & Associates Ltd. containing an e-mail message dated May 26, 2008 from Daniel Kennedy of Stericycle Inc. to John Chandler of A. J. Chandler & Associates Ltd.

50. A letter dated October 10, 2008, signed by Jean-Pierre Pepin.

51. Carbon Management Plan, Stericycle - Brampton, Ontario, dated March 2009, together with a cover letter, dated April 6, 2009, signed by Jean - Pierre Pepin, Director, Environment, Safety and Health, Stericycle Inc.

52. Letter dated May 4, 2010, from Jean-Pierre Pepin, Director, Environmental Health and Safety, Stericycle, Inc., to Director, MOE, including the attached document entitled “Carbon Management Plan,

Stericycle - Brampton, Ontario, May 2010".

53. Application for a Provisional Certificate of Approval for a Waste Disposal Site dated June 15, 2010 signed by Dan Kokol, Stericycle Inc. on July 30, 2010, requesting a service area change to include the United States of America.

54. Report entitled "Ash Sampling Results in Support of Designation as Non-Hazardous Waste for the Medical Waste Management (Stericycle) Incineration Facility" dated March 2008 prepared by A.J. Chandler & Associates Ltd.

SCHEDULE 1

This Schedule 1 forms part of this ECA (Air and Waste Disposal Site).

List of Main Pieces of Equipment at the Site:

A. one (1) incineration facility, to burn a maximum of 10 tonnes per day of a mixture of biomedical waste, pharmaceutical waste and solid non-hazardous waste, complete with all auxiliary equipment and the following major components:

1. one (1) JOY ECOLAIRE 2500 TESI W/SR62H, or equivalent, controlled air 2-stage incinerator, referred to as the Incinerator, having a design operating capacity of 670 kilograms per hour, equipped with:

   a. a hydraulic ram waste feed system with internal stoker;

   b. a primary chamber complete with a fixed hearth, a natural gas fired burner rated at 1.95 gigajoules per hour, a combustion air fan with a maximum volumetric flowrate of 0.18 cubic metre per second, and two modulating under fire air blowers, one capable of delivering approximately 0.35 cubic metre per second, and the other approximately 0.25 cubic metre per second;

   c. hydraulic rams for removal of Bottom Ash from the primary chamber into an ash pit with a volume of approximately 4.6 cubic metres, complete with a water quench system;

   d. an in-line ash hoe for wet ash removal from the ash pit into ash collection bins, each with a volume of approximately 2.5 cubic metres;

   e. a secondary chamber, complete with a natural gas fired burner, rated at 4.48 gig joules per second, a combustion air fan with a maximum volumetric flowrate of 1.2 cubic metres per second, and a flameport blower to provide combustion air at a volumetric flowrate of 2.6 cubic metres per second at 20 °C;

   f. an Emergency Bypass Stack, having an exit diameter of 1.07 metres, extending 17.66 metres above grade, complete with a diverter valve and connection to route gases via a refractory lined hot gas duct into the Air Pollution Control System during normal operating conditions, discharging products of combustion and other Incinerator emissions during upset conditions into the natural environment at a maximum volumetric flowrate of 12.2 actual cubic metres per second at approximately 1000 °C;

2. one Air Pollution Control System, manufactured by EMCOTEK, including the following components:

   a. one (1) quench pre-scrubber tower, having an internal diameter of 1.55 metres

and a height of 5.2 metres, complete with a recirculation pump delivering 19.0 litres per hour of caustic into the spray nozzles at the upper parts of the pre-scrubber quench and condenser vessels, and an emergency potable water supply at 95 litres per hour into the spray nozzles at the top of the pre-scrubber quench vessel;

b. one (1) roof mounted single-cell, mechanical draft evaporative cooling tower, having a height of 12.8 metres, rated at 15.8 gigajoules per hour cooling capacity, equipped with single two- speed air coil fan, powered by a motor rated at 80 kilowatts, complete with a chemical water treatment system to control scaling, corrosion and biofouling, a drain down tank :having a capacity of 9,462 litres, and two pumps, installed in parallel providing 100 percent redundancy, each rated at 54 kilowatts, to deliver cooling water at an approximate flow rate of 82 litres per second at approximately 26 °C into the two heat exchangers associated with the Air Pollution Control System;

c. a caustic storage and delivery system, complete with a high density polyethylene tank capable of storing 18,928 litres of 50 percent caustic soda (sodium hydroxide) solution, three metering pumps, each rated at 30.28 litres per hour with one pump injecting caustic into the suction side of the quench vessel recirculation pump and the other two into the suction side of each of the two condenser vessel recirculation pumps with the combined flow of 50 percent caustic soda (sodium hydroxide) to be approximately 21 litres per hour;

d. one (1) condensing column, having an internal diameter of 1.55 metres and a height of 5.2 metres, complete with a recirculation pump delivering approximately 10 litres per hour of caustic, cooled in a heat exchanger, into the spray nozzles at the top of the condensing column;

e. two (2) rotary atomizer modules, each incorporating EmcoTek proprietary spray discs, spun at more than 10,000 revolutions per minute (rpm) by motors, rated at 67 kilowatts, to create a high shear energy water wall, complete with a pump circulating approximately 750 litres per minute of process water, cooled in a heat exchanger, such that the gases exit the rotary atomizers maintaining a minimum of 10 $^{\circ}$C difference with the Carbon Bed Inlet Temperature;

f. one (1) 3-stage MistFree polypropylene acid absorber and de-mister system;

g. steam re-heat system, complete with a steam supply at 113 kilograms per hour from the boiler referenced in B. below, to raise temperature of the gases to approximately 52 °C before Carbon Bed;

h. Carbon Bed filter, complete with two carbon layers each measuring 2.29 metres by 4.88 metres by 0.2 metre and each containing at.least 1 tonne of carbon;

i. a HEPA filtration system, containing one array, measuring 2.44 metres by 2.44

metres, complete with filters each measuring 0.61 metre by 0.61 metre by 0.30 metre;

j. Selective non-catalytic reduction system (SNCR), to inject ammonia or an equivalent rate of urea to the water feed used to cool the incinerator gases; injecting ammonia or an equivalent rate of urea with range of 1.89 to 3.79 litres per hour.

k. one induced draft fan equipped with a motor, rated at 30 kilowatts, and variable' frequency drive, mounted at floor level, exhausting tangentially upwards directly into the Main Stack;

l. one Main Stack, discharging Undiluted Gases exiting the Air Pollution Control System at a maximum volumetric flowrate of 9,668 actual cubic metres per hour at 52 °C, having an exit diameter of 0.67 metre, extending 18.29 metres above grade;

3. a Continuous Monitoring and Control System, including, but not limited to the following:

a. waste feed rate;

b. shielded "R"-type thermocouples, or equivalent, to measure the temperature at the following locations:

i. primary combustion chamber of the incinerator (two locations);
ii. outlet duct of the secondary combustion chamber of the incinerator, at a location where a flue gas retention time of a minimum of one second is achieved;
iii. inlet of reheat section;
iv. fan exhaust I stack inlet;

c. one Rosemount World Class 3000, in-situ oxygen analyzer, or equivalent, to measure the concentration of oxygen at a location where the concentration of oxygen is representative of the operating condition at the exit of the secondary combustion chamber;

d. one Rosemount Model 5100A, in-situ carbon monoxide analyzer, or equivalent, to measure the concentration of carbon monoxide at a location where the concentration of carbon monoxide is representative of the operating condition at the exit of the secondary combustion chamber or the outlet of the Main Stack;

e. One in-situ Chemiluminescence analyzer, or equivalent, to measure the concentration of nitrogen oxides where the concentration of nitrogen oxides is representative of the operating conditions at the exit of the Air Pollution Control System.

f. differential pressure gauges to measure the differential pressure across each of the carbon filter and HEPA filter;

g. sodium hydroxide flow rate into each of the pre-quench scrubber and condensing tower;

h. amperage for each rotary atomizer;

i. pre-scrubber liquor pH;

j. condensing tower liquor pH;

k. atomizer/de-mister tank liquor pH (two);

l. Ammonia or an equivalent urea injection rate to the SNCR.

All being recorded and monitored (and some automatically controlled) by either the Incinerator or EmcoTek Process Control System.

4. Process Control System to control the operation of the Incinerator, Air Pollution Control System, Continuos Monitoring and Control System, waste conveyors, caustic injection system, cooling tower system, and all associated pieces of equipment necessary for the proper functioning the aforementioned systems, complete with a computer-based data acquisition, alarm and reporting system.

B. 1. one (1) natural gas fired boiler, used as a back up boiler, to supply steam for an air pollution control reheat system associated with the incineration facility and also for two (2) autoclave sterilization systems, to sterilize a maximum of 70 tonnes per day of solid biomedical waste, having a maximum heat input of 9,284,000 kilojoules per hour, exhausting into the atmosphere through a stack, having an exit diameter of 0.46 metre, extending 2.5 metres above the roof and 9.71 metres above grade; and

2. one (1) natural gas fired boiler, to be used as the main boiler, to supply steam for an air pollution control reheat system associated with the incineration facility and also for two (2) autoclave sterilization systems, to sterilize a maximum of 70 tonnes per day of solid biomedical waste, having a maximum heat input of 18,700,000 kilojoules per hour, discharging to the air at a maximum volumetric flow rate of 3.18 cubic metres per second, through a stack, having an exit diameter of 0.60 metre, extending 2.03 metres above the roof and 9.23 metres above grade.

C. one (1) condenser, connected in series with the autoclave sterilization system, used for controlling discharge from the autoclave, having a heat capacity of 2,563,000 kilojoules per hour, a minimum diameter of 0.76 metre and a height of 3.05 metre, discharging into the atmosphere through a vent having an exit diameter of 0.2 metre, extending 2.5 metres above the roof and 9.71 metres above grade;

D. a compactor located in the sterilized Treatable Waste shipping area to be used for loading treated waste into a walking floor trailer.

E. an Emergency Power Supply, consisting of a 500-kilowatt generator complete with a diesel fuel fired engine having a maximum fuel consumption rate of 117 litres per hour, and a manually operated transfer switch, to provide back up power during a power failure, discharging the products of combustion into the atmosphere through a stack having an exit diameter of 0.254 metre, extending 18.24 metres above grade.

SCHEDULE 2

This Schedule 2 forms part of this ECA (Air and Waste Disposal Site).

The Company shall ensure that appropriate equipment and systems are available to continuously monitor and provide visual and audible warnings for the following warning set points:

Column 1 Baseline Parameter	Column 2 Monitoring Capabilities	Column 3 Warning Value Set Point[(1)]	Column 4 Warning Activation Average Period	Column 5 Waste Feed Lockout Set Point[(2)]	Column 6 Waste Feed Lockout Average Period
Residual Oxygen	1 minute	< 7.5%[(3)]	3 minutes	< 7.5%[(3)]	6 minutes
Carbon Monoxide[(4)]	1 minute	> 8 ppmvd	First: 30 minutes Second: 4 hours (based on 30-minute rolling averages)	> 8 ppmvd	12 hours (based on 1-hour rolling averages)
Nitrogen Oxides	1 minute	> 98 ppmvd	6 hours	> 98 ppmvd	24 hours
Waste Feed Rate into the Incinerator	1 hour	< 670 kg/h	1 hour	< 670 kg/h	1 hour
Primary Chamber Temperature	1 minute	[TBD]	[TBD]	[TBD]	[TBD]
Secondary Chamber Temperature	1 minute	≥1000 °C	1 minute	≥1000 °C	30 minutes
De-mister Exit/Carbon Bed Inlet differential Temperature	1 minute	10 °C	30 minutes	10 °C	3 hours
Carbon Bed/HEPA Filter Inlet Temperature	1 minute	≤ 57 °C	30 minutes	≤ 57 °C	3 hours
HEPA Filter Differential Pressure Drop	1 minute	>4" WC	30 minutes	>4" WC	3 hours
Carbon Filter Differential Pressure Drop	[TBD]	[TBD]	[TBD]	[TBD]	[TBD]
Quench pH	1 minute	[TBD][(5)]	30 minutes	[TBD][(5)]	3 hours
Atomizers pH	1 minute	[TBD][(5)]	30 minutes	[TBD][(5)]	3 hours
Condenser pH	1 minute	[TBD][(5)]	30 minutes	[TBD][(5)]	3 hours
Atomizers	1 minute	< 36 A	30 minutes	< 36 A	3 hours

Amperage					
Ammonia Injection Rate	1 hour	< 1.89 Lph or > 3.79 Lph	1 hour	< 1.89 Lph or > 3.79 Lph	3 hours

[(1)] Warning set points are based on the occurrence of abnormal conditions that will trigger a warning, requiring the attention by the operator.

[(2)] Waste Feed Lockout set points are based on the occurrence of abnormal conditions showing exceedances beyond the average time of the ECA set emissions limits, or non-conformance of the acceptable operating range of the target process parameters beyond the transitional period of such abnormal condition; which requires corrective maintenance to bring back the emissions and/or process parameters within acceptable limits.

1. The calculation of the performance limits for determining compliance starts when the waste feed resumes after a shutdown or lockout

2. The set points for those parameters, for which this Approval does not stipulate any value, shall be established not later than during the first Source Testing campaign after the issuance of this Approval.

3. All monitoring systems shall be operated and maintained so that accurate data is obtain during a minimum of 95% on an annual basis, excluding calibration time.

4. The expressed time duration in the "Waste Feed Locked Average Period" is continuous.

5. The lockout period includes the 4 hours immediately after the cessation of the waste feed

[(3)]Interim value. Shall be set to 6% when the probe is relocated to measure oxygen in the Undiluted Gases.

[(4)]Carbon Monoxide has two warning set points before Lockout. Triggering of the second warning requires reporting to the Ministry as part of the Quarterly Reports detailed in condition 54(1)

[(5)]A Site Standard Operating Procedure (SSOP) is to be prepared by the Company providing the strategy to be used for setting up the pH values, based on latest HCl testing results, with annual revision of the pH values undertaken based on the latest source testing results.

SCHEDULE 3

This Schedule 3 forms part of ECA (Air and Waste Disposal Site).

PARAMETER:
Temperature

LOCATION:
The sample point for the Continuous Temperature Monitor shall be located at the exit of the secondary chamber of the Incinerator where the retention time of flue gases has reached a minimum of one second at a minimum temperature of 1000°C.

PERFORMANCE:
The Continuous Temperature Monitor shall meet the following minimum performance specifications for the following parameters.

	PARAMETERS	SPECIFICATION
1.	Type:	shielded "R" type thermocouple, or equivalent.
2.	Accuracy:	± 1.5 percent of the minimum gas temperature

DATA RECORDER:
The data recorder must be capable of registering continuously the measurement of the monitor without a significant loss of accuracy and with a time resolution of one minute or better.

RELIABILITY:
The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter, excluding calibration time.

SCHEDULE 4

This Schedule 4 forms part of ECA (Air and Waste Disposal Site).

PARAMETER:
Oxygen

INSTALLATION:
The Continuous Oxygen Monitor shall be installed at an accessible location where the measurements are representative of the actual concentration of oxygen in the undiluted gases leaving the secondary chamber of the Incinerator and shall meet the following installation specifications:

	PARAMETERS	SPECIFICATION
1.	Range (percentage):	0-20 or 0-25
2.	Calibration Gas Ports:	close to the sample point

PERFORMANCE:
The Continuous Oxygen Monitor shall meet the following minimum performance specifications for the following parameters:

	PARAMETERS	SPECIFICATION
1.	Span Value (percentage):	2 times the average normal concentration of the source
2.	Relative Accuracy:	≤ 10 percent of the mean value of the reference method test data
3.	Calibration Error:	0.25 percent O_2
4.	System Bias:	≤ 4 percent of the mean value of the reference method test data
5.	Procedure for Zero and Span Calibration Check:	all system components checked
6.	Zero Calibration Drift (24-hour):	≤ 0.5 percent O_2
7.	Span Calibration Drift (24-hour):	≤ 0.5 percent O_2
8.	Response Time (90 percent response to a step change):	≤ 90 seconds
9.	Operational Test Period:	≥ 168 hours without corrective maintenance

CALIBRATION:
Daily calibration drift checks on the monitor shall be performed and recorded in accordance with the requirements of
Report EPS l/PG/7.

DATA RECORDER:
The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of a minimum of one (1) minute.

RELIABILITY:
The monitor 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, excluding calibration time.

SCHEDULE 5

This Schedule 5 forms part of this ECA (Air and Waste Disposal Site).

PARAMETER:
Carbon Monoxide

INSTALLATION:
The Continuous Carbon Monoxide Monitor shall be installed at an accessible location where the measurements are representative of the actual concentration of carbon monoxide in the undiluted gases leaving the secondary chamber of Incinerator or the outlet of the Main Stack and shall meet the following installation specifications.

	PARAMETERS	SPECIFICATION
1.	Range (parts per million, ppm):	0 to ≥ 100 ppm by volume (dry)
2.	Calibration Gas Ports:	close to the sample point

PERFORMANCE:
The Continuous Carbon Monoxide Monitor shall meet the following minimum performance specifications for the following parameters:

	PARAMETERS	SPECIFICATION
1.	Span Value (percentage):	2 times the average normal concentration of the source
2.	Relative Accuracy:	≤ 10 percent of the mean value of the reference method test data or ± 5 ppm, whichever is greater
3.	Calibration Error:	≤ 2 percent of actual concentration
4.	System Bias:	≤ 4 percent of the mean value of the reference method test data
5.	Procedure for Zero and Span Calibration Check:	all system components checked
6.	Zero Calibration Drift (24-hour):	≤ 5 percent of span value
7.	Span Calibration Drift (24-hour):	≤ 5 percent of span value
8.	Response Time (90 percent response to a step change):	≤ 90 seconds
9.	Operational Test Period:	≥ 168 hours without corrective maintenance

CALIBRATION:
Daily calibration drift checks on the monitor shall be performed and recorded in accordance with the requirements of
Report EPS l/PG/7.

DATA RECORDER:
The data recorder must be capable of registering continuously the measurement of the monitor with an accrracy of 0.5 percent of a full scale reading or better and with a time resolution of a minimum of one (1) minute.

RELIABILITY:

The monitor 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, excluding calibration time.

SCHEDULE 6

This Schedule 6 forms part of this ECA (Air and Waste Disposal Site)

PARAMETER:
Nitrogen Oxides

INSTALLATION:
The Continuous Nitrogen Oxide Monitor shall be installed at the Main Stack where the measurements are representative of the actual concentration of nitrogen oxides in the Undiluted Gases leaving the Air Pollution Control System and shall meet the following specifications.

	PARAMETERS	SPECIFICATION
1.	Range (parts per million, ppm):	0 to 200 ppm by volume (dry)
2.	Calibration Gas Ports:	close to the sample point

PERFORMANCE:
The Continuous Nitrogen Oxides Monitor shall meet the following minimum performance specifications for the following parameters:

	PARAMETERS	SPECIFICATION
1.	Span Value (percentage):	2 times the average normal concentration of the source
2.	Relative Accuracy:	≤ 10 percent of the mean value of the reference method test data or 5 ppm, whichever is greater
3.	Calibration Error:	≤ 2 percent of actual concentration
4.	System Bias:	≤ 4 percent of the mean value of the reference method test data
5.	Procedure for Zero and Span Calibration Check:	all system components checked
6.	Zero Calibration Drift (24-hour):	≤ 2.5 percent of span value
7.	Span Calibration Drift (24-hour):	≤ 2.5 percent of span value
8.	Response Time (90 percent response to a step change):	≤ 90 seconds
9.	Operational Test Period:	≥ 168 hours without corrective maintenance

CALIBRATION:
Daily calibration drift checks on the monitor shall be performed and recorded in accordance with the requirements of Report EPS 1/PG/7.

DATA RECORDER:
The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of 1 minute.

RELIABILITY:
The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent

of the time for each calendar quarter.

SCHEDULE 7

This Schedule 7 forms part of this ECA (Air and Waste disposal Site).

Test Contaminants

Gases and Particulate (Testing)

1. Gases:

    Hydrogen Chloride
    Carbon Monoxide
    Carbon Dioxide
    Oxides of Nitrogen
    Oxygen
    Sulphur Dioxide
    Total Hydrocarbons
    Ammonia

2. Particulate:

    Total suspended particulate matter and particulate matter with the associated gaseous/vapour phase for the following materials:

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

Testing for Other Chlorinated Organics

Total Dichlorobenzenes
Total Trichlorobenzenes
Total Tetrachlorobenzenes
Pentachlorobenzene
Hexachlorobenzene
Total Dichlorophenols
Total Trichlorophenols
Total Tetrachlorophenols
Total Pentachlorophenols
Total Polychlorinated Biphenyls

SCHEDULE 7 (cont.)

Testing for Polycyclic Organic Matter

Acenaphthylene
Acenaphthene
Anthracene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)fluorene
Benzo(b)fluorene
Benzo(ghi)perylene
Benzo(a)pyrene
Benzo(e)pyrene
2-chloronaphthalene
Chrysene
Coronene
Dibenzo(a,c)anthracene
9,10 - Dimethylanthracene
7,12 - Dimethylbenzo(a)anthracene
Fluoranthene
Fluorene
Indeno(l,2,3 - Cd)pyrene
2 - Methylanthracene
3 - Methylcholanthrene
1 - Methylnaphthalene
2 - Methylnaphthalene
1 - Methylphenanthrene
9 - Methylphenanthrene
Naphthalene
Perylene
Phenanthrene
Picene
Pyrene
Tetralin
Triphenylene
Dibenzo(a,h)anthracene
Dibenzo(a,e)pyrene
Quinoline
Biphenyl
0-terphenyl
M-terphenyl
P-terphenyl

SCHEDULE 7 (cont.)

Volatile Organic Matter

Acetaldehyde
Acetone
Acrolein
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Butadiene
1,3 - Butanone
2 - Carbon Tetrachloride
Chloroform
Cumene
Dibromochloromethane
Dichlorodifluoromethane
Dichloroethane,
1,2 - Dichloroethene,
Trans- 1,2- Dichloroethene,
1,1 - Dichloropropane,
1,2 - Ethylbenzene
Ethylene Dibromide
Formaldehyde
Mesitylene
Methylene Chloride
Styrene
Tetrachloroethene
Toluene
Trichloroethane,
1,1,1 - Trichloroethene
Trichloroethylene,
1,1,2 - Trichlorofluoromethane
Trichlorotrifluoroethane
Vinyl Chloride
Xylenes, M-, P- and O-

SCHEDULE 7 (cont.)

Dioxins, Furans and Dioxin-Like Polychlorinated Biphenyls

Dioxin Isomers

2,3,7,8-Tetrachlorodibenzo-p- dioxin [2,3,7,8-TCDD]
1,2,3,7,8-Pentachlorodibenzo-p-dioxin [1,2,3,7,8-PeCDD]
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,4,7,8-HxCDD]
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,6,7,8-HxCDD]
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin [1,2,3,7,8,9-HxCDD]
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin [1,2,3,4,6,7,8-HpCDD]
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin [1,2,3,4,6,7,8,9-OCDD]

Furan Isomers

2,3,7,8-Tetrachlorodibenzofuran [2,3,7,8-TCDF]
1,2,3,7,8-Pentachlorodibenzofuran [1,2,3,7,8-PeCDF]
2,3,4,7,8-Pentachlorodibenzofuran [2,3,4,7,8-PeCDF]
1,2,3,4,7,8-Hexachlorodibenzofuran [1,2,3,4,7,8-HxCDF]
1,2,3,6,7,8-Hexachlorodibenzofuran [1,2,3,6,7,8-HxCDF]
1,2,3,7,8,9-Hexachlorodibenzofuran [1,2,3,7,8,9-HxCDF]
2,3,4,6,7,8-Hexachlorodibenzofuran [2,3,4,6,7,8-HxCDF]
1,2,3,4,6,7,8-Heptachlorodibenzofuran [1,2,3,4,6,7,8-HpCDF]
1,2,3,4,7,8,9-Heptachlorodibenzofuran [1,2,3,4,7,8,9-HpCDF]
1,2,3,4,6,7,8,9-Octachlorodibenzofuran [1,2,3,4,6,7,8,9-OCDF)

Co-Planar PCBs (Dioxin-like PCBs)

3,3',4,4'-Tetrachlorobiphenyl [3,3',4,4'-tetraCB (PCB 77)]
3,4,4',5- Tetrachlorobiphenyl [3,4,4',5-tetraCB (PCB 81)]
2,3,3',4,4'- Pentachlorobiphenyl [2,3,3',4,4'-pentaCB (PCB 105)]
2,3,4,4',5- Pentachlorobiphenyl [2,3,4,4',5-pentaCB (PCB 114)]
2,3',4,4',5- Pentachlorobiphenyl [2,3',4,4',5-pentaCB (PCB 118)]
2',3,4,4',5- Pentachlorobiphenyl [2',3,4,4',5-pentaCB (PCB 123)]
3,3',4,4',5- Pentachlorobiphenyl (PCB 126)
2,3,3',4,4',5- Hexachlorobiphenyl [2,3,3',4,4',5-hexaCB (PCB 156)]
2,3,3',4,4',5'- Hexachlorobiphenyl [2,3,3',4,4',5'-hexaCB (PCB 157)]
2,3',4,4',5,5'- Hexachlorobiphenyl 2,3',4,4',5,5'-hexaCB (PCB 167)
3,3',4,4',5,5'- Hexachlorobiphenyl [3,3',4,4',5,5'-hexaCB (PCB 169)]
2,3,3',4,4',5,5'- Heptachlorobiphenyl [2,3,3',4,4',5,5'-heptaCB (PCB 189)]

SCHEDULE 8

This Schedule 8 forms part of this ECA (Air and Waste Disposal Site).

Source Testing Procedure:

(1) The Company shall submit, within nine (9) months of the previous Source Testing, to the Manager a Pre-Test Plan for the Source Testing required under this Approval;

(2) The Company shall finalize the Pre-Test Plan in consultation with the Manager;

(3) The Company shall not commence the Source Testing required under this Approval until the Manager has approved the Pre-Test Plan;

(4) The Company shall complete the Source Testing not later than six (6) months after the Manager has approved the Pre-Test Plan;

(5) The Company shall notify the Manager and District Manager 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;

(6) The Company shall submit a report (hardcopy and electronic format) on the Source Testing to the Manager and District Manager 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:

(a) an executive summary;

(b) an identification of the applicable North American Industry Classification System code (NAICS) for the Facility; and

(c) records of operating conditions at the time of Source Testing, including but not limited to the following:

(i) types of waste;

(ii) hourly feed rates of the wastes;

(iii) all relevant records produced by the Continuous Monitoring and Control Systems;

(iv) results of Source Testing , including the emission rate and emission concentration of the Test Contaminants;

(v) where the analytical results indicate that the amount of a particular isomer of the dioxin-like compound is less than the detection limit reported by the

laboratory analyzing the source testing samples, the Company shall determine the amount of dioxin-like compound to be reported as the toxicity equivalent concentration by using the reported detection limit as the amount present for that isomer. The reported detection limits are to be determined by the laboratory at the time the source testing samples are analysed based on analysis of appropriate replicate low level samples or blanks;

(vi) results of dispersion calculations in accordance with AERMOD, or any other method accepted by the Director, indicating the Point of Impingement concentrations of the Test Contaminants listed in Schedule 7 of this Approval; and

(vii) a tabular comparison of Source Testing results for the Incinerator and Test Contaminants to original emission rates described in the Company's application and the ESDM Report.

(7) The Director may not accept the results of the Source Testing if:

(a) the Source Testing Code or the requirements of the Manager were not followed;

(b) the Company did not notify the Manager and the District Manager of the Source Testing; or

(c) the Company failed to provide a complete Report on the Source Testing.

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

The reason for conditions 1(1), 1(2), 3(1) through 3(4), 4(1), 7(1) through 7(3), 9(1) is to clarify the legal rights and responsibilities of the Company.

The reason for conditions 2(1), 2(2), 12(1) through 12(7), and 22(1) through 22(3) is to ensure that the Site is operated in accordance with the application and supporting documentation submitted by the Company, and not in a manner which the Director has not been asked to consider.

The reasons for condition 5(1) is to ensure that the Site is operated under the corporate name which appears on the application form submitted for this Approval and to ensure that the Director is informed of any changes.

The reasons for condition 5(2) are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this Approval.

The reason for the condition 6(1) is to ensure that appropriate Ministry staff have ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this Approval. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA and OWRA.

The reason for conditions 8(1) through 8(4) is to ensure that sufficient funds are available to the Ministry to clean up the Site in the event that the Company is unable or unwilling to do so.

The reason for condition 10(1) is to ensure that any complaints regarding Site operations are responded to and recorded in a timely and appropriate manner.

The reason for conditions 11(1) and 11(2) is to ensure that all spills, as defined in Reg. 347, are reported and acted upon in the appropriate manner.

The reason for conditions 13(1) through 13(4) is to specify the approved service area from which waste may be accepted at the Site.

The reason for conditions 14(1) and 15(1) is to specify the types and amounts of waste that may be received at the Site on a daily basis.

The reasons for condition 16(1) and 18(1) through 18(5) is to specify the amounts of waste that may be stored at the Site at any one time and to specify any storage restrictions imposed to minimize the potential for an adverse impact.

The reason for conditions 17(1) through 17(5) is to specify the waste screening procedures to be employed at the Site to ensure that any unacceptable wastes received at the Site are managed appropriately.

The reason for conditions 19(1) through 19(5) is to approve the use of the proprietary Biosystems reusable containers for biomedical waste management purposes and detail any restrictions regarding its use.

The reason for conditions 21(1), 21(2), 26(1), 27(1) through 27(3), 29(1), 30(1), 31(1), 33(1) through 38(4), is to ensure that the Site is operated in a manner which does not result in a nuisance or a hazard to the health and safety of any person or the environment.

The reason for conditions 20(1) through 20(3) is to specify the waste management activities that may be conducted outdoors.

The reason for conditions 22(1) and 22(2) is to ensure the controlled access and integrity of the Site by preventing unauthorized access.

The reason for condition 24(1), 25(1) through 25(3) is to ensure that waste and wastewater is managed and processed in accordance with the Act and its regulations and not in a manner which may results in an adverse impact or a potential hazard to the health and safety of any person or the environment.

The reasons for conditions 28(1) through 28(3) are to ensure that an Emergency Response and Contingency Plan is developed and maintained at the Site and that the Company is prepared and properly equipped to take immediate action in the event of an emergency or contingency situation.

The reason for conditions 39(1) through 44(2) is to outline the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Equipment.

The reason for conditions 45(1) through 49(4) is to require the Company to gather accurate information so that the environmental impact and subsequent compliance with the Act, the Regulations and this ECA can be verified.

The reason for conditions 50(1) through 53(1) is to require the Company to retain records and provide information to the Ministry so that the environmental impact and subsequent compliance with the Act, the Regulation and this ECA can be verified.

The reason for conditions 54(1) through 54(5) is to ensure that the Site is operated by properly trained staff to minimize the potential for a hazard or nuisance to the natural environment or any person.

The reason for conditions 55(1) and 55(2) is to ensure that the Site is closed in accordance with Ministry standards and to protect the health and safety of the public and the environment.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A680324 issued on March 5, 2001 and all its amending notices.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall

state:

1. 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;
2. 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:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. 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:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

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 Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

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

DATED AT TORONTO this 28th day of June, 2019

Mohsen Keyvani, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

DL/
c: District Manager, MOECC Halton-Peel
Dan Kokol, Stericycle, ULC

APPENDIX B

Particulate Matter and Metals Sampling Results
Incinerator

Test :	Test #1			Test #2			Test #3			AVERAGE RESULTS		
Sample Volume (Rm^3) [1] :	6.04			6.61			5.85					
Stack Flow Rate (Rm^3/s) [1] :	1.80			1.95			1.75			1.83		
Parameter	**Lab Data**	**Concentration**	**Emission Rate**	**Lab Data**	**Concentration**	**Emission Rate**	**Lab Data**	**Concentration**	**Emission Rate**	**Concentration**	**Concentration**	**Emission Rate**
Particulate	**(mg)**	**(mg/m^3)**	**(mg/s)**	**(mg)**	**(mg/m^3)**	**(mg/s)**	**(mg)**	**(mg/m^3)**	**(mg/s)**	**(mg/m^3)**	**11% O_2 (mg/m^3)**	**(mg/s)**
Particulate in Acetone Rinse	5.40	-	-	5.50	-	-	8.00	-	-	-	-	-
Particulate on Filter	10.9	-	-	20.8	-	-	19.8	-	-	-	-	-
Particulate Matter	16.3	2.70	4.87	26.3	3.98	7.76	27.8	4.75	8.30	3.81	4.35	6.97
Metals	**(µg)**	**($µg/m^3$)**	**(mg/s)**	**(µg)**	**($µg/m^3$)**	**(mg/s)**	**(µg)**	**($µg/m^3$)**	**(mg/s)**	**($µg/m^3$)**	**11% O_2 ($µg/m^3$)**	**(mg/s)**
Aluminum (Al)	255	42.2	0.0760	253	38.3	0.0746	248	42.3	0.0739	40.9	46.7	0.0749
Calcium (Ca)	2192	363	0.655	926	140	0.273	857	146	0.256	217	248	0.395
Iron (Fe)	183	30.3	0.0546	203	30.6	0.0597	322	55.0	0.0960	38.6	44.1	0.0701
Lithium (Li)	< 12.0	< 1.99	< 0.00358	< 12.0	< 1.81	< 0.00354	< 12.0	< 2.05	< 0.00358	< 1.95	< 2.23	< 0.00357
Magnesium (Mg)	114	18.9	0.0342	92.1	13.9	0.0272	105	17.9	0.0313	16.9	19.3	0.0309
Silicon (Si)	327	54.2	0.0976	325	49.1	0.0958	400	68.4	0.119	57.2	65.3	0.104
Sodium (Na)	5026	833	1.50	6326	957	1.87	5634	963	1.68	917	1047	1.68
Zinc (Zn)	1063	176	0.317	1051	159	0.310	782	134	0.234	156.0	178	0.287
Antimony (Sb)	< 9.40	< 1.56	< 0.00281	< 9.40	< 1.42	< 0.00277	< 9.40	< 1.61	< 0.00281	< 1.53	< 1.75	< 0.00280
Arsenic (As)	< 2.80	< 0.464	< 0.000836	< 2.80	< 0.423	< 0.000826	< 2.80	< 0.478	< 0.000836	< 0.455	< 0.520	< 0.000833
Barium (Ba)	29.3	4.85	0.00875	31.3	4.73	0.00923	29.3	5.01	0.00875	4.86	5.55	0.00891
Beryllium (Be)	< 0.630	< 0.104	< 0.000188	< 0.630	< 0.0953	< 0.000186	< 0.630	< 0.108	< 0.000188	< 0.102	< 0.117	< 0.000187
Boron (B)	< 190	< 31.5	< 0.0567	< 190	< 28.7	< 0.0560	< 190	< 32.5	< 0.0567	< 30.9	< 35.3	< 0.0565
Cadmium (Cd)	0.640	0.106	0.000191	4.31	0.652	0.00127	< 0.630	< 0.108	< 0.000188	< 0.288	< 0.329	< 0.000550
Chromium (Cr)	< 10.5	< 1.74	< 0.00314	< 10.50	< 1.59	< 0.00310	11.7	2.00	0.00349	< 1.78	< 2.03	< 0.00324
Cobalt (Co)	< 0.630	< 0.104	< 0.000188	< 0.630	< 0.0953	< 0.000186	< 0.630	< 0.108	< 0.000188	< 0.1020	< 0.117	< 0.000187
Copper (Cu)	42.1	6.97	0.0126	30.6	4.62	0.00901	30.9	5.28	0.00922	5.62	6.42	0.0103
Lead (Pb)	8.53	1.41	0.00255	22.4	3.38	0.00659	18.4	3.14	0.00549	2.65	3.03	0.00488
Manganese (Mn)	8.09	1.34	0.00242	6.45	0.975	0.00190	6.08	1.04	0.00182	1.12	1.28	0.00204
Molybdenum (Mo)	25.7	4.26	0.00767	25.3	3.83	0.00746	27.2	4.65	0.00812	4.24	4.84	0.00775
Nickel (Ni)	7.38	1.22	0.00220	9.19	1.39	0.00271	9.85	1.68	0.00294	1.43	1.63	0.00262
Phosphorus (P)	< 315	< 52.2	< 0.0941	< 315	< 47.6	< 0.0929	< 315	< 53.8	< 0.0941	< 51.20	< 58.5	< 0.0937
Selenium (Se)	< 7.00	< 1.16	< 0.00209	< 7.00	< 1.06	< 0.00206	< 7.00	< 1.20	< 0.00209	< 1.14	< 1.30	< 0.00208
Silver (Ag)	5.60	0.928	0.00167	11.2	1.69	0.00329	5.16	0.882	0.00154	1.170	1.34	0.00217
Strontium (Sr)	6.35	1.05	0.00190	< 3.15	< 0.476	< 0.000929	< 3.15	< 0.538	< 0.000941	< 0.689	< 0.787	< 0.00126
Tin (Sn)	54.5	9.03	0.0163	63.8	9.65	0.0188	79.4	13.6	0.0237	10.7	12.2	0.0196
Titanium (Ti)	41.0	6.79	0.0122	34.3	5.19	0.0101	33.4	5.71	0.00997	5.90	6.74	0.0108
Vanadium (V)	< 2.10	< 0.348	< 0.000627	< 2.10	< 0.318	< 0.000619	< 2.10	< 0.359	< 0.000627	< 0.341	< 0.390	< 0.000624
Mercury	**(µg)**	**($µg/m^3$)**	**(mg/s)**	**(µg)**	**($µg/m^3$)**	**(mg/s)**	**(µg)**	**($µg/m^3$)**	**(mg/s)**	**($µg/m^3$)**	**11% O_2 ($µg/m^3$)**	**(mg/s)**
Filterable Hg	5.64	-	-	13.8	-	-	24.2	-	-	-	-	-
Non-Filterable Hg	34.6	-	-	50.6	-	-	20.0	-	-	-	-	-
Total Hg	40.3	6.67	0.0120	64.4	9.74	0.0190	44.1	7.54	0.0132	7.98	9.12	0.0147

Notes :
[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3 kPa and 25 °C)
***'<'** indicates that laboratory results were below the detection limit. The Reportable Detection Limit (RDL) was used to calculate the concentration and emission rate.*
Concentration and Emission Rate has been reported to 3 significant figures.

Particulate Matter and Metals Sampling
Incinerator

Facility: Stericycle ULC				**Operator:** OO/SRR	
City: Brampton				**Entered by:** BRS	
Source: Incinerator				**Checked by:** MOS	
Reference Method: OSTC Method 5/29					
DATA INPUTS	**Symbol**	**Units**	**Test #1** TPM/Metals	**Test #2** TPM/Metals	**Test #3** TPM/Metals
Date			15-Jun-22	16-Jun-22	17-Jun-22
Start Time			9:18 AM	8:58 AM	8:36 AM
End Time			2:58 PM	4:16 PM	2:11 PM
Round Stack, Diameter (Inside)	d_s	in	24	24	24
Standard Temperature	T_s	°F	77	77	77
Standard Pressure	P_s	in.Hg	29.92	29.92	29.92
Nozzle Diameter	D_n	in	0.320	0.320	0.320
Average Stack Temperature	T_s	°F	114	125	122
Average Meter Temperature	T_m	°F	81	81	75
Barometric Pressure	P_{bar}	" Hg	29.96	29.85	29.06
Stack Static Pressure	P_g	" H_2O	0.07	0.07	0.07
Average Delta H	dH	" H_2O	1.37	1.35	1.07
Average Velocity Head (root mean square)	dP_{rms}	" H_2O	0.16	0.20	0.16
Pitot Coefficient	C_p	-	0.827	0.827	0.827
	Pitot ID :		RWDI 4ft #4		
Gas Sample Volume	V_m	ft^3	217.36	239.04	215.00
DGM Calibration Factor	Y	-	0.9843	0.9843	0.9843
	DGM ID:		Console G		
Total Sampling Time	min	minutes	320	320	320
Stack Gas Oxygen Concentration	O_2	%	12.2	12.6	11.9
Stack Gas Carbon Dioxide Concentration	CO_2	%	5.7	5.4	6.1
Impinger Gain	W_w	g	185.8	317.4	269.2

Particulate Matter and Metals Sampling

Facility:	Stericycle ULC	**Operator:**	OO/SRR
City:	Brampton	**Entered by:**	BRS
Source:	Incinerator	**Checked by:**	MOS
Reference Method:	OSTC Method 5/29		

Emissions Calculations	**Symbol**	**Units**	**Test #1** TPM / Metals	**Test #2** TPM / Metals	**Test #3** TPM / Metals	**AVERAGE** TPM / Metals
Nozzle Area	A_n	ft²	5.59E-04	5.59E-04	5.59E-04	
Stack Area	A_s	ft²	3.14	3.14	3.14	
Average Stack Temperature	T_s	°R	574	585	582	581
Average DGM Temperature	T_m	°R	541	541	535	
Sample Volume at Reference Conditions	V_{mStd}	ft³	213.32	233.67	206.77	
	V_{mmstd}	**m³**	**6.04**	**6.61**	**5.85**	
Vol. of Water Vapour	V_{wStd}	ft³	8.92	15.24	12.92	
Water Fraction	B_{ws}		4.0%	6.1%	5.9%	5.3%
Molecular Weight, dry	M_d	g/mole	29.52	29.48	29.57	29.52
Molecular Weight, wet	M_w	g/mole	29.05	28.78	28.89	28.91
Absolute Stack Pressure	P_s	in. Hg	29.97	29.86	29.07	29.63
Stack Gas Velocity	U_s	ft/s	22.55	25.50	23.30	23.79
	U_{sm}	**m/s**	**6.87**	**7.77**	**7.10**	7.25
Actual Gas Flow Rate	Q_{act}	acf/min	4,251	4,807	4,392	4,483
Dry Gas Flow Rate (dry, ref)	Q_{ref}	dscf/min	3,821	4,133	3,703	3,886
	Q_{mref}	**m³/min**	**108**	**117**	**105**	110
	Qmref (Actual O_2)	**m³/s**	**1.80**	**1.95**	**1.75**	1.83
Isokinetic Rate	I	%	98	100	98	99

Particulate Matter and Metals Sampling

Facility: Stericycle ULC
City: Brampton
Source: Incinerator
Reference Method: OSTC Method 5/29
Run: Metals Test #1

Operator: OO/SRR
Entered by: BRS
Checked by: MOS
Test Date: 15-Jun-22

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Meter Volume (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Box Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 1 - North												
Pre-Test Leak Check =		<0.02 @ 10" Hg										
1	0	0.15	1.40	654.19	112	250	250	65	83	-2	98	22.16
	2.5	0.15	1.40	655.87	112	250	249	65	83	-2	99	22.16
	5	0.15	1.40	657.56	110	250	250	62	83	-2	99	22.12
	7.5	0.11	1.00	659.25	119	250	250	60	83	-2	99	19.09
	10	0.11	1.00	660.70	122	250	250	58	82	-2	98	19.14
	12.5	0.11	1.00	662.13	111	250	249	58	82	-2	98	18.96
	15	0.15	1.30	663.57	110	250	251	58	82	-2	99	22.12
	17.5	0.15	1.30	665.26	111	250	249	57	82	-2	98	22.14
2	20	0.15	1.30	666.94	112	250	249	57	82	-2	98	22.16
	22.5	0.15	1.30	668.61	112	250	250	57	82	-2	97	22.16
	25	0.15	1.30	670.27	112	250	250	57	82	-2	98	22.16
	27.5	0.15	1.30	671.94	112	250	250	57	82	-2	98	22.16
	30	0.15	1.30	673.62	112	250	249	56	82	-2	97	22.16
	32.5	0.15	1.30	675.28	112	250	250	56	82	-2	98	22.16
	35	0.15	1.30	676.96	113	249	250	58	83	-2	98	22.18
	37.5	0.15	1.30	678.63	113	250	250	58	83	-2	98	22.18
3	40	0.13	1.10	680.31	113	250	250	59	83	-2	98	20.65
	42.5	0.13	1.10	681.88	113	249	250	59	83	-2	97	20.65
	45	0.13	1.10	683.42	113	249	249	59	84	-2	97	20.65
	47.5	0.13	1.10	684.97	113	247	251	60	84	-2	98	20.65
	50	0.13	1.10	686.53	113	250	252	60	84	-2	97	20.65
	52.5	0.13	1.10	688.08	113	251	250	60	84	-2	98	20.65
	55	0.13	1.10	689.64	113	251	250	62	84	-2	98	20.65
	57.5	0.13	1.10	691.20	113	249	252	61	84	-2	98	20.65
4	60	0.15	1.30	692.76	113	249	252	60	84	-2	97	22.18
	62.5	0.15	1.30	694.42	113	252	252	60	84	-2	98	22.18
	65	0.15	1.30	696.10	113	250	250	58	84	-2	98	22.18
	67.5	0.15	1.30	697.78	113	250	249	58	84	-2	96	22.18
	70	0.15	1.30	699.42	113	251	251	57	84	-2	97	22.18
	72.5	0.15	1.30	701.08	113	251	250	57	84	-2	98	22.18
	75	0.15	1.30	702.76	113	250	249	57	84	-2	97	22.18
	77.5	0.15	1.30	704.42	113	252	250	57	84	-2	97	22.18
5	80	0.11	1.00	706.09	114	251	250	57	86	-2	100	19.01
	82.5	0.11	1.00	707.56	114	251	250	57	86	-2	99	19.01
	85	0.11	1.00	709.02	114	250	249	57	86	-2	100	19.01
	87.5	0.11	1.00	710.49	114	248	250	57	86	-2	99	19.01
	90	0.11	1.00	711.95	114	248	250	57	86	-2	99	19.01
	92.5	0.15	1.30	713.41	115	250	250	58	86	-2	96	22.22
	95	0.15	1.30	715.06	115	249	250	58	87	-2	98	22.22
	97.5	0.15	1.30	716.74	115	250	249	58	87	-2	97	22.22
6	100	0.15	1.30	718.41	115	250	250	59	87	-2	99	22.22
	102.5	0.15	1.30	720.12	115	251	249	59	87	-2	99	22.22
	105	0.15	1.30	721.82	115	250	250	59	87	-2	98	22.22
	107.5	0.15	1.30	723.51	115	250	250	59	87	-2	98	22.22
	110	0.15	1.30	725.19	115	250	250	59	87	-2	96	22.22
	112.5	0.15	1.30	726.85	115	250	249	60	87	-2	96	22.22
	115	0.15	1.30	728.50	116	250	249	61	87	-2	96	22.24
	117.5	0.15	1.30	730.15	116	250	249	62	87	-2	98	22.24
7	120	0.15	1.30	731.83	116	250	251	62	87	-2	97	22.24
	122.5	0.11	1.00	733.50	116	250	250	62	87	-2	99	19.04
	125	0.11	1.00	734.96	116	250	251	62	87	-2	100	19.04
	127.5	0.11	1.00	736.44	116	250	249	62	87	-2	99	19.04
	130	0.11	1.00	737.90	116	251	250	62	87	-2	100	19.04
	132.5	0.10	0.85	739.38	115	251	250	64	87	-2	99	18.14
	135	0.10	0.85	740.77	116	250	250	64	87	-1	100	18.16
	137.5	0.10	0.85	742.18	116	249	250	64	87	-1	99	18.16
8	140	0.10	0.85	743.57	116	250	250	65	86	-1	98	18.16
	142.5	0.10	0.85	744.95	116	251	250	65	86	-1	96	18.16
	145	0.10	0.85	746.30	116	250	251	66	86	-1	97	18.16
	147.5	0.10	0.85	747.66	116	250	250	66	86	-1	98	18.16
	150	0.10	0.85	749.03	116	248	250	66	86	-1	99	18.16
	152.5	0.10	0.85	750.42	116	249	249	66	86	-1	100	18.16
	155	0.10	0.85	751.82	116	249	248	66	84	-1	99	18.16
	157.5	0.10	0.85	753.20	116	251	251	66	84	-1	99	18.16
	160			754.59								

Facility: Stericycle ULC
City: Brampton
Source: Incinerator
Reference Method: OSTC Method 5/29
Run: Metals Test #1

Operator: OO/SRR
Entered by: BRS
Checked by: MOS
Test Date: 15-Jun-22

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Meter Volume (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Box Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 2 - West												
1	0	0.17	1.50	754.59	114	249	250	61	81	-2	98	23.63
	2.5	0.17	1.50	756.36	114	249	250	62	81	-2	97	23.63
	5	0.17	1.50	758.12	113	251	249	62	81	-2	97	23.61
	7.5	0.17	1.50	759.88	113	250	249	62	81	-2	99	23.61
	10	0.17	1.50	761.67	113	250	250	62	81	-2	98	23.61
	12.5	0.17	1.50	763.45	114	249	251	63	80	-2	98	23.63
	15	0.17	1.50	765.23	113	250	250	65	80	-2	99	23.61
	17.5	0.17	1.50	767.02	113	250	250	65	80	-2	95	23.61
2	20	0.17	1.50	768.74	113	251	249	62	79	-2	97	23.61
	22.5	0.17	1.50	770.49	113	250	250	62	79	-2	97	23.61
	25	0.17	1.50	772.24	114	250	250	60	79	-2	97	23.63
	27.5	0.17	1.50	774.00	114	250	250	60	79	-2	98	23.63
	30	0.17	1.50	775.77	115	251	251	60	78	-2	99	23.65
	32.5	0.17	1.50	777.55	115	250	249	60	78	-2	99	23.65
	35	0.17	1.50	779.33	116	252	249	60	78	-2	99	23.67
	37.5	0.17	1.50	781.11	116	250	249	60	78	-2	98	23.67
3	40	0.22	1.90	782.87	116	250	249	60	78	-3	98	26.93
	42.5	0.22	1.90	784.87	117	250	251	60	78	-3	98	26.95
	45	0.22	1.90	786.87	117	249	249	60	78	-3	97	26.95
	47.5	0.22	1.90	788.86	116	250	250	59	77	-3	100	26.93
	50	0.22	1.90	790.90	116	250	251	59	77	-3	99	26.93
	52.5	0.22	1.90	792.92	116	250	251	59	77	-3	99	26.93
	55	0.22	1.90	794.95	116	251	250	59	77	-3	97	26.93
	57.5	0.22	1.90	796.94	116	250	249	59	77	-3	97	26.93
4	60	0.15	1.30	798.93	116	250	250	58	77	-3	100	22.24
	62.5	0.15	1.30	800.61	116	251	249	58	77	-3	98	22.24
	65	0.15	1.30	802.27	115	248	250	58	77	-3	99	22.22
	67.5	0.15	1.30	803.94	117	249	252	57	77	-3	98	22.26
	70	0.15	1.30	805.60	116	251	249	57	77	-2	99	22.24
	72.5	0.15	1.30	807.27	116	250	250	57	77	-2	100	22.24
	75	0.15	1.30	808.95	116	248	250	57	76	-2	98	22.24
	77.5	0.15	1.30	810.60	117	250	250	57	76	-2	126	22.26
5	80	0.25	2.20	812.72	117	250	250	62	76	-4	98	28.73
	82.5	0.25	2.20	814.84	117	250	250	62	76	-4	98	28.73
	85	0.25	2.20	816.97	117	250	250	61	76	-4	98	28.73
	87.5	0.25	2.20	819.10	117	250	250	61	76	-4	98	28.73
	90	0.25	2.20	821.22	116	250	250	61	76	-4	99	28.71
	92.5	0.25	2.20	823.37	116	250	250	61	76	-4	100	28.71
	95	0.25	2.20	825.53	116	250	250	61	77	-4	98	28.71
	97.5	0.25	2.20	827.66	116	250	250	61	77	-4	98	28.71
6	100	0.20	1.70	829.79	116	250	250	61	77	-4	97	25.68
	102.5	0.20	1.70	831.68	115	251	250	63	77	-3	99	25.65
	105	0.20	1.70	833.60	115	250	250	63	77	-3	99	25.65
	107.5	0.20	1.70	835.52	115	250	250	63	77	-3	98	25.65
	110	0.20	1.70	837.43	115	250	251	63	77	-3	98	25.65
	112.5	0.20	1.70	839.34	114	249	250	63	77	-3	99	25.63
	115	0.20	1.70	841.28	114	251	249	63	77	-3	99	25.63
	117.5	0.20	1.70	843.21	113	250	250	63	77	-3	98	25.61
7	120	0.15	1.30	845.12	114	250	250	66	77	-3	98	22.20
	122.5	0.15	1.30	846.77	114	251	250	66	77	-3	99	22.20
	125	0.15	1.30	848.44	113	250	250	66	77	-3	98	22.18
	127.5	0.15	1.30	850.10	113	250	250	66	77	-3	97	22.18
	130	0.15	1.30	851.75	113	250	250	66	77	-3	97	22.18
	132.5	0.15	1.30	853.40	113	250	250	66	77	-3	97	22.18
	135	0.15	1.30	855.04	112	249	251	66	77	-3	98	22.16
	137.5	0.15	1.30	856.70	112	249	250	66	77	-3	99	22.16
8	140	0.15	1.30	858.37	112	249	250	66	77	-3	97	22.16
	142.5	0.15	1.30	860.01	113	249	251	66	77	-3	99	22.18
	145	0.15	1.30	861.68	113	250	250	66	77	-3	97	22.18
	147.5	0.15	1.30	863.32	113	250	250	66	77	-3	97	22.18
	150	0.15	1.30	864.97	113	250	250	66	77	-3	97	22.18
	152.5	0.15	1.30	866.61	113	251	250	64	77	-3	97	22.18
	155	0.15	1.30	868.25	113	250	251	64	77	-3	97	22.18
	157.5	0.15	1.30	869.90	113	250	251	64	77	-3	97	22.18
	160			871.55								
Post-test Leak Check =		< 0.02 @ 10" Hg										
	Average	0.16	1.37	217.36	114	250	250	61	81	-	98	22.55

Particulate Matter and Metals Sampling

Facility: Stericycle ULC							**Operator:** SRR					
City: Brampton							**Entered by:** BRS					
Source: Incinerator							**Checked by:** MOS					
Reference Method: OSTC Method 5/29							**Test Date:** 16-Jun-22					
Run: Metals Test #2												
Pt.	**Time** (min)	**Velocity Press.** ("H_2O)	**Orifice Press.** ("H_2O)	**Meter Volume** (ft^3)	**Stack Temp** (^oF)	**Probe Temp** (^oF)	**Box Temp** (^oF)	**Imp Temp** (^oF)	**Meter Temp** (^oF)	**Vac Pressure** ("Hg)	**Percentage Isokinetic** (%)	**Stack Velocity (ft/sec)**
Traverse 1 - West												
Pre-Test Leak Check =		<0.02 @ 9" Hg										
1	0	0.27	1.84	871.88	121	250	250	68	84	-3	98	30.16
	2.5	0.28	1.91	874.08	121	250	250	68	84	-3	94	30.71
	5	0.27	1.84	876.23	124	250	250	68	84	-3	99	30.24
	7.5	0.27	1.84	878.45	124	250	250	68	84	-3	99	30.24
	10	0.28	1.91	880.67	124	250	250	68	84	-3	102	30.79
	12.5	0.30	2.05	883.00	126	250	250	68	83	-3	102	31.93
	15	0.32	2.18	885.39	126	250	250	68	83	-3	96	32.97
	17.5	0.32	2.18	887.72	126	250	250	68	83	-3	99	32.97
2	20	0.31	2.12	890.13	125	250	250	67	83	-3	100	32.43
	22.5	0.31	2.12	892.52	125	250	250	67	83	-3	96	32.43
	25	0.32	2.18	894.82	125	250	250	67	83	-3	98	32.95
	27.5	0.32	2.18	897.19	125	250	250	66	83	-3	100	32.95
	30	0.33	2.25	899.61	125	250	250	65	83	-3	97	33.46
	32.5	0.33	2.25	902.01	125	250	250	65	83	-3	94	33.46
	35	0.30	2.05	904.34	125	250	250	64	83	-3	97	31.90
	37.5	0.29	1.98	906.63	125	250	250	64	83	-3	100	31.36
3	40	0.29	1.98	908.95	125	250	250	64	83	-3	100	31.36
	42.5	0.29	1.98	911.26	125	250	250	64	83	-3	100	31.36
	45	0.29	1.98	913.58	127	250	250	64	83	-3	99	31.42
	47.5	0.30	2.05	915.86	127	250	250	64	83	-3	98	31.95
	50	0.30	2.05	918.17	127	250	250	64	83	-3	97	31.95
	52.5	0.31	2.12	920.45	127	250	250	64	83	-3	98	32.48
	55	0.29	1.98	922.80	127	250	250	64	83	-3	93	31.42
	57.5	0.29	1.98	924.96	127	250	250	64	83	-3	98	31.42
4	60	0.26	1.77	927.23	127	250	250	64	83	-3	98	29.75
	62.5	0.25	1.71	929.38	127	250	250	66	83	-3	101	29.17
	65	0.25	1.71	931.55	127	250	250	66	83	-3	101	29.17
	67.5	0.25	1.71	933.72	127	250	250	67	83	-3	100	29.17
	70	0.25	1.71	935.87	127	250	250	67	83	-3	100	29.17
	72.5	0.25	1.71	938.02	127	250	250	67	83	-3	100	29.17
	75	0.26	1.71	940.16	127	250	250	67	84	-3	98	29.75
	77.5	0.25	1.71	942.31	127	250	250	67	84	-3	101	29.17
5	80	0.27	1.84	944.48	127	250	250	67	83	-3	98	30.31
	82.5	0.27	1.84	946.67	126	249	249	67	83	-3	82	30.29
	85	0.14	0.96	948.50	126	249	248	67	83	-3	106	21.81
	87.5	0.14	0.96	950.20	126	249	248	67	83	-3	102	21.81
	90	0.14	0.96	951.84	126	249	248	67	83	-3	101	21.81
	92.5	0.14	0.96	953.46	126	249	248	67	83	-3	99	21.81
	95	0.13	0.89	955.06	126	250	249	67	83	-3	101	21.02
	97.5	0.15	1.02	956.63	126	250	249	67	83	-3	96	22.58
6	100	0.15	1.02	958.23	126	251	249	67	83	-3	98	22.58
	102.5	0.12	0.82	959.87	126	251	249	67	83	-3	108	20.19
	105	0.13	0.89	961.48	126	250	249	67	83	-2	99	21.02
	107.5	0.13	0.89	963.01	126	250	249	67	83	-2	99	21.02
	110	0.12	0.82	964.55	126	250	249	67	83	-2	103	20.19
	112.5	0.11	0.75	966.08	126	250	249	67	83	-2	105	19.33
	115	0.11	0.75	967.58	126	250	249	67	83	-2	100	19.33
	117.5	0.11	0.75	969.01	126	250	248	67	83	-2	97	19.33
7	120	0.10	0.68	970.40	126	250	248	67	83	-2	98	18.43
	122.5	0.12	0.82	971.73	127	250	248	67	83	-2	96	20.21
	125	0.11	0.75	973.16	127	250	248	67	83	-2	102	19.35
	127.5	0.11	0.75	974.61	127	250	248	67	82	-2	97	19.35
	130	0.11	0.75	975.99	125	250	248	66	82	-2	97	19.32
	132.5	0.11	0.75	977.37	126	250	248	66	82	-2	98	19.33
	135	0.11	0.75	978.77	126	249	249	67	83	-2	99	19.33
	137.5	0.11	0.75	980.18	126	249	249	67	83	-2	99	19.33
8	140	0.11	0.75	981.59	125	249	249	67	83	-2	99	19.32
	142.5	0.12	0.82	983.00	125	249	249	67	83	-2	97	20.18
	145	0.10	0.68	984.45	125	250	249	66	82	-2	109	18.42
	147.5	0.11	0.75	985.93	125	250	249	66	82	-2	104	19.32
	150	0.09	0.61	987.42	125	250	249	66	82	-2	105	17.47
	152.5	0.05	0.34	988.78	125	250	250	66	82	-2	127	13.02
	155	0.05	0.34	990.00	125	250	250	66	82	-2	142	13.02
	157.5	0.05	0.34	991.37	125	250	250	66	82	-2	111	13.02
	160			992.44								

Facility: Stericycle ULC
City: Brampton
Source: Incinerator
Reference Method: OSTC Method 5/29
Run: Metals Test #2

Operator: SRR
Entered by: BRS
Checked by: MOS
Test Date: 16-Jun-22

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Meter Volume (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Box Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 2 - North												
1	0	0.12	0.82	992.44	117	250	249	67	83	-2	86	20.04
	2.5	0.13	0.89	993.73	119	250	249	67	83	-2	99	20.89
	5	0.12	0.82	995.28	119	250	249	67	83	-2	105	20.07
	7.5	0.08	0.55	996.85	118	250	248	67	81	-2	110	16.37
	10	0.08	0.55	998.20	117	248	248	67	81	-2	104	16.36
	12.5	0.03	0.20	999.47	117	248	248	67	81	-2	151	10.02
	15	0.10	0.68	1000.60	117	250	248	67	81	-2	96	18.29
	17.5	0.13	0.89	1001.91	117	250	248	67	81	-2	99	20.85
2	20	0.13	0.89	1003.46	117	250	248	67	81	-2	99	20.85
	22.5	0.12	0.82	1005.01	117	250	248	67	81	-2	79	20.04
	25	0.10	0.68	1006.20	117	250	248	67	81	-2	126	18.29
	27.5	0.09	0.61	1007.93	116	250	248	67	81	-2	90	17.34
	30	0.07	0.48	1009.10	129	250	248	67	77	-2	189	15.46
	32.5	0.25	1.71	1011.23	129	250	248	67	77	-2	99	29.22
	35	0.25	1.71	1013.32	129	250	248	67	77	-2	101	29.22
	37.5	0.24	1.60	1015.46	127	250	248	67	77	-2	97	28.58
3	40	0.24	1.60	1017.48	127	250	248	67	77	-2	98	28.58
	42.5	0.20	1.40	1019.51	126	250	248	67	77	-2	97	26.07
	45	0.15	1.00	1021.36	126	250	250	67	77	-2	102	22.58
	47.5	0.16	1.07	1023.05	126	250	253	67	77	-2	95	23.32
	50	0.17	1.13	1024.67	126	251	250	67	77	-2	95	24.03
	52.5	0.19	1.27	1026.33	126	251	249	67	77	-2	92	25.41
	55	0.23	1.53	1028.04	128	251	249	67	77	-2	96	28.00
	57.5	0.25	1.67	1029.99	128	251	246	67	77	-2	93	29.19
4	60	0.26	1.73	1031.97	128	251	246	67	77	-2	95	29.77
	62.5	0.25	1.66	1034.03	127	250	245	67	77	-2	99	29.17
	65	0.25	1.66	1036.13	127	250	243	67	78	-2	97	29.17
	67.5	0.24	1.60	1038.20	127	251	245	67	78	-2	97	28.58
	70	0.27	1.80	1040.23	127	251	244	67	78	-2	94	30.31
	72.5	0.20	1.33	1042.30	127	251	243	67	78	-2	100	26.09
	75	0.21	1.40	1044.21	127	251	243	67	78	-2	96	26.73
	77.5	0.21	1.40	1046.09	127	251	243	67	78	-2	97	26.73
5	80	0.20	1.33	1047.98	127	250	246	67	79	-2.0	100	26.09
	82.5	0.21	1.40	1049.89	127	250	246	67	79	-2.0	98	26.73
	85	0.21	1.40	1051.81	127	250	246	67	79	-2.0	97	26.73
	87.5	0.21	1.40	1053.71	127	250	246	67	79	-2.0	98	26.73
	90	0.24	1.60	1055.62	128	250	246	67	79	-3.0	99	28.61
	92.5	0.25	1.66	1057.68	128	250	246	67	80	-3.0	98	29.19
	95	0.27	1.80	1059.77	129	251	246	67	80	-3.0	105	30.37
	97.5	0.24	1.60	1062.09	129	251	246	67	80	-3.0	92	28.63
6	100	0.24	1.60	1064.02	129	250	246	67	80	-3.0	109	28.63
	102.5	0.25	1.66	1066.29	128	250	246	67	80	-3.0	99	29.19
	105	0.25	1.66	1068.40	128	250	246	67	80	-3.0	99	29.19
	107.5	0.25	1.66	1070.52	128	250	246	67	80	-3.0	57	29.19
	110	0.25	1.66	1071.74	128	250	246	67	80	-3.0	92	29.19
	112.5	0.25	1.66	1073.71	128	250	246	67	80	-3.0	142	29.19
	115	0.25	1.66	1076.73	128	250	246	67	80	-3.0	97	29.19
	117.5	0.20	1.34	1078.80	128	250	246	67	80	-3.0	107	26.11
7	120	0.20	1.34	1080.85	127	250	246	67	80	-3.0	107	26.09
	122.5	0.20	1.34	1082.90	127	250	246	67	81	-3.0	98	26.09
	125	0.20	1.34	1084.78	127	250	246	67	81	-3.0	96	26.09
	127.5	0.20	1.34	1086.61	127	250	246	67	81	-3.0	95	26.09
	130	0.20	1.34	1088.43	125	250	250	67	82	-3.0	94	26.05
	132.5	0.20	1.34	1090.23	123	250	250	67	82	-3.0	95	26.00
	135	0.21	1.40	1092.05	123	251	250	67	81	-3.0	100	26.64
	137.5	0.21	1.40	1094.02	123	251	250	67	81	-3.0	103	26.64
8	140	0.23	1.54	1096.05	123	251	250	67	81	-3.0	103	27.88
	142.5	0.19	1.27	1098.17	122	248	249	67	81	-3.0	99	25.32
	145	0.19	1.27	1100.02	122	248	249	67	82	-3.0	97	25.32
	147.5	0.19	1.27	1101.85	122	248	249	67	82	-3.0	89	25.32
	150	0.19	1.27	1103.53	122	250	250	67	82	-3.0	96	25.32
	152.5	0.19	1.27	1105.33	122	250	250	67	81	-3.0	102	25.32
	155	0.19	1.27	1107.24	122	250	250	67	81	-3.0	98	25.32
	157.5	0.18	1.22	1109.07	122	250	250	67	81	-3.0	101	24.65
	160			1110.92								
Post-test Leak Check =		<0.02 @ 9" Hg										
	Average	0.20	1.35	239.04	125	250	248	67	81	-	100	25.50

Particulate Matter and Metals Sampling

Facility: Stericycle ULC
City: Brampton
Source: Incinerator
Reference Method: OSTC Method 5/29
Run: Metals Test #3

Operator: SRR
Entered by: BRS
Checked by: MOS
Test Date: 17-Jun-22

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Meter Volume (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Box Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 1 - North												
Pre-Test Leak Check =		<0.02 @ 10" Hg										
1	0	0.17	1.16	111.01	116	250	250	67	77	-2	117	24.10
	2.5	0.14	0.95	113.11	116	250	250	67	77	-2	104	21.87
	5	0.14	0.95	114.80	117	250	248	67	77	-2	99	21.89
	7.5	0.14	0.95	116.42	118	251	248	67	77	-2	99	21.91
	10	0.14	0.95	118.03	118	249	248	67	77	-2	99	21.91
	12.5	0.14	0.95	119.64	117	250	248	67	76	-2	98	21.89
	15	0.14	0.95	121.24	118	250	248	67	76	-2	99	21.91
	17.5	0.14	0.95	122.85	117	248	245	67	76	-2	98	21.89
2	20	0.14	0.95	124.45	117	252	253	66	75	-2	99	21.89
	22.5	0.14	0.95	126.05	116	250	247	66	75	-2	98	21.87
	25	0.14	0.95	127.64	118	250	248	65	75	-2	99	21.91
	27.5	0.14	0.95	129.24	118	250	248	65	75	-2	99	21.91
	30	0.14	0.95	130.85	120	249	249	64	75	-2	99	21.95
	32.5	0.14	0.95	132.45	120	249	249	64	75	-2	98	21.95
	35	0.14	0.95	134.04	119	249	249	64	75	-2	98	21.93
	37.5	0.14	0.95	135.62	119	250	249	63	74	-2	99	21.93
3	40	0.14	0.95	137.22	119	251	250	63	74	-2	98	21.93
	42.5	0.14	0.95	138.80	119	251	250	64	75	-2	99	21.93
	45	0.16	1.09	140.41	119	250	250	64	75	-2	94	23.45
	47.5	0.14	0.95	142.03	119	250	250	65	75	-2	99	21.93
	50	0.14	0.95	143.63	119	251	251	65	75	-2	99	21.93
	52.5	0.14	0.95	145.24	119	247	245	65	75	-2	100	21.93
	55	0.14	0.95	146.86	119	251	250	65	75	-2	98	21.93
	57.5	0.14	0.95	148.45	119	250	251	65	75	-2	99	21.93
4	60	0.14	0.95	150.05	119	249	247	66	75	-2	99	21.93
	62.5	0.14	0.95	151.65	119	250	250	66	75	-2	98	21.93
	65	0.14	0.95	153.24	118	252	249	66	75	-2	99	21.91
	67.5	0.14	0.95	154.85	118	251	250	66	75	-2	97	21.91
	70	0.15	1.01	156.43	119	251	250	66	75	-2	100	22.70
	72.5	0.15	1.01	158.10	119	248	246	67	75	-2	101	22.70
	75	0.15	1.01	159.80	119	248	246	67	75	-2	100	22.70
	77.5	0.15	1.01	161.47	120	248	246	67	75	-2	94	22.72
5	80	0.15	1.01	163.05	118	251	249	67	75	-2	101	22.68
	82.5	0.15	1.01	164.74	118	251	249	67	75	-2	100	22.68
	85	0.15	1.01	166.41	118	251	249	67	75	-2	100	22.68
	87.5	0.15	1.01	168.08	118	251	249	67	75	-2	85	22.68
	90	0.11	0.74	169.50	121	251	249	67	75	-2	101	19.47
	92.5	0.15	1.01	170.95	121	251	249	67	75	-2	96	22.74
	95	0.15	1.01	172.56	121	251	249	67	75	-2	102	22.74
	97.5	0.15	1.01	174.26	124	251	249	67	75	-2	93	22.80
6	100	0.15	1.01	175.82	124	251	249	67	75	-2	101	22.80
	102.5	0.15	1.01	177.50	125	252	252	67	75	-2	101	22.82
	105	0.15	1.01	179.19	125	249	248	67	75	-2	97	22.82
	107.5	0.15	1.01	180.8	127	250	249	67	75	-2	102	22.86
	110	0.17	1.15	182.49	126	250	249	67	75	-3	103	24.31
	112.5	0.17	1.15	184.32	125	251	249	67	75	-3	97	24.29
	115	0.17	1.15	186.05	125	251	249	67	75	-3	99	24.29
	117.5	0.17	1.15	187.80	125	251	249	67	75	-3	98	24.29
7	120	0.12	0.81	189.54	124	250	248	67	75	-3	103	20.39
	122.5	0.12	0.81	191.08	123	250	249	67	75	-3	101	20.37
	125	0.13	0.88	192.59	123	250	249	67	75	-3	100	21.21
	127.5	0.13	0.88	194.15	125	250	249	67	75	-2	100	21.24
	130	0.13	0.88	195.70	125	250	249	67	75	-2	99	21.24
	132.5	0.13	0.88	197.23	126	250	250	67	75	-2	99	21.26
	135	0.13	0.88	198.76	125	250	250	67	75	-2	97	21.24
	137.5	0.13	0.88	200.27	127	253	250	67	75	-2	97	21.28
8	140	0.13	0.88	201.78	126	253	251	67	75	-2	101	21.26
	142.5	0.13	0.88	203.35	125	253	251	67	75	-2	97	21.24
	145	0.13	0.88	204.86	125	253	252	67	75	-2	99	21.24
	147.5	0.13	0.88	206.39	126	250	248	67	75	-2	100	21.26
	150	0.13	0.88	207.94	126	249	248	67	75	-2	99	21.26
	152.5	0.13	0.88	209.48	125	249	249	67	75	-2	99	21.24
	155	0.13	0.88	211.01	123	251	249	67	75	-2	100	21.21
	157.5	0.13	0.88	212.56	123	250	249	67	75	-2	98	21.21
	160			214.09								

Facility: Stericycle ULC
City: Brampton
Source: Incinerator
Reference Method: OSTC Method 5/29
Run: Metals Test #3

Operator: SRR
Entered by: BRS
Checked by: MOS
Test Date: 17-Jun-22

Pt.	Time (min)	Velocity Press. ("H_2O)	Orifice Press. ("H_2O)	Meter Volume (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Box Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	Vac Pressure ("Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 2 - West												
1	0	0.45	3.04	214.09	125	251	251	67	75	-4.0	74	39.52
	2.5	0.30	2.03	216.22	125	251	251	62	74	-4.0	99	32.27
	5	0.30	2.03	218.54	125	250	249	62	74	-4.0	99	32.27
	7.5	0.21	2.03	220.87	124	251	249	61	75	-4.0	115	26.98
	10	0.21	1.40	223.14	123	250	250	60	74	-4.0	101	26.95
	12.5	0.21	1.40	225.13	123	250	251	61	75	-4.0	98	26.95
	15	0.21	1.40	227.06	124	250	250	62	75	-4.0	98	26.98
	17.5	0.21	1.40	229.00	124	250	250	62	75	-4.0	98	26.98
2	20	0.21	1.40	230.94	123	250	250	62	75	-4.0	97	26.95
	22.5	0.21	1.40	232.86	122	250	248	63	75	-3	98	26.93
	25	0.21	1.40	234.79	124	250	248	63	75	-3	97	26.98
	27.5	0.21	1.40	236.71	124	250	248	63	75	-3	100	26.98
	30	0.21	1.40	238.69	123	250	249	64	75	-3	98	26.95
	32.5	0.21	1.40	240.62	125	250	249	64	75	-3	99	27.00
	35	0.21	1.40	242.58	125	250	249	65	75	-3	98	27.00
	37.5	0.21	1.40	244.52	123	251	249	65	75	-3	98	26.95
3	40	0.21	1.40	246.46	123	251	249	66	75	-3	96	26.95
	42.5	0.21	1.40	248.36	122	251	250	66	75	-3	99	26.93
	45	0.21	1.40	250.31	122	251	250	67	75	-3	98	26.93
	47.5	0.18	1.20	252.25	124	251	250	67	76	-3	104	24.98
	50	0.18	1.20	254.15	125	252	249	66	75	-3	99	25.00
	52.5	0.18	1.20	255.95	125	251	250	67	75	-3	99	25.00
	55	0.18	1.20	257.76	124	250	249	67	75	-3	98	24.98
	57.5	0.18	1.20	259.55	124	250	249	67	75	-3	99	24.98
4	60	0.18	1.20	261.35	124	251	248	67	75	-3	98	24.98
	62.5	0.18	1.20	263.14	124	251	248	67	75	-3	100	24.98
	65	0.18	1.20	264.97	125	250	249	67	76	-3	91	25.00
	67.5	0.18	1.20	266.63	125	250	249	67	76	-3	95	25.00
	70	0.12	0.80	268.36	125	250	249	67	76	-3	104	20.41
	72.5	0.17	1.13	269.92	125	250	249	67	76	-3	86	24.29
	75	0.17	1.13	271.45	125	250	249	67	76	-3	85	24.29
	77.5	0.17	1.13	272.97	125	250	249	67	75	-3	101	24.29
5	80	0.17	1.13	274.77	125	250	249	67	75	-3.0	96	24.29
	82.5	0.17	1.13	276.47	125	251	249	66	75	-3.0	99	24.29
	85	0.17	1.13	278.23	125	250	249	66	75	-3.0	98	24.29
	87.5	0.17	1.13	279.97	125	249	247	66	75	-3.0	100	24.29
	90	0.18	1.20	281.74	124	249	247	66	75	-3.0	100	24.98
	92.5	0.18	1.20	283.56	125	249	249	65	75	-3.0	99	25.00
	95	0.18	1.20	285.37	125	248	248	65	76	-3.0	98	25.00
	97.5	0.18	1.20	287.17	125	248	248	65	76	-3.0	95	25.00
6	100	0.18	1.20	288.91	125	248	248	65	76	-3.0	97	25.00
	102.5	0.18	1.20	290.69	125	249	248	65	76	-3.0	98	25.00
	105	0.11	0.73	292.49	124	249	248	65	76	-3.0	89	19.52
	107.5	0.11	0.73	293.76	124	251	251	66	76	-3.0	104	19.52
	110	0.11	0.73	295.25	124	250	251	66	76	-3.0	100	19.52
	112.5	0.11	0.73	296.69	121	251	249	67	76	-3.0	93	19.47
	115	0.11	0.73	298.03	124	247	246	67	76	-3.0	94	19.52
	117.5	0.11	0.73	299.38	124	247	246	67	76	-3.0	99	19.52
7	120	0.11	0.73	300.80	124	247	246	67	76	-3.0	98	19.52
	122.5	0.11	0.73	302.20	122	247	246	67	76	-3.0	98	19.49
	125	0.11	0.73	303.61	122	249	247	67	76	-3.0	98	19.49
	127.5	0.11	0.73	305.02	124	249	247	67	76	-3.0	98	19.52
	130	0.15	1.00	306.42	124	249	247	67	76	-3.0	85	22.80
	132.5	0.15	1.00	307.84	123	249	247	63	76	-3.0	100	22.78
	135	0.15	1.00	309.51	123	250	247	59	76	-3.0	102	22.78
	137.5	0.15	1.00	311.21	123	249	248	60	76	-3.0	96	22.78
8	140	0.15	1.00	312.81	122	247	247	60	76	-3.0	99	22.76
	142.5	0.15	1.00	314.47	122	248	248	60	76	-3.0	101	22.76
	145	0.15	1.00	316.16	123	249	249	61	76	-3.0	101	22.78
	147.5	0.15	1.00	317.85	123	250	250	61	76	-3.0	98	22.78
	150	0.15	1.00	319.49	123	251	251	62	76	-3.0	97	22.78
	152.5	0.15	1.00	321.12	123	251	251	62	76	-3.0	96	22.78
	155	0.15	1.00	322.73	123	248	249	64	76	-3.0	97	22.78
	157.5	0.15	1.00	324.36	124	248	249	64	76	-3.0	99	22.80
	160			326.01								
Post-Test Leak Check = <0.02 @ 10" Hg												
	Average	0.16	1.07	215.00	122	250	249	66	75	-	98	23.30

APPENDIX C

Sampling Results - Polycyclic Aromatic Hydrocarbons (PAH's)

Incinerator

Test :	Blank	Test #1			Test #2			Test #3			AVERAGE RESULTS		
Sample Volume (m^3) [1] :	-	6.20			6.51			6.27			6.32		
Stack Flow Rate (m^3/s) [1] :	-	1.84			1.90			1.83			1.86		
Chlorobenzenes	**(µg)**	**Lab Data (µg)**	**Concentration ($µg/m^3$)**	**Emission Rate (µg/s)**	**Lab Data (µg)**	**Concentration ($µg/m^3$)**	**Emission Rate (µg/s)**	**Lab Data (µg)**	**Concentration ($µg/m^3$)**	**Emission Rate (µg/s)**	**Concentration ($µg/m^3$)**	**Concentration @ 11% O_2 ($µg/m^3$)**	**Emission Rate (µg/s)**
1,2,3,4-Tetrachlorobenzene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
1,2,3,5+1,2,4,5-Tetrachlorobenzene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
1,2,3-Trichlorobenzene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
1,2,4-Trichlorobenzene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
1,2-Dichlorobenzene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
1,3,5-Trichlorobenzene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
1,3-Dichlorobenzene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
1,4-Dichlorobenzene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Hexachlorobenzene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Pentachlorobenzene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Phenolics	**(µg)**	**(µg)**	**($µg/m^3$)**	**(µg/s)**	**(µg)**	**($µg/m^3$)**	**(µg/s)**	**(µg)**	**($µg/m^3$)**	**(µg/s)**	**($µg/m^3$)**	**($µg/m^3$)**	**(µg/s)**
2,3,4,5-Tetrachlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2,3,4,6-Tetrachlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2,3,4-Trichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2,3,5,6-Tetrachlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2,3,5-Trichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2,3,6-Trichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2,3-Dichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2,4 + 2,5-Dichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2,4,5-Trichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2,4,6-Trichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2,6-Dichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2-Chlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
3,4,5-Trichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
3,4-Dichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
3,5-Dichlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
3-Chlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
4-Chlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Pentachlorophenol	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Other Chlorinated Organics	**(µg)**	**(µg)**	**($µg/m^3$)**	**(µg/s)**	**(µg)**	**($µg/m^3$)**	**(µg/s)**	**(µg)**	**($µg/m^3$)**	**(µg/s)**	**($µg/m^3$)**	**($µg/m^3$)**	**(µg/s)**
1-Methylnaphthalene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	0.300	0.0479	0.0876	< 0.0475	< 0.0543	< 0.0881
1-Methylphenanthrene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2-Chloronaphthalene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2-Methylanthracene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
2-Methylnaphthalene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	0.360	0.0574	0.105	< 0.0506	< 0.0578	< 0.0940
3-Methylcholanthrene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
7,12-Dimethylbenzo(a)anthracene	< 1.200	< 1.20	< 0.194	< 0.356	< 1.20	< 0.184	< 0.351	< 1.20	< 0.191	< 0.350	< 0.190	< 0.217	< 0.353
9,10-Dimethylanthracene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
9-Methylphenanthrene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Acenaphthene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Acenaphthylene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881

Test :	Blank	Test #1			Test #2			Test #3			AVERAGE RESULTS		
Sample Volume (m^3) [1] :	-	6.20			6.51			6.27			6.32		
Stack Flow Rate (m^3/s) [1] :	-	1.84			1.90			1.83			1.86		
		Lab Data	Concentration	Emission Rate	Lab Data	Concentration	Emission Rate	Lab Data	Concentration	Emission Rate	Concentration	Concentration @ 11% O_2	Emission Rate
Anthracene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Benzo(a)anthracene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Benzo(a)fluorene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Benzo(a)pyrene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Benzo(b)Anthracene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Benzo(b)fluoranthene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Benzo(b)fluorene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Benzo(e)pyrene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Benzo(g,h,i)perylene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Benzo(k)fluoranthene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Biphenyl	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	0.720	0.115	0.210	< 0.0698	< 0.0797	< 0.129
Chrysene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Coronene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Dibenzo(a,h)anthracene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Dibenzo(a,c)anthracene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Dibenzo(a,e)pyrene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Fluoranthene	< 0.300	< 0.300	< 0.0484	< 0.0891	0.300	0.0461	0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Fluorene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Indeno(1,2,3-cd)pyrene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
m-Terphenyl	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Naphthalene	< 0.300	1.02	0.165	0.303	5.58	0.858	1.63	10.4	1.66	3.04	0.894	1.02	1.66
o-Terphenyl	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Perylene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Phenanthrene	< 0.300	< 0.300	< 0.0484	< 0.0891	0.960	0.148	0.281	1.08	0.172	0.315	< 0.123	< 0.141	< 0.228
Picene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
p-Terphenyl	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Pyrene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Quinoline	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Tetralin	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
Triphenylene	< 0.300	< 0.300	< 0.0484	< 0.0891	< 0.300	< 0.0461	< 0.0877	< 0.300	< 0.0479	< 0.0876	< 0.0475	< 0.0543	< 0.0881
	(ng)	(ng)	(ng/m^3)	(ng/s)	(ng)	(ng/m^3)	(ng/s)	(ng)	(ng/m^3)	(ng/s)	(ng/m^3)	(ng/m^3)	(ng/s)
Monochlorobiphenyl	< 0.0190	0.510	0.0823	0.151	1.80	0.277	0.526	3.70	0.590	1.08	0.316	0.361	0.586
Dichlorobiphenyl	< 0.0310	1.20	0.194	0.356	22.0	3.38	6.43	24.0	3.83	7.00	2.47	2.82	4.60
Trichlorobiphenyl	< 0.0750	1.90	0.306	0.564	23.0	3.54	6.72	26.0	4.15	7.59	2.66	3.04	4.96
Tetrachlorobiphenyl	0.120	22.0	3.55	6.53	330	50.7	96.5	350	55.9	102	36.7	41.9	68.4
Pentachlorobiphenyl	0.240	180	29.0	53.5	2300	354	672	2300	367	671	250	286	466
Hexachlorobiphenyl	0.400	150	24.2	44.6	1500	231	439	1600	255	467	170	194	317
Heptachlorobiphenyl	< 0.0520	12.0	1.94	3.56	110	16.9	32.2	110	17.6	32.1	12.1	13.8	22.6
Octachlorobiphenyl	< 0.0620	0.350	0.0565	0.104	9.60	1.48	2.81	9.60	1.53	2.80	1.02	1.17	1.90
Nonachlorobiphenyl	< 0.0630	< 0.100	< 0.0161	< 0.0297	1.70	0.261	0.497	2.00	0.319	0.584	< 0.199	< 0.227	< 0.370
Decachlorobiphenyl	< 0.0560	< 0.140	< 0.0226	< 0.0416	0.250	0.0384	0.0731	0.240	0.0383	0.0700	< 0.0331	< 0.0378	< 0.0616

Notes :

[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3 kPa and 25 °C)

***'<'** indicates that laboratory results were below the detection limit. The detection limit was used to calculate the concentration and emission rate.*

Concentration and Emission Rate has been reported to 3 significant figures.

Sampling Results - Dioxins and Furans

Incinerator

Test : Sample Volume (m^3) [1] : Stack Flow Rate (m^3/s) [1] :	Blank	Test #1 6.20 1.84			Test #2 6.51 1.90			Test #3 6.27 1.83			Average Concentration	Average Conc. @25 °C and 11% O_2	*Reg 419 Toxic Equivalency Factors*		
													TEF	TEF Concentration	TEF Emission Rate
	Lab Data (pg)	Lab Data (pg)	Concentration (pg/m^3)	Emission Rate (pg/s)	Lab Data (pg)	Concentration (pg/m^3)	Emission Rate (pg/s)	Lab Data (pg)	Concentration (pg/m^3)	Emission Rate (pg/s)	(pg/m^3)	(pg/m^3)		(pg TEQ/m^3)	(pg/s)
2,3,7,8-Tetra CDD *	< 8.60	< 11.0	< 1.77	< 3.27	< 11.0	< 1.69	< 3.22	< 9.40	< 1.5	< 2.74	< 1.65	< 1.88	1	< 1.88	< 3.06
1,2,3,7,8-Penta CDD *	< 10.0	< 9.10	< 1.47	< 2.7	< 8.20	< 1.26	< 2.40	< 16.0	< 2.55	< 4.67	< 1.76	< 2.01	1	< 2.01	< 3.27
1,2,3,4,7,8-Hexa CDD *	< 8.20	< 7.70	< 1.24	< 2.29	< 8.60	< 1.32	< 2.51	< 15.0	< 2.39	< 4.38	< 1.65	< 1.88	0.1	< 0.188	< 0.306
1,2,3,6,7,8-Hexa CDD *	< 7.10	< 6.80	< 1.10	< 2.02	< 7.50	< 1.15	< 2.19	< 13.0	< 2.07	< 3.79	< 1.44	< 1.64	0.1	< 0.164	< 0.267
1,2,3,7,8,9-Hexa CDD *	< 7.60	< 7.20	< 1.16	< 2.14	< 8.00	< 1.23	< 2.34	< 13.0	< 2.07	< 3.79	< 1.49	< 1.70	0.1	< 0.170	< 0.277
1,2,3,4,6,7,8-Hepta CDD *	< 7.50	< 9.00	< 1.45	< 2.67	< 6.90	< 1.06	< 2.02	< 10.0	< 1.60	< 2.92	< 1.37	< 1.56	0.01	< 0.0156	< 0.0254
1,2,3,4,6,7,8,9-Octa CDD *	< 8.80	< 12.0	< 1.94	< 3.56	22.0	3.38	6.43	< 18.0	< 2.87	< 5.25	< 2.73	< 3.12	0.0003	< 0.000936	< 0.00152
2,3,7,8-Tetra CDF **	< 9.70	< 9.70	< 1.56	< 2.88	17.0	2.61	4.97	< 8.30	< 1.32	< 2.42	< 1.83	< 2.09	0.1	< 0.209	< 0.340
1,2,3,7,8-Penta CDF **	< 9.10	< 9.70	< 1.56	< 2.88	< 9.90	< 1.52	< 2.89	< 9.80	< 1.56	< 2.86	< 1.55	< 1.77	0.03	< 0.0531	< 0.0863
2,3,4,7,8-Penta CDF **	< 9.00	< 9.60	< 1.55	< 2.85	< 9.90	< 1.52	< 2.89	< 9.70	< 1.55	< 2.83	< 1.54	< 1.76	0.3	< 0.528	< 0.858
1,2,3,4,7,8-Hexa CDF **	< 7.10	< 6.80	< 1.10	< 2.02	< 11.0	< 1.69	< 3.22	< 12.0	< 1.91	< 3.50	< 1.57	< 1.79	0.1	< 0.179	< 0.291
1,2,3,6,7,8-Hexa CDF **	< 6.50	< 6.20	< 1.00	< 1.84	< 9.70	< 1.49	< 2.84	< 11.0	< 1.76	< 3.21	< 1.42	< 1.62	0.1	< 0.162	< 0.264
2,3,4,6,7,8-Hexa CDF **	< 7.40	< 7.10	< 1.15	< 2.11	< 11.0	< 1.69	< 3.22	< 13.0	< 2.07	< 3.79	< 1.64	< 1.87	0.1	< 0.187	< 0.304
1,2,3,7,8,9-Hexa CDF **	< 8.10	< 7.80	< 1.26	< 2.32	< 12.0	< 1.84	< 3.51	< 14.0	< 2.23	< 4.09	< 1.78	< 2.03	0.1	< 0.203	< 0.330
1,2,3,4,6,7,8-Hepta CDF **	< 6.50	< 9.20	< 1.48	< 2.73	< 8.80	< 1.35	< 2.57	< 7.60	< 1.21	< 2.22	< 1.35	< 1.54	0.01	< 0.0154	< 0.0251
1,2,3,4,7,8,9-Hepta CDF **	< 8.20	< 12.0	< 1.94	< 3.56	< 11.0	< 1.69	< 3.22	< 9.50	< 1.52	< 2.77	< 1.71	< 1.95	0.01	< 0.0195	< 0.0317
1,2,3,4,6,7,8,9-Octa CDF **	< 8.40	< 12.0	< 1.94	< 3.56	< 12.0	< 1.84	< 3.51	< 19.0	< 3.03	< 5.55	< 2.27	< 2.59	0.0003	< 0.000778	< 0.00126
	Lab Data (ng)	Lab Data (ng)	Concentration (ng/m^3)	Emission Rate (ng/s)	Lab Data (ng)	Concentration (ng/m^3)	Emission Rate (ng/s)	Lab Data (ng)	Concentration (ng/m^3)	Emission Rate (ng/s)	(ng/m^3)	(ng/m^3)		(pg TEQ/m^3)	(pg/s)
33'44'-TetraCB-(77)	< 0.0660	6.40	1.03	1.90	75.0	11.5	21.9	74.0	11.8	21.6	8.12	9.28	0.0001	0.928	1.51
344'5-TetraCB-(81)	< 0.0620	< 0.160	< 0.0258	< 0.0475	3.20	0.492	0.936	3.40	0.543	0.992	< 0.353	< 0.403	0.0003	< 0.121	< 0.197
233'44'-PentaCB-(105)	< 0.0240	15.0	2.42	4.46	150	23.1	43.9	150	23.9	43.8	16.5	18.8	0.00003	0.565	0.919
2344'5-PentaCB-(114)	< 0.0240	0.940	0.152	0.279	9.60	1.48	2.81	9.20	1.47	2.69	1.03	1.18	0.00003	0.0353	0.0574
23'44'5-PentaCB-(118)	0.130	40.0	6.45	11.9	440	67.6	129	430	68.6	125	47.6	54.4	0.00003	1.63	2.65
23'44'5'-PentaCB-(123)	< 0.0260	0.470	0.0758	0.140	6.00	0.922	1.75	9.30	1.48	2.71	0.827	0.945	0.00003	0.0283	0.0461
33'44'5-PentaCB-(126)	< 0.0230	0.570	0.0919	0.169	3.30	0.507	0.965	3.60	0.574	1.05	0.391	0.447	0.1	44.7	72.6
HexaCB-(156)+(157)	< 0.0360	3.20	0.516	0.951	29.0	4.46	8.48	29.0	4.63	8.46	3.20	3.66	0.00003	0.110	0.178
23'44'55'-HexaCB-(167)	< 0.0350	1.30	0.210	0.386	12.0	1.84	3.51	12.0	1.91	3.50	1.32	1.51	0.00003	0.0452	0.0735
33'44'55'-HexaCB-(169)	< 0.0360	< 0.0410	< 0.00661	< 0.0122	< 0.0580	< 0.00891	< 0.0170	< 0.0600	< 0.00957	< 0.0175	< 0.00837	< 0.00956	0.03	< 0.287	< 0.466
233'44'55'-HeptaCB-(189)	< 0.0480	< 0.0760	< 0.0123	< 0.0226	0.390	0.0599	0.114	0.330	0.0527	0.0963	< 0.0416	< 0.0475	0.00003	< 0.00143	< 0.00232
												Total Toxic Equivalency		**< 54.4**	**< 88.4**

Notes :

[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3 kPa and 25 °C)

***'<'** indicates that laboratory results were below the detection limit. The detection limit was used to calculate the concentration and emission rate.*

Concentration and Emission Rate has been reporte 3 significant figures.

*CDD = chlorodibenzo-*p* -dioxin

**CDF = chlorodibenzo-*p* -furan

***CB = chlorobenzene

Semi-Volatile Organic Compounds Sampling
Stericycle

Facility: Stericycle				**Operator:** HE	
City: Brampton, Ontario				**Entered by:** HE	
Source: Incinerator				**Checked by:** MOS	
Reference Method: Environment Canada 1/RM/2					
DATA INPUTS	**Symbol**	**Units**	**Test #1** SVOC	**Test #2** SVOC	**Test #3** SVOC
Date			15-Jun-22	16-Jun-22	17-Jun-22
Start Time			9:18 AM	8:58 AM	8:36 AM
End Time			2:58 PM	4:16 PM	2:11 PM
Round Stack, Diameter (Inside)	d_s	in	24	24	24
Standard Temperature	T_s	°F	77	77	77
Standard Pressure	P_s	" Hg	29.9	29.9	29.9
Nozzle Diameter	D_n	in	0.320	0.320	0.320
Average Stack Temperature	T_s	°F	115	126	123
Average Meter Temperature	T_m	°F	84	84	80
Barometric Pressure	P_{bar}	" Hg	29.96	29.85	29.06
Stack Static Pressure	P_g	" H_2O	0.07	0.07	0.07
Average Delta H	dH	" H_2O	1.46	1.64	1.59
Average Velocity Head	dP_{rms}	" H_2O	0.16	0.18	0.18
Pitot Coefficient	C_p	-	0.849	0.849	0.849
		Pitot ID ->	Calgary 3' #2		
Gas Sample Volume	V_m	ft³	225.04	236.71	232.61
DGM Calibration Factor	Y	-	0.9814	0.9814	0.9814
		DGM ID ->	Console H		
Total Sampling Time	min	min	320	320	320
Stack Gas Oxygen Concentration	O_2	%	12.2	12.6	11.9
Stack Gas Carbon Dioxide Concentration	CO_2	%	5.7	5.4	6.1
Impinger Gain	W_w	g	183.5	315.8	300.6

Semi-Volatile Organic Compounds Sampling

Facility:	Stericycle	**Operator:**	HE
City:	Brampton, Ontario	**Entered by:**	HE
Source:	Incinerator	**Checked by:**	MOS
Reference Method:	Environment Canada 1/RM/2		

Emissions Calculations	**Symbol**	**Units**	**Test #1** SVOC	**Test #2** SVOC	**Test #3** SVOC	**AVERAGE**
Nozzle Area	A_n	ft²	0.00056	0.00056	0.00056	
Stack Area	A_s	ft²	3.14	3.14	3.14	
Average Stack Temperature	T_s	°R	575	586	583	581
Average DGM Temperature	T_m	°R	544	544	540	
Sample Volume at Reference Conditions	V_{mStd}	ft³	219.08	229.91	221.43	
	V_{mmstd}	**m³**	**6.20**	**6.51**	**6.27**	
Vol. of Water Vapour	V_{wStd}	ft³	8.808	15.1584	14.4288	
Water Fraction	B_{ws}		3.9%	6.2%	6.1%	5.4%
Molecular Weight, dry	M_d	g/mole	29.52	29.48	29.57	29.52
Molecular Weight, wet	M_w	g/mole	29.07	28.77	28.86	28.90
Absolute Stack Pressure	P_s	" Hg	29.97	29.86	29.07	29.63
Stack Gas Velocity	U_s	ft/s	23.01	24.92	24.47	24.13
	U_{sm}	**m/s**	**7.01**	**7.60**	**7.46**	**7.36**
Actual Gas Flow Rate	Q_{act}	acf/min	4,337	4,697	4,613	4,549
Dry Gas Flow Rate (dry, ref)	Q_{ref}	dscf/min	3,903	4,032	3,876	3,937
	Q_{Rm}	m³/min	111	114	110	111
	Qmref (Actual O_2)	**m³/s**	**1.84**	**1.90**	**1.83**	**1.9**
	Qmref (11% O_2)	**m^3/sec**	**1.62**	**1.59**	**1.66**	1.63
Isokinetic Rate	I	%	99	100	101	100

Semi-Volatile Organic Compounds Sampling

Facility:	Stericycle	**Operator:**	HE
City:	Brampton, Ontario	**Entered by:**	HE
Source:	Incinerator	**Checked by:**	MOS
Reference Method:	Environment Canada 1/RM/2	**Date**	15-Jun-22
Run:	Test 1		

Point	Time	Velocity Pressure	Orifice Pressure	Meter Volume	Stack Temp	Probe Temp	Box Temp	Imp Temp	Meter Temp	XAD Trap	Vacuum Pressure	Percentage Isokinetic	Stack Velocity
	(min)	(" H_2O)	(" H_2O)	(ft^3)	(^oF)	(^oF)	(^oF)	(^oF)	(^oF)	(^oF)	(" Hg)	**(%)**	(ft/s)
Traverse 1-North													
Pre-Test Leak Check = <0.02 @ 10" Hg													
1	0	0.10	0.95	0.09	112	250	250	66	83	43	-	98	18.57
	2.5	0.10	0.95	1.50	113	250	246	66	83	43	-2	97	18.58
	5	0.10	0.95	2.90	113	250	249	66	82	43	-2	97	18.58
	7.5	0.10	0.95	4.29	113	250	249	66	82	42	-2	99	18.58
	10	0.10	0.95	5.71	113	250	251	57	82	42	-2	98	18.58
	12.5	0.10	0.95	7.12	113	250	247	57	82	42	-2	97	18.58
	15	0.10	0.95	8.51	113	250	252	57	82	43	-2	100	18.58
	17.5	0.10	0.95	9.95	113	250	249	57	82	43	-2	97	18.58
2	20	0.10	0.95	11.34	114	250	249	57	82	43	-2	99	18.60
	22.5	0.10	0.95	12.76	114	250	250	56	83	44	-2	99	18.60
	25	0.10	0.95	14.18	114	250	250	56	83	44	-2	99	18.60
	27.5	0.10	0.95	15.60	115	250	250	56	83	44	-2	98	18.62
	30	0.10	0.95	17.01	115	250	250	56	82	42	-2	99	18.62
	32.5	0.10	0.95	18.43	115	250	250	56	82	42	-2	99	18.62
	35	0.10	0.95	19.85	115	250	250	56	82	42	-2	99	18.62
	37.5	0.10	0.95	21.27	115	250	250	56	82	43	-2	99	18.62
3	40	0.10	0.95	22.69	113	250	250	57	82	42	-2	97	18.58
	42.5	0.10	0.95	24.09	113	250	250	57	82	43	-2	99	18.58
	45	0.10	0.95	25.51	113	250	250	57	82	42	-2	101	18.58
	47.5	0.10	0.95	26.96	113	250	250	57	82	42	-2	98	18.58
	50	0.10	0.95	28.37	113	250	250	57	82	42	-2	99	18.58
	52.5	0.10	0.95	29.79	113	250	250	57	82	42	-2	99	18.58
	55	0.10	0.95	31.22	113	250	250	57	82	42	-2	99	18.58
	57.5	0.10	0.95	32.65	113	250	250	57	82	42	-2	98	18.58
4	60	0.10	0.95	34.06	113	250	250	57	82	42	-2	99	18.58
	62.5	0.10	0.95	35.48	113	250	250	57	82	42	-2	99	18.58
	65	0.10	0.95	36.90	113	250	250	57	82	42	-2	99	18.58
	67.5	0.10	0.95	38.33	113	250	250	57	84	42	-2	97	18.58
	70	0.10	0.95	39.73	113	250	250	57	85	42	-2	99	18.58
	72.5	0.10	0.95	41.16	113	250	250	57	85	42	-2	99	18.58
	75	0.10	0.95	42.59	113	250	250	57	85	42	-2	99	18.58
	77.5	0.10	0.95	44.02	113	250	250	57	85	42	-2	98	18.58
5	80	0.25	2.35	45.44	113	250	250	57	85	42	-2	98	29.38
	82.5	0.25	2.35	47.68	113	250	250	54	85	42	-2	100	29.38
	85	0.25	2.35	49.95	113	250	250	54	85	42	-2	98	29.38
	87.5	0.25	2.35	52.18	115	250	250	54	85	42	-2	98	29.44
	90	0.25	2.35	54.40	115	250	250	54	85	42	-2	99	29.44
	92.5	0.25	2.35	56.65	115	250	250	54	85	42	-2	99	29.44
	95	0.25	2.35	58.90	115	250	250	54	85	42	-2	99	29.44
	97.5	0.25	2.35	61.15	115	250	250	54	85	42	-2	97	29.44
6	100	0.25	2.35	63.36	115	250	250	54	85	42	-2	99	29.44
	102.5	0.25	2.35	65.61	115	250	250	54	85	43	-2	99	29.44
	105	0.25	2.35	67.86	115	250	250	54	85	43	-2	99	29.44
	107.5	0.25	2.35	70.11	115	250	251	55	85	43	-2	98	29.44
	110	0.25	2.35	72.33	116	250	254	55	90	48	-2	97	29.46
	112.5	0.25	2.35	74.56	115	250	248	60	90	53	-2	99	29.44
	115	0.25	2.35	76.83	115	250	250	60	90	54	-2	98	29.44
	117.5	0.25	2.35	79.08	116	250	251	61	90	58	-2	98	29.46
7	120	0.25	2.35	81.33	116	250	249	61	90	60	-2	100	29.46
	122.5	0.25	2.35	83.62	116	250	250	61	90	60	-2	98	29.46
	125	0.25	2.35	85.87	116	250	250	61	90	60	-2	97	29.46
	127.5	0.25	2.35	88.10	115	250	249	62	90	62	-2	99	29.44
	130	0.25	2.35	90.37	116	250	252	62	90	62	-2	98	29.46
	132.5	0.25	2.35	92.62	116	250	248	62	90	62	-2	99	29.46
	135	0.25	2.35	94.89	116	250	250	62	90	62	-2	101	29.46
	137.5	0.30	2.35	97.20	116	250	250	62	90	62	-2	98	32.27
8	140	0.30	2.35	99.66	116	250	250	60	90	62	-3	97	32.27
	142.5	0.30	2.35	102.11	116	250	250	60	90	62	-3	98	32.27
	145	0.30	2.35	104.58	116	250	250	60	90	62	-3	99	32.27
	147.5	0.30	2.35	107.07	116	250	250	60	90	62	-3	99	32.27
	150	0.30	2.35	109.55	116	250	250	60	90	62	-3	98	32.27
	152.5	0.30	2.35	112.02	116	250	250	60	90	62	-3	99	32.27
	155	0.30	2.35	114.50	116	250	250	60	90	62	-3	103	32.27
	157.5	0.10	0.95	117.10	115	250	250	63	86	44	-3	99	18.62
	160			118.53									

Facility:	Stericycle					**Operator:**	HE						
City:	Brampton, Ontario					**Entered by:**	HE						
Source:	Incinerator					**Checked by:**	MOS						
Reference Method:	Environment Canada 1/RM/2					**Date**	15-Jun-22						
Run:	Test 1												

Point	Time	Velocity Pressure	Orifice Pressure	Meter Volume	Stack Temp	Probe Temp	Box Temp	Imp Temp	Meter Temp	XAD Trap	Vacuum Pressure	Percentage Isokinetic	Stack Velocity
	(min)	(" H_2O)	(" H_2O)	(ft^3)	(^oF)	(^oF)	(^oF)	(^oF)	(^oF)	(^oF)	(" Hg)	**(%)**	(ft/s)
Traverse 2- West													
1	0	0.10	0.95	118.53	113	250	249	63	86	44	-2.0	96	18.58
	2.5	0.10	0.95	119.92	113	250	250	63	86	44	-2.0	99	18.58
	5	0.10	0.95	121.35	113	250	250	63	86	43	-2.0	99	18.58
	7.5	0.10	0.95	122.78	113	250	250	63	86	43	-2.0	98	18.58
	10	0.10	0.95	124.20	113	250	251	64	83	43	-2.0	99	18.58
	12.5	0.10	0.95	125.63	113	249	249	63	83	43	-2.0	99	18.58
	15	0.10	0.95	127.06	113	250	249	63	83	43	-2.0	99	18.58
	17.5	0.10	0.95	128.49	113	250	250	63	83	43	-2.0	100	18.58
2	20	0.10	0.95	129.93	114	251	248	64	82	46	-2.0	99	18.60
	22.5	0.10	0.95	131.35	114	250	250	64	82	46	-2.0	99	18.60
	25	0.10	0.95	132.78	114	250	250	62	82	46	-2.0	99	18.60
	27.5	0.10	0.95	134.20	114	250	250	62	82	46	-2.0	99	18.60
	30	0.10	0.95	135.62	116	250	250	62	82	46	-2.0	100	18.63
	32.5	0.10	0.95	137.05	115	250	250	62	82	46	-2.0	100	18.62
	35	0.10	0.95	138.48	115	250	250	62	82	46	-2.0	99	18.62
	37.5	0.15	1.40	139.90	115	250	250	62	82	46	-2.0	96	22.80
3	40	0.15	1.40	141.59	115	250	250	62	82	46	-2.0	100	22.80
	42.5	0.15	1.40	143.34	115	250	250	62	82	46	-2.0	97	22.80
	45	0.15	1.40	145.04	115	250	250	62	82	46	-2.0	97	22.80
	47.5	0.15	1.40	146.75	116	250	249	61	82	50	-2.0	99	22.82
	50	0.15	1.40	148.48	116	250	249	61	82	50	-2.0	98	22.82
	52.5	0.15	1.40	150.20	116	250	250	61	82	52	-2.0	99	22.82
	55	0.15	1.40	151.93	116	250	250	61	82	52	-2.0	100	22.82
	57.5	0.15	1.40	153.69	116	250	250	61	82	52	-2.0	97	22.82
4	60	0.15	1.40	155.40	116	250	250	61	82	52	-2.0	100	22.82
	62.5	0.15	1.40	157.15	117	250	250	61	82	52	-2.0	97	22.84
	65	0.15	1.40	158.85	117	250	250	61	82	52	-2.0	99	22.84
	67.5	0.15	1.40	160.58	117	250	250	61	82	52	-2.0	101	22.84
	70	0.15	1.40	162.35	117	250	250	61	82	52	-2.0	100	22.84
	72.5	0.15	1.40	164.10	117	250	250	61	82	52	-2.0	99	22.84
	75	0.15	1.40	165.84	117	250	250	61	82	52	-2.0	98	22.84
	77.5	0.15	1.40	167.56	118	250	250	61	82	55	-4.0	100	22.86
5	80	0.15	1.40	169.31	118	250	250	61	82	55	-4.0	99	22.86
	82.5	0.15	1.40	171.05	116	250	250	63	82	57	-4.0	100	22.82
	85	0.15	1.40	172.80	116	250	250	63	82	57	-4.0	100	22.82
	87.5	0.15	1.40	174.56	116	250	250	63	82	57	-4.0	100	22.82
	90	0.15	1.40	176.31	116	250	250	63	82	57	-4.0	100	22.82
	92.5	0.15	1.40	178.06	116	250	250	63	82	57	-4.0	99	22.82
	95	0.15	1.40	179.80	116	250	250	63	82	57	-4.0	101	22.82
	97.5	0.15	1.40	181.57	116	250	250	63	82	57	-4.0	98	22.82
6	100	0.15	1.40	183.29	116	250	250	63	82	57	-4.0	100	22.82
	102.5	0.15	1.40	185.04	116	250	250	63	82	59	-4.0	98	22.82
	105	0.15	1.40	186.76	116	250	250	63	85	59	-4.0	99	22.82
	107.5	0.15	1.40	188.51	116	250	250	63	85	59	-4.0	99	22.82
	110	0.15	1.40	190.26	114	250	250	63	85	59	-4.0	99	22.78
	112.5	0.15	1.40	192.01	114	250	250	64	87	59	-4.0	99	22.78
	115	0.15	1.40	193.76	114	250	250	64	82	59	-4.0	101	22.78
	117.5	0.15	1.40	195.54	114	250	250	64	87	59	-4.0	96	22.78
7	120	0.15	1.40	197.24	114	250	250	64	82	60	-4.0	101	22.78
	122.5	0.15	1.40	199.01	114	250	250	62	83	60	-4.0	100	22.78
	125	0.15	1.40	200.78	113	250	250	62	83	60	-4.0	98	22.76
	127.5	0.15	1.40	202.51	113	250	250	62	83	60	-4.0	99	22.76
	130	0.15	1.40	204.25	113	250	250	62	83	60	-4.0	98	22.76
	132.5	0.15	1.40	205.98	113	250	250	62	83	60	-4.0	99	22.76
	135	0.15	1.40	207.72	113	250	250	62	83	60	-4.0	99	22.76
	137.5	0.15	1.40	209.46	113	250	250	62	83	60	-4.0	99	22.76
8	140	0.15	1.40	211.20	113	250	250	62	83	60	-4.0	98	22.76
	142.5	0.15	1.40	212.93	113	250	250	62	83	62	-4.0	100	22.76
	145	0.15	1.40	214.69	113	250	250	62	83	62	-4.0	100	22.76
	147.5	0.15	1.40	216.46	113	250	250	62	83	62	-4.0	97	22.76
	150	0.15	1.40	218.17	113	250	250	62	83	62	-4.0	99	22.76
	152.5	0.15	1.40	219.91	113	250	250	62	83	62	-4.0	99	22.76
	155	0.15	1.40	221.65	113	250	250	62	83	62	-4.0	99	22.76
	157.5	0.15	1.40	223.39	113	250	250	62	83	62	-4.0	99	22.76
	160			225.13									
Post-Test Leak Check = <0.02 @ 10" Hg													
	Average	0.16	1.46	225.04	115	250	250	60	84	51	-	99	23.01

Semi-Volatile Organic Compounds Sampling

Facility:	Stericycle	**Operator:**	HE
City:	Brampton, Ontario	**Entered by:**	HE
Source:	Incinerator	**Checked by:**	MOS
Reference Method:	Environment Canada 1/RM/2	**Date**	16-Jun-22
Run:	Test 2		

Point	Time	Velocity Pressure	Orifice Pressure	Meter Volume	Stack Temp	Probe Temp	Box Temp	Imp Temp	Meter Temp	XAD Trap	Vacuum Pressure	Percentage Isokinetic	Stack Velocity
	(min)	(" H_2O)	(" H_2O)	(ft^3)	(^oF)	(^oF)	(^oF)	(^oF)	(^oF)	(^oF)	(" Hg)	**(%)**	(ft/s)
Traverse 2-North													
Pre-Test Leak Check =		<0.02 @ 10" Hg											
1	0	0.10	0.9	0.14	122	250	252	64	85	61	-	103	18.86
	2.5	0.10	0.9	1.59	124	250	250	64	85	61	-2	99	18.89
	5	0.10	0.9	2.98	123	249	250	64	85	61	-2	99	18.88
	7.5	0.10	0.9	4.38	123	250	250	64	85	61	-2	100	18.88
	10	0.10	0.9	5.79	124	250	250	64	85	61	-2	99	18.89
	12.5	0.10	0.9	7.19	125	250	250	64	85	57	-2	101	18.91
	15	0.10	0.9	8.61	125	250	250	64	85	57	-2	101	18.91
	17.5	0.10	0.9	10.03	125	250	250	64	85	57	-2	99	18.91
2	20	0.10	0.9	11.43	125	250	250	64	85	57	-2	100	18.91
	22.5	0.10	0.9	12.84	125	250	250	64	85	57	-2	99	18.91
	25	0.10	0.9	14.23	125	250	250	64	85	57	-2	102	18.91
	27.5	0.10	0.9	15.66	125	250	250	64	83	57	-2	102	18.91
	30	0.10	0.9	17.09	126	250	250	64	83	57	-2	101	18.93
	32.5	0.10	0.9	18.51	126	250	250	63	83	57	-2	101	18.93
	35	0.10	0.9	19.92	127	250	250	63	83	57	-2	101	18.94
	37.5	0.10	0.9	21.33	127	250	250	63	83	57	-2	101	18.94
3	40	0.15	1.4	22.75	127	250	250	63	83	57	-2	99	23.20
	42.5	0.15	1.4	24.45	127	250	250	63	83	57	-2	104	23.20
	45	0.15	1.4	26.23	127	250	250	63	83	57	-2	100	23.20
	47.5	0.15	1.4	27.95	127	250	250	62	83	55	-2	101	23.20
	50	0.15	1.4	29.68	127	250	250	62	83	55	-2	102	23.20
	52.5	0.15	1.4	31.42	127	250	250	62	83	55	-2	101	23.20
	55	0.15	1.4	33.15	127	250	250	62	83	55	-4	100	23.20
	57.5	0.15	1.4	34.87	127	250	250	62	83	55	-4	101	23.20
4	60	0.15	1.4	36.60	127	250	250	62	83	55	-4	100	23.20
	62.5	0.15	1.4	38.31	128	250	250	62	83	55	-4	101	23.22
	65	0.15	1.4	40.04	128	250	250	62	83	55	-4	100	23.22
	67.5	0.15	1.4	41.75	128	250	250	62	83	55	-4	101	23.22
	70	0.15	1.4	43.48	128	250	250	62	83	55	-4	101	23.22
	72.5	0.15	1.4	45.20	128	250	250	62	83	55	-4	100	23.22
	75	0.15	1.4	46.91	128	250	250	62	83	55	-5	101	23.22
	77.5	0.15	1.4	48.63	128	250	250	62	83	57	-5	101	23.22
5	80	0.15	1.40	50.35	126	250	250	64	85	60	-5	101	23.18
	82.5	0.15	1.40	52.08	126	250	250	64	85	60	-5	100	23.18
	85	0.15	1.40	53.80	126	250	250	64	85	60	-5	99	23.18
	87.5	0.15	1.40	55.51	126	250	250	64	85	60	-5	102	23.18
	90	0.15	1.40	57.26	126	250	250	64	85	60	-5	100	23.18
	92.5	0.15	1.40	58.98	126	250	250	64	85	60	-5	100	23.18
	95	0.15	1.40	60.70	126	250	250	64	85	60	-5	101	23.18
	97.5	0.15	1.40	62.43	126	250	250	64	85	60	-5	101	23.18
6	100	0.20	1.80	64.16	126	250	250	64	85	60	-5	99	26.77
	102.5	0.20	1.80	66.12	126	250	250	64	86	58	-5	100	26.77
	105	0.20	1.80	68.11	127	250	249	64	86	58	-6	100	26.79
	107.5	0.20	1.80	70.09	127	250	250	64	86	58	-6	100	26.79
	110	0.20	1.80	72.07	127	250	250	64	86	58	-6	101	26.79
	112.5	0.20	1.80	74.07	127	250	250	64	86	58	-6	100	26.79
	115	0.20	1.80	76.05	127	250	250	64	86	57	-6	100	26.79
	117.5	0.20	1.80	78.04	127	250	250	64	86	57	-6	100	26.79
7	120	0.20	1.80	80.03	127	250	250	64	86	57	-6	100	26.79
	122.5	0.20	1.80	82.02	127	250	250	64	86	57	-6	100	26.79
	125	0.20	1.80	84.00	125	250	250	64	86	57	-6	99	26.74
	127.5	0.20	1.80	85.98	125	250	250	64	86	57	-6	100	26.74
	130	0.20	1.80	87.98	125	250	250	64	86	57	-6	99	26.74
	132.5	0.20	1.80	89.95	125	250	250	64	87	57	-6	101	26.74
	135	0.20	1.80	91.96	125	250	250	64	87	57	-6	100	26.74
	137.5	0.20	1.80	93.96	125	250	250	64	87	57	-6	101	26.74
8	140	0.20	1.80	95.97	125	250	250	64	87	57	-6	100	26.74
	142.5	0.20	1.80	97.97	125	250	250	64	87	57	-6	100	26.74
	145	0.20	1.80	99.96	125	250	250	64	87	57	-6	100	26.74
	147.5	0.20	1.80	101.95	125	250	250	64	87	57	-6	100	26.74
	150	0.20	1.80	103.94	125	250	250	64	87	57	-6	101	26.74
	152.5	0.20	1.80	105.95	125	250	250	64	87	57	-6	101	26.74
	155	0.20	1.80	107.97	125	250	250	64	87	57	-6	99	26.74
	157.5	0.20	1.80	109.95	125	250	250	64	87	57	-6	101	26.74
	160			111.96									

Facility:	Stericycle	**Operator:**	HE
City:	Brampton, Ontario	**Entered by:**	HE
Source:	Incinerator	**Checked by:**	MOS
Reference Method:	Environment Canada 1/RM/2	**Date**	16-Jun-22
Run:	Test 2		

Point	Time	Velocity Pressure	Orifice Pressure	Meter Volume	Stack Temp	Probe Temp	Box Temp	Imp Temp	Meter Temp	XAD Trap	Vacuum Pressure	Percentage Isokinetic	Stack Velocity
	(min)	(" H_2O)	(" H_2O)	(ft^3)	(^oF)	(^oF)	(^oF)	(^oF)	(^oF)	(^oF)	(" Hg)	**(%)**	(ft/s)
Traverse 2- West													
1	0	0.10	0.90	111.96	120	250	250	64	86	59	-	101	18.83
	2.5	0.10	0.90	113.39	120	250	250	65	86	59	-3	101	18.83
	5	0.10	0.90	114.82	120	250	250	65	86	59	-3	104	18.83
	7.5	0.10	0.90	116.30	120	250	250	65	86	59	-3	99	18.83
	10	0.10	0.90	117.70	120	250	250	65	86	59	-3	99	18.83
	12.5	0.10	0.90	119.10	120	250	250	65	86	59	-3	103	18.83
	15	0.10	0.90	120.56	120	250	250	65	86	59	-3	101	18.83
	17.5	0.10	0.90	121.99	121	250	250	65	84	59	-3	101	18.84
2	20	0.10	0.90	123.41	121	250	250	65	84	59	-3	101	18.84
	22.5	0.10	0.90	124.83	121	250	250	65	84	59	-3	100	18.84
	25	0.10	0.90	126.24	121	250	250	65	84	59	-3	100	18.84
	27.5	0.10	0.90	127.65	121	250	250	65	84	59	-3	103	18.84
	30	0.10	0.90	129.10	128	250	250	65	79	59	-3	99	18.96
	32.5	0.10	0.90	130.48	128	250	249	64	79	59	-3	101	18.96
	35	0.10	0.90	131.88	128	250	250	64	79	59	-3	102	18.96
	37.5	0.10	0.90	133.30	128	250	249	64	79	59	-3	101	18.96
3	40	0.10	0.90	134.70	127	250	248	64	79	58	-4	101	18.94
	42.5	0.10	0.90	136.10	129	250	250	64	79	58	-4	102	18.97
	45	0.10	0.90	137.52	129	250	250	64	79	58	-4	102	18.97
	47.5	0.10	0.90	138.93	128	250	250	64	79	58	-4	101	18.96
	50	0.10	0.90	140.33	128	250	250	64	79	58	-4	101	18.96
	52.5	0.10	0.90	141.73	128	250	250	64	79	58	-4	102	18.96
	55	0.10	0.90	143.15	127	250	249	64	79	58	-4	100	18.94
	57.5	0.10	0.90	144.54	127	250	250	64	79	58	-4	101	18.94
4	60	0.15	1.35	145.94	127	250	250	64	79	58	-4	99	23.20
	62.5	0.15	1.35	147.63	127	250	250	64	79	58	-4	103	23.20
	65	0.15	1.35	149.38	127	250	250	64	79	58	-4	98	23.20
	67.5	0.15	1.35	151.05	127	250	250	64	79	58	-4	102	23.20
	70	0.15	1.35	152.78	127	250	250	64	79	58	-4	100	23.20
	72.5	0.15	1.35	154.48	127	250	250	64	79	58	-4	99	23.20
	75	0.15	1.35	156.16	127	250	250	64	79	58	-4	99	23.20
	77.5	0.15	1.35	157.84	127	250	250	64	79	58	-4	100	23.20
5	80	0.30	2.70	159.54	127	249	251	62	82	56	-8	99	32.81
	82.5	0.30	2.70	161.92	127	250	250	62	82	56	-8	101	32.81
	85	0.30	2.70	164.35	127	250	250	62	82	56	-8	100	32.81
	87.5	0.30	2.70	166.77	129	250	250	62	82	56	-8	100	32.86
	90	0.30	2.70	169.18	129	250	250	62	82	56	-8	99	32.86
	92.5	0.30	2.70	171.57	129	250	250	62	82	56	-8	101	32.86
	95	0.30	2.70	173.99	129	250	250	62	82	56	-8	100	32.86
	97.5	0.30	2.70	176.40	129	250	250	62	82	56	-8	101	32.86
6	100	0.30	2.70	178.82	129	250	250	63	82	56	-8	102	32.86
	102.5	0.30	2.70	181.27	129	250	250	63	82	57	-8	100	32.86
	105	0.30	2.70	183.67	129	250	250	63	82	57	-8	100	32.86
	107.5	0.30	2.70	186.07	129	250	250	63	82	57	-8	100	32.86
	110	0.30	2.70	188.47	129	250	250	62	84	57	-8	99	32.86
	112.5	0.30	2.70	190.87	129	250	250	62	84	57	-8	99	32.86
	115	0.30	2.70	193.25	129	250	252	62	84	57	-8	99	32.86
	117.5	0.30	2.70	195.65	125	250	250	62	84	57	-8	99	32.75
7	120	0.30	2.70	198.05	125	250	251	62	84	57	-8	98	32.75
	122.5	0.30	2.70	200.43	125	250	250	62	84	57	-8	98	32.75
	125	0.30	2.70	202.80	125	250	250	62	84	57	-8	99	32.75
	127.5	0.30	2.70	205.21	123	250	250	62	84	57	-8	100	32.70
	130	0.30	2.70	207.63	123	250	250	61	84	57	-8	101	32.70
	132.5	0.30	2.70	210.08	123	250	250	61	84	57	-8	101	32.70
	135	0.30	2.70	212.53	124	250	250	61	84	57	-8	100	32.72
	137.5	0.30	2.70	214.95	124	250	250	61	84	57	-8	101	32.72
8	140	0.30	2.70	217.40	124	250	250	61	84	57	-8	102	32.72
	142.5	0.30	2.70	219.87	124	250	250	61	84	57	-8	100	32.72
	145	0.30	2.70	222.29	124	250	250	61	84	57	-8	99	32.72
	147.5	0.30	2.70	224.70	124	250	250	61	84	57	-8	99	32.72
	150	0.30	2.70	227.11	124	250	250	61	84	57	-8	100	32.72
	152.5	0.30	2.70	229.54	124	250	250	61	84	57	-8	99	32.72
	155	0.30	2.70	231.95	124	250	250	61	85	57	-8	101	32.72
	157.5	0.30	2.70	234.40	124	250	250	61	85	57	-8	101	32.72
	160			236.85									
Post-Test Leak Check =		<0.01 @ 10" Hg											
	Average	0.18	1.64	236.71	126	250	250	63	84	58	-	100	24.92

Semi-Volatile Organic Compounds Sampling

Facility:	Stericycle	**Operator:**	HE
City:	Brampton, Ontario	**Entered by:**	HE
Source:	Incinerator	**Checked by:**	MOS
Reference Method:	Environment Canada 1/RM/2	**Date**	17-Jun-22
Run:	Test 3		

Point	Time (min)	Velocity Pressure (" H_2O)	Orifice Pressure (" H_2O)	Meter Volume (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Box Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	XAD Trap (^oF)	Vacuum Pressure (" Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 1-North													
Pre-test Leak Check = <0.02 @ 10" Hg													
1	0	0.10	0.90	0.07	119	250	251	62	80	63	-2	99	19.04
	2.5	0.10	0.90	1.47	119	250	248	62	78	63	-2	100	19.04
	5	0.10	0.90	2.89	119	250	250	62	78	63	-2	101	19.04
	7.5	0.10	0.90	4.32	120	250	251	62	78	63	-2	101	19.05
	10	0.10	0.90	5.75	120	250	248	62	78	63	-2	97	19.05
	12.5	0.10	0.90	7.12	120	250	250	62	78	63	-2	101	19.05
	15	0.10	0.90	8.55	120	250	250	62	78	63	-2	99	19.05
	17.5	0.10	0.90	9.95	120	250	250	62	77	63	-2	101	19.05
2	20	0.10	0.90	11.37	119	250	250	62	77	62	-2	101	19.04
	22.5	0.10	0.90	12.80	119	250	249	61	77	61	-2	99	19.04
	25	0.10	0.90	14.20	119	250	251	61	77	61	-2	101	19.04
	27.5	0.10	0.90	15.63	119	250	250	61	77	61	-2	101	19.04
	30	0.10	0.90	17.06	119	250	250	60	77	58	-2	101	19.04
	32.5	0.10	0.90	18.49	120	250	250	60	77	58	-2	101	19.05
	35	0.10	0.90	19.91	120	250	250	60	77	58	-2	101	19.05
	37.5	0.10	0.90	21.34	120	250	250	60	77	58	-2	102	19.05
3	40	0.10	0.90	22.78	120	250	252	60	77	58	-2	99	19.05
	42.5	0.10	0.90	24.18	121	250	249	60	77	58	-2	101	19.07
	45	0.10	0.90	25.61	120	250	249	60	77	58	-2	100	19.05
	47.5	0.10	0.90	27.02	120	250	249	59	77	58	-2	100	19.05
	50	0.10	0.90	28.43	120	250	249	59	77	58	-2	101	19.05
	52.5	0.10	0.90	29.85	120	250	251	59	78	58	-3	99	19.05
	55	0.10	0.90	31.25	120	250	250	59	78	58	-3	99	19.05
	57.5	0.10	0.90	32.65	120	250	250	59	78	58	-3	99	19.05
4	60	0.10	0.90	34.05	119	250	250	59	78	58	-3	101	19.04
	62.5	0.10	0.90	35.48	119	250	250	59	78	58	-3	99	19.04
	65	0.10	0.90	36.88	119	250	250	59	78	58	-3	100	19.04
	67.5	0.10	0.90	38.30	119	250	250	59	78	58	-3	100	19.04
	70	0.10	0.90	39.71	119	250	249	59	78	58	-3	100	19.04
	72.5	0.10	0.90	41.13	119	250	247	59	78	58	-3	99	19.04
	75	0.10	0.90	42.53	119	250	249	59	78	58	-3	98	19.04
	77.5	0.10	0.90	43.91	119	250	249	59	78	58	-3	100	19.04
5	80	0.10	0.90	45.33	119	251	252	61	79	59	-3	102	19.04
	82.5	0.10	0.90	46.77	119	249	247	61	79	59	-3	100	19.04
	85	0.10	0.90	48.19	119	250	250	61	79	59	-3	99	19.04
	87.5	0.10	0.90	49.60	119	250	250	60	79	59	-3	100	19.04
	90	0.10	0.90	51.02	121	250	250	60	79	59	-3	100	19.07
	92.5	0.10	0.90	52.44	121	250	250	60	79	59	-3	100	19.07
	95	0.10	0.90	53.86	121	250	250	60	79	59	-3	100	19.07
	97.5	0.10	0.90	55.28	123	250	250	60	79	59	-3	99	19.10
6	100	0.40	3.65	56.68	124	250	250	60	79	59	-8	100	38.24
	102.5	0.40	3.65	59.49	124	250	250	60	80	59	-8	100	38.24
	105	0.40	3.65	62.30	125	250	250	60	80	60	-8	100	38.27
	107.5	0.40	3.65	65.10	127	250	250	60	80	60	-8	100	38.34
	110	0.40	3.65	67.91	127	250	250	60	80	60	-9	101	38.34
	112.5	0.40	3.65	70.73	124	250	250	60	80	60	-9	100	38.24
	115	0.40	3.65	73.53	124	250	250	60	80	60	-9	100	38.24
	117.5	0.40	3.65	76.35	124	250	250	60	80	60	-7	100	38.24
7	120	0.30	2.70	79.17	126	250	250	60	81	60	-7	100	33.17
	122.5	0.30	2.70	81.60	126	250	250	60	81	60	-7	101	33.17
	125	0.30	2.70	84.06	126	250	250	60	81	60	-7	100	33.17
	127.5	0.30	2.70	86.50	125	250	250	60	81	60	-7	101	33.14
	130	0.30	2.70	88.97	125	250	250	60	81	60	-7	100	33.14
	132.5	0.30	2.70	91.42	125	250	250	60	81	61	-7	100	33.14
	135	0.30	2.70	93.86	125	250	250	60	81	61	-7	100	33.14
	137.5	0.30	2.70	96.30	125	250	250	60	81	61	-7	100	33.14
8	140	0.30	2.70	98.73	125	250	250	60	81	61	-7	101	33.14
	142.5	0.30	2.70	101.19	125	250	250	60	82	60	-7	101	33.14
	145	0.30	2.70	103.65	125	250	250	60	82	60	-7	101	33.14
	147.5	0.30	2.70	106.11	127	250	250	60	82	60	-7	100	33.20
	150	0.30	2.70	108.56	127	250	250	60	82	60	-7	101	33.20
	152.5	0.30	2.70	111.02	123	250	250	60	82	60	-7	100	33.09
	155	0.30	2.70	113.48	123	250	250	61	82	60	-7	101	33.09
	157.5	0.30	2.70	115.95	120	250	250	61	82	60	-7	100	33.00
	160			118.41									

Facility:	Stericycle	**Operator:**	HE
City:	Brampton, Ontario	**Entered by:**	HE
Source:	Incinerator	**Checked by:**	MOS
Reference Method:	Environment Canada 1/RM/2	**Date**	17-Jun-22
Run:	Test 3		

Point	Time (min)	Velocity Pressure (" H_2O)	Orifice Pressure (" H_2O)	Meter Volume (ft^3)	Stack Temp (^oF)	Probe Temp (^oF)	Box Temp (^oF)	Imp Temp (^oF)	Meter Temp (^oF)	XAD Trap (^oF)	Vacuum Pressure (" Hg)	Percentage Isokinetic (%)	Stack Velocity (ft/sec)
Traverse 2-West													
1	0	0.20	1.80	118.46	126	250	250	62	80	60	-6	100	27.09
	2.5	0.20	1.80	120.45	126	250	250	62	80	60	-6	99	27.09
	5	0.20	1.80	122.42	126	250	250	62	80	60	-6	101	27.09
	7.5	0.20	1.80	124.43	126	250	250	62	80	60	-6	101	27.09
	10	0.20	1.80	126.45	125	250	251	61	80	60	-6	100	27.06
	12.5	0.20	1.80	128.45	125	250	250	61	80	60	-6	100	27.06
	15	0.20	1.80	130.44	125	250	251	61	80	60	-6	101	27.06
	17.5	0.20	1.80	132.45	125	250	250	61	80	60	-6	101	27.06
2	20	0.15	1.40	134.47	125	250	250	61	80	60	-6	102	23.44
	22.5	0.15	1.40	136.24	125	250	250	61	80	60	-6	101	23.44
	25	0.15	1.40	137.98	125	250	250	61	80	60	-6	100	23.44
	27.5	0.15	1.40	139.70	125	250	250	61	80	60	-6	100	23.44
	30	0.15	1.40	141.42	125	250	250	60	80	60	-6	102	23.44
	32.5	0.15	1.40	143.19	125	250	249	60	80	60	-6	101	23.44
	35	0.15	1.40	144.93	125	250	249	60	80	60	-6	101	23.44
	37.5	0.15	1.40	146.68	125	250	252	60	81	60	-6	101	23.44
3	40	0.10	0.90	148.42	122	249	249	60	81	60	-4	101	19.09
	42.5	0.10	0.90	149.85	123	251	250	60	81	60	-4	101	19.10
	45	0.10	0.90	151.28	123	251	250	60	81	60	-4	101	19.10
	47.5	0.10	0.90	152.71	123	251	250	61	81	60	-4	102	19.10
	50	0.10	0.90	154.15	123	250	250	61	81	60	-4	102	19.10
	52.5	0.10	0.90	155.59	123	250	250	61	81	60	-4	101	19.10
	55	0.10	0.90	157.02	123	250	250	61	81	60	-4	102	19.10
	57.5	0.10	0.90	158.46	123	250	250	61	81	60	-4	101	19.10
4	60	0.15	1.40	159.89	123	250	250	61	81	60	-4	99	23.40
	62.5	0.15	1.40	161.60	123	250	250	61	81	60	-4	102	23.40
	65	0.15	1.40	163.36	123	250	250	61	81	60	-4	99	23.40
	67.5	0.15	1.40	165.08	123	250	250	61	81	60	-4	104	23.40
	70	0.15	1.40	166.88	123	250	250	61	81	60	-4	98	23.40
	72.5	0.15	1.40	168.58	123	250	250	61	81	60	-4	99	23.40
	75	0.15	1.40	170.30	123	250	250	61	81	60	-4	101	23.40
	77.5	0.15	1.40	172.05	123	250	250	61	81	60	-4	101	23.40
5	80	0.25	2.30	173.80	125	250	250	63	80	59	-6	102	30.26
	82.5	0.25	2.30	176.06	125	250	250	63	80	59	-6	101	30.26
	85	0.25	2.30	178.30	125	250	250	63	80	59	-6	102	30.26
	87.5	0.25	2.30	180.58	125	250	250	63	80	59	-6	101	30.26
	90	0.25	2.30	182.82	125	250	250	63	80	59	-6	100	30.26
	92.5	0.25	2.30	185.05	125	250	250	63	80	59	-6	102	30.26
	95	0.25	2.30	187.31	125	250	250	61	80	59	-6	102	30.26
	97.5	0.25	2.30	189.57	125	250	250	61	80	59	-6	102	30.26
6	100	0.25	2.30	191.83	125	250	250	61	80	59	-6	102	30.26
	102.5	0.25	2.30	194.09	125	250	250	61	80	59	-6	102	30.26
	105	0.25	2.30	196.35	125	250	250	61	80	59	-6	101	30.26
	107.5	0.25	2.30	198.60	125	250	250	61	80	59	-6	102	30.26
	110	0.25	2.30	200.86	125	250	250	61	80	59	-6	102	30.26
	112.5	0.25	2.30	203.13	125	250	250	62	82	59	-6	101	30.26
	115	0.25	2.30	205.39	124	250	250	62	82	59	-6	101	30.23
	117.5	0.25	2.30	207.65	124	250	250	62	82	59	-6	101	30.23
7	120	0.10	0.90	209.91	123	250	250	62	82	59	-6	103	19.10
	122.5	0.10	0.90	211.37	123	250	251	62	82	60	-6	99	19.10
	125	0.10	0.90	212.78	123	250	248	62	82	60	-5	108	19.10
	127.5	0.10	0.90	214.31	123	250	249	62	82	60	-5	94	19.10
	130	0.10	0.90	215.64	123	250	250	62	82	60	-5	99	19.10
	132.5	0.10	0.90	217.05	124	250	251	62	82	60	-5	99	19.12
	135	0.10	0.90	218.46	124	250	249	62	82	60	-4	100	19.12
	137.5	0.10	0.90	219.88	124	250	250	62	82	60	-4	101	19.12
8	140	0.10	0.90	221.31	124	250	250	62	82	60	-4	101	19.12
	142.5	0.10	0.90	222.74	124	250	250	62	82	60	-4	101	19.12
	145	0.10	0.90	224.18	124	250	250	62	82	60	-4	101	19.12
	147.5	0.10	0.90	225.62	122	250	250	62	82	60	-4	101	19.09
	150	0.10	0.90	227.05	123	250	249	62	82	60	-4	99	19.10
	152.5	0.10	0.90	228.46	123	250	249	62	82	60	-4	99	19.10
	155	0.10	0.90	229.87	123	250	249	62	82	60	-4	101	19.10
	157.5	0.10	0.90	231.30	123	250	249	62	82	60	-4	101	19.10
	160			232.73									
Post-test Leak Check = < 0.02 @8" Hg													
		0.18	1.59	232.61	123	250	250	61	80	60	-	101	24.47

APPENDIX D

Hydrogen Halides & Halides Sampling

Incinerator

Sample ID :	BLANK	Test #1 M26- T1			Test #2 M26- T2			Test #3 M26- T3			Average		
Sampling Date :		June 15, 2022			June 16, 2022			June 17, 2022			-		
Sampling Times :		9:20 - 10:20			9:00 - 10:00			8:40 - 9:40			-		
Sample Volume[1] :	Rm^3	0.061			0.060			0.059			0.060		
Stack Flow Rate[1], [2]	Rm^3/s	1.85			1.85			1.85			1.85		
		Mass (µg)	Conc (mg/m^3)	Emission Rate (mg/s)	Mass (µg)	Conc (mg/m^3)	Emission Rate (mg/s)	Mass (µg)	Conc (mg/m^3)	Emission Rate (mg/s)	Conc (mg/m^3)	Conc @ 11% O_2 (mg/m^3)	Emission Rate (mg/s)
Ammonia (NH_3)	<9.3	8.97	0.148	0.273	41.6	0.698	1.29	39.7	0.672	1.24	0.506	0.578	0.934
Hydrochloric Acid	74	270	4.45	8.21	240	4.03	7.44	360	6.10	11.3	4.86	5.55	8.97
Hydrofluoric Acid	<30	< 30.0	< 0.494	< 0.912	< 30.0	< 0.504	< 0.929	79.0	1.339	2.47	< 0.779	< 0.890	< 1.44

Notes: [1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3kPa, 25°C)

[2] Average of the measured volumetric flow rates from isokinetic testing

Values following < indicate that the laboratory results were below the reportable detection limit. This detection limit was used to calculate the concentration and emission rate.

Hydrogen Halides & Halides Sampling
(Method 26)

Facility:	Stericycle	**Operator:**	MOS
City:	Brampton, Ontario	**Entered by:**	MOS
Source:	Incinerator	**Checked by:**	OO
Run:	Test #1	**Test Date:**	June 15, 2022
Method:	Method 26	**PBar:**	30.0
		DGM Y:	1.004

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oC)	**Vacuum** (in Hg)	**Condenser Temp** (°C)	**Sampling Rate** (L/min)
9:20 - 10:20				Pre-test Leak Check: ✓		
0	2.0	0.00	25	-2	7	-
5	2.0	5.31	25	-2	7	1.1
10	2.0	9.89	25	-2	7	0.9
15	2.0	14.92	25	-2	7	1.0
20	2.0	20.11	25	-2	7	1.0
25	2.0	25.05	25	-2	7	1.0
30	2.0	30.06	25	-2	7	1.0
35	2.0	35.11	25	-2	7	1.0
40	2.0	40.13	25	-2	7	1.0
45	2.0	45.13	25	-2	7	1.0
50	2.0	50.09	25	-2	7	1.0
55	2.0	55.04	25	-2	7	1.0
60	2.0	60.05	25	-2	7	1.0
				Post-test Leak Check: ✓		
Average	2.0		25	-2.0		1.0
Total Volume Actual (m^3)		0.060				
Total Volume Reference (Rm^3)		**0.061**				

Hydrogen Halides & Halides Sampling
(Method 26)

Facility:	Stericycle	**Operator:**	MOS
City:	Brampton, Ontario	**Entered by:**	MOS
Source:	Incinerator	**Checked by:**	OO
Run:	Test #2	**Test Date:**	June 16, 2022
Method:	Method 26	**PBar:**	29.85
		DGM Y:	1.004

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oC)	**Vacuum** (in Hg)	**Condensor Temp** (°C)	**Sampling Rate** (L/min)
9:00 - 10:00				Pre-test Leak Check: ✓		
0	2.0	0.00	30	-1	9	-
5	2.0	5.09	30	-1	9	1.0
10	2.0	10.11	30	-1	9	1.0
15	2.0	15.20	30	-1	9	1.0
20	2.0	19.99	30	-1	9	1.0
25	2.0	24.89	30	-1	9	1.0
30	2.0	30.08	30	-1	9	1.0
35	2.0	35.11	30	-1	9	1.0
40	2.0	40.12	30	-2	9	1.0
45	2.0	45.20	30	-2	9	1.0
50	2.0	50.13	30	-2	9	1.0
55	2.0	55.13	30	-2	9	1.0
60	2.0	60.13	30	-2	9	1.0
				Post-test Leak Check: ✓		
Average	2.0		30.0	-1.4		1.0
Total Volume Actual (m^3)		0.060				
Total Volume Reference (Rm^3)		**0.060**				

Hydrogen Halides & Halides Sampling
(Method 26)

Facility:	Stericycle	**Operator:**	MOS
City:	Brampton, Ontario	**Entered by:**	MOS
Source:	Incinerator	**Checked by:**	OO
Run:	Test #3	**Test Date:**	June 17, 2022
Method:	Method 26	**PBar:**	29.1
		DGM Y:	1.004

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oC)	**Vacuum** (in Hg)	**Condensor Temp** (°C)	**Sampling Rate** (L/min)
8:40 - 9:40				Pre-test Leak Check: ✓		
0	2.5	0.00	25	-3	9	-
5	2.5	5.13	25	-3	9	1.0
10	2.5	10.18	25	-3	9	1.0
15	2.5	15.19	25	-3	8	1.0
20	2.5	20.04	25	-3	8	1.0
25	2.5	24.98	25	-3	9	1.0
30	2.5	30.09	25	-3	9	1.0
35	2.5	35.00	25	-3	9	1.0
40	2.5	40.08	25	-3	10	1.0
45	2.5	44.91	25	-3	10	1.0
50	2.5	49.93	25	-3	10	1.0
55	2.5	55.18	25	-3	10	1.1
60	2.5	60.096	25	-3	10	1.0
				Post-test Leak Check: ✓		
Average	2.5		25	-3		1.0
Total Volume Actual (m^3)		0.060				
Total Volume Reference (Rm^3)		**0.059**				

APPENDIX E

Volatile Organic Compound Sampling

Incinerator

	Units	Test #1			Test #2			Test #3			Average		
Sampling Date :	-	Jun 15, 22			Jun 16, 22			Jun 17, 22			-		
Sampling Times :	-	10:30 - 11:30			10:05 - 11:05			9:47 - 10:47			-		
Sample Volume[1] :	Rm^3	0.020			0.019			0.019			0.020		
Stack Flow Rate[1], [2]	Rm^3/s	1.85			1.85			1.85			1.85		
		Lab Data (µg)	**Concentration** ($µg/m^3$)	**Emission Rate** (mg/s)	**Lab Data** (µg)	**Concentration** ($µg/m^3$)	**Emission Rate** (mg/s)	**Lab Data** (µg)	**Concentration** ($µg/m^3$)	**Emission Rate** (mg/s)	**Concentration** ($µg/m^3$)	**Conc. corrected to 11% O_2 [3]** ($µg/m^3$)	**Emission Rate** (mg/s)
Dichlorodifluoromethane (FREON 12)		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Vinyl Chloride		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Bromomethane		0.185	9.24	0.0171	0.126	6.51	0.0120	0.0980	5.08	0.00938	6.94	7.93	0.0128
Trichlorofluoromethane (FREON 11)		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Acetone (2-Propanone)		0.112	5.59	0.0103	< 0.0500	< 2.58	< 0.00477	0.0620	3.21	0.00593	< 3.80	< 4.34	< 0.00701
Methylene Chloride(Dichloromethane)		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
1,1-Dichloroethane		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
trans-1,2-Dichloroethylene		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
cis-1,2-Dichloroethylene		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Chloroform		< 0.0500	< 2.50	< 0.00461	0.0510	2.63	0.00486	< 0.0500	< 2.59	< 0.00478	< 2.57	< 2.94	< 0.00475
1,2-Dichloroethane		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Methyl Ethyl Ketone (2-Butanone)		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
1,1,1-Trichloroethane		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Carbon Tetrachloride		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Benzene		0.0570	2.85	0.00525	0.102	5.27	0.00972	< 0.0500	< 2.59	< 0.00478	< 3.57	< 4.08	< 0.00659
1,1,2-Trichloroethane		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
1,2-Dichloropropane		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Trichloroethylene		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Bromodichloromethane		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Dibromochloromethane		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Toluene		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	3.30	171	0.316	< 58.7	< 67.1	< 0.108
Ethylene Dibromide		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Tetrachloroethylene		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Ethylbenzene		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
m / p-Xylene		< 0.100	< 4.99	< 0.00922	< 0.100	< 5.17	< 0.00953	< 0.100	< 5.18	< 0.00957	< 5.12	< 5.84	< 0.00944
Styrene		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
o-Xylene		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472
Bromoform		< 0.0500	< 2.50	< 0.00461	< 0.0500	< 2.58	< 0.00477	< 0.0500	< 2.59	< 0.00478	< 2.56	< 2.92	< 0.00472

Notes:

' < ' indicates that the laboratory results were less than the Reortable Detection Limit (RDL). This RDL was used to calculate the concentration and emission rate.

[1] Sample volume, volumetric flow rate, and concentration based on dry referenced conditions (101.3 kPa, 25 °C, and Actual Oxygen)

[2] Average of the measured volumetric flow rates from isokinetic testing

[3] Correct O_2 to 11% equation ***a*((20.9-11)/(20.9-b))*** *a=concentration @ original O_2 b=original O_2 %*

Volatile Organic Compound Sampling

Incinerator

Facility:	Stericycle	**Operator:**	MOS
City:	Brampton, Ontario	**Entered by:**	MOS
Source:	Incinerator	**Checked by:**	OO
Run:	Test #1	**Test Date:**	June 15, 2022
Method:	VOST	**PBar:**	29.96
		DGM Y:	1.004

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Probe Temp** (^oF)	**Condenser Temp** (°C)	**Condenser Temp** (°F)	**Sampling Rate** (L/min)
Pair ID =								
10:30 - 11:30				Pre-test Leak Check:		Good		
0	0.6	0.00	77	-2.0	N/A	6	43	-
5	0.6	1.66	77	-2.0	N/A	6	43	0.332
10	0.6	3.30	77	-2.0	N/A	6	43	0.328
15	0.6	5.00	77	-2.0	N/A	6	43	0.340
20	0.6	6.54	77	-2.0	N/A	6	43	0.308
25	0.6	8.19	77	-2.0	N/A	6	43	0.330
30	0.6	10.02	77	-2.0	N/A	6	43	0.366
35	0.6	11.55	77	-2.0	N/A	6	43	0.306
40	0.6	13.23	77	-2.0	N/A	6	43	0.336
45	0.6	14.85	77	-2.0	N/A	6	43	0.324
50	0.6	16.52	77	-2.0	N/A	6	43	0.334
55	0.6	18.19	77	-2.0	N/A	6	43	0.334
60	0.6	19.886	77	-2.0	N/A	6	43	0.339
				Post-test Leak Check:		Good		
Average	0.6	-	77	-2.0		-		0.331
Total Volume Actual (m^3)		0.020						
Total Volume Reference (Rm^3)		**0.020**						

Volatile Organic Compound Sampling

Incinerator

Facility:	Stericycle	**Operator:**	MOS
City:	Brampton, Ontario	**Entered by:**	MOS
Source:	Incinerator	**Checked by:**	OO
Run:	Test #2	**Test Date:**	June 16, 2022
Method:	VOST	**PBar:**	29.85
		DGM Y:	1.004

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condensor Temp** (°C)	**Condensor Temp** (°F)	**Sampling Rate** (L/min)
Pair ID =							
10:05 - 11:05				Pre-test Leak Check: Good			
0	0.6	0.00	86	-3.0	13	55	-
5	0.6	1.56	86	-3.0	13	55	0.312
10	0.6	3.24	86	-3.0	13	55	0.336
15	0.6	4.99	86	-3.0	13	55	0.350
20	0.6	6.50	86	-3.0	13	55	0.302
25	0.6	8.23	86	-3.0	13	55	0.346
30	0.6	10.05	86	-3.0	13	55	0.364
35	0.6	11.56	86	-3.0	13	55	0.302
40	0.6	13.25	86	-3.0	13	55	0.338
45	0.6	14.90	86	-3.0	13	55	0.330
50	0.6	16.50	86	-3.0	13	55	0.320
55	0.6	18.18	86	-3.0	13	55	0.336
60	0.6	19.62	86	-3.0	13	55	0.288
				Post-test Leak Check: Good			
Average	0.6	-	86	-3.0	-		0.327
Total Volume Actual (m^3)		0.020					
Total Volume Reference (Rm^3)		**0.019**					

Volatile Organic Compound Sampling

Incinerator

Facility:	Stericycle	**Operator:**	OO
City:	Brampton, Ontario	**Entered by:**	MOS
Source:	Incinerator	**Checked by:**	OO
Run:	Test #3	**Test Date:**	June 17, 2022
Method:	VOST	**PBar:**	29.06
		DGM Y:	1.004

Time (min)	**Orifice Press.** ("H_2O)	**Meter Volume** (L)	**Meter Temp** (^oF)	**Vacuum** (in Hg)	**Condensor Temp** (°C)	**Condensor Temp** (°F)	**Sampling Rate** (L/min)
Pair ID =							
9:47 - 10:47				Pre-test Leak Check:	Good		
0	0.6	0.00	77	-2.0	12	54	-
5	0.6	1.59	77	-2.0	12	54	0.318
10	0.6	3.22	77	-2.0	12	54	0.326
15	0.6	5.04	77	-2.0	12	54	0.364
20	0.6	6.55	77	-2.0	12	54	0.302
25	0.6	8.29	77	-2.0	13	55	0.348
30	0.6	10.00	77	-2.0	13	55	0.342
35	0.6	11.60	77	-2.0	13	55	0.320
40	0.6	13.18	77	-2.0	13	55	0.316
45	0.6	14.90	77	-2.0	13	55	0.344
50	0.6	16.60	77	-2.0	14	57	0.340
55	0.6	18.21	77	-2.0	14	57	0.322
60	0.6	19.75	77	-2.0	14	57	0.308
				Post-test Leak Check: Good			
Average	0.6	-	77	-2.0	-		0.329
Total Volume Actual (m^3)		0.020					
Total Volume Reference (Rm^3)		**0.019**					

APPENDIX F

CARB 430 - Acrolein
Incinerator

Sample ID : Sampling Date : Sampling Times : Sample Volume[1] : Stack Flow Rate[1], [2]	BLANK Rm^3 Rm^3/s	Test #1 Carb 430- T1 June 15, 2022 11:43 - 13:43 0.0402 1.85			Test #2 Carb 430- T2 June 16, 2022 14:06 - 16:06 0.0401 1.85			Test #3 Carb 430- T3 June 17, 2022 11:00 - 13:00 0.0390 1.85			Average - - 0.0398 1.85		
Parameter		**Mass** (µg)	**Conc** (mg/m^3)	**Emission Rate** (mg/s)	**Mass** (µg)	**Conc** (mg/m^3)	**Emission Rate** (mg/s)	**Mass** (µg)	**Conc** (mg/m^3)	**Emission Rate** (mg/s)	**Conc** (mg/m^3)	**Conc @ 11% O_2** (mg/m^3)	**Emission Rate** (mg/s)
Formaldehyde (Methanal)	47	27.0	0.671	1.24	55.0	1.37	2.53	32.0	0.820	1.51	0.954	1.09	1.76
Acetaldehyde (Ethanal)	ND	< 2.00	< 0.0497	< 0.0917	3.00	0.0749	0.138	< 2.00	< 0.0512	< 0.0946	< 0.0586	< 0.0669	< 0.108
Acrolein	ND	< 2.00	< 0.0497	< 0.0917	< 2.00	< 0.0499	< 0.0921	< 2.00	< 0.0512	< 0.0946	< 0.0503	< 0.0574	< 0.0928

Notes:

[1] Sample volume and volumetric flow rate based on dry referenced conditions (101.3kPa, 25°C)

[2] Average of the measured volumetric flow rates from isokinetic testing

Values following < indicate that the laboratory results were below the reportable detection limit. This detection limit was used to calculate the concentration and emission rate.

CARB 430 - Acrolein

Facility:	Stericycle	**Operator:**	MOS
City:	Brampton, Ontario	**Entered by:**	MOS
Source:	Incinerator	**Checked by:**	OO
Run:	Test #1	**Test Date:**	6/15/2022
Method:	CARB 430	**Pbar:**	29.96
		Y:	1.004

Time (min)	Orifice Pressure ("H_2O)	Meter Volume (L)	Meter Temp (^oF)	Vacuum (in Hg)	Condensor Temp (^oF)	Sampling Rate (L/min)
11:43 - 13:43				Pre-test Leak Check: good		
0	0.7	0.0	77	0	55	-
5	0.7	1.66	77	0	55	0.33
10	0.7	3.25	77	0	55	0.32
15	0.7	5.00	77	0	55	0.35
20	0.7	6.67	77	0	55	0.33
25	0.7	8.25	77	0	55	0.32
30	0.7	9.92	77	0	55	0.33
35	0.7	11.56	77	0	55	0.33
40	0.7	13.26	77	0	55	0.34
45	0.7	14.91	77	0	55	0.33
50	0.7	16.51	77	0	55	0.32
55	0.7	18.17	79	0	56	0.33
60	0.7	19.82	79	0	56	0.33
65	0.7	21.50	79	0	56	0.34
70	0.7	23.15	79	0	56	0.33
75	0.7	24.80	79	0	56	0.33
80	0.7	26.41	79	0	56	0.32
85	0.7	28.05	79	0	56	0.33
90	0.7	29.70	79	0	56	0.33
95	0.7	31.35	79	0	56	0.33
100	0.7	33.12	79	0	56	0.35
105	0.7	34.72	81	0	57	0.32
110	0.7	36.37	81	0	57	0.33
115	0.7	37.99	81	0	57	0.32
120	0.7	40.04	81	0	57	0.41
				Post-test Leak Check: good		
Average	**0.7**		**78**	**0.0**	**-**	**0.33**
Total Volume Actual (m^3)		0.040				
Total Volume Reference (Rm^3)		**0.040**				

CARB 430 - Acrolein

Facility:	Stericycle	**Operator:**	MOS
City:	Brampton, Ontario	**Entered by:**	MOS
Source:	Incinerator	**Checked by:**	OO
Run:	Test #2	**Test Date:**	6/16/2022
Method:	CARB 430	**Pbar:**	29.85
		Y:	1.004

Time (min)	Orifice Pressure ("H_2O)	Meter Volume (L)	Meter Temp (^oF)	Vacuum (in Hg)	Condensor Temp (°F)	Sampling Rate (L/min)
14:06 - 16:06				Pre-test Leak Check:	good	
0	0.7	0.00	86	0	60	-
5	0.7	1.59	86	0	60	0.32
10	0.7	3.25	86	0	60	0.33
15	0.7	4.96	86	0	60	0.34
20	0.7	6.67	86	0	60	0.34
25	0.7	8.21	86	0	60	0.31
30	0.7	9.85	86	0	60	0.33
35	0.7	11.55	86	0	60	0.34
40	0.7	13.21	86	0	60	0.33
45	0.7	14.82	86	0	60	0.32
50	0.7	16.40	86	0	60	0.32
55	0.7	18.11	86	0	60	0.34
60	0.7	19.79	86	0	60	0.34
65	0.7	21.46	84	0	61	0.33
70	0.7	23.15	84	0	61	0.34
75	0.7	24.78	84	0	61	0.33
80	0.7	26.43	84	0	61	0.33
85	0.7	28.03	84	0	61	0.32
90	0.7	29.77	84	0	61	0.35
95	0.7	31.35	84	0	61	0.32
100	0.7	33.10	84	0	61	0.35
105	0.7	34.65	84	0	61	0.31
110	0.7	36.32	86	0	62	0.33
115	0.7	37.95	86	0	62	0.33
120	0.7	40.57	86	0	62	0.52
				Post-test Leak Check:	good	
Average	**0.7**		**85**	**0.0**		**0.34**
Total Volume Actual (m^3)		0.041				
Total Volume Reference (Rm^3)		**0.040**				

CARB 430 - Acrolein

Facility:	Stericycle	**Operator:**	MOS
City:	Brampton, Ontario	**Entered by:**	MOS
Source:	Incinerator	**Checked by:**	OO
Run:	Test #3	**Test Date:**	6/17/2022
Method:	CARB 430	**Pbar:**	29.06
		Y:	1.004

Time (min)	Orifice Pressure ("H_2O)	Meter Volume (L)	Meter Temp (^oF)	Vacuum (in Hg)	Condensor Temp (°F)	Sampling Rate (L/min)
11:00 - 13:00				Pre-test Leak Check:	good	
0	0.7	0.0	77	0	58	-
5	0.7	1.59	77	0	58	0.32
10	0.7	3.35	77	0	58	0.35
15	0.7	5.00	77	0	58	0.33
20	0.7	6.67	77	0	58	0.33
25	0.7	8.33	77	0	58	0.33
30	0.7	9.95	77	0	58	0.32
35	0.7	11.56	77	0	58	0.32
40	0.7	13.25	77	0	58	0.34
45	0.7	14.89	77	0	58	0.33
50	0.7	16.59	77	0	58	0.34
55	0.7	18.26	77	0	59	0.33
60	0.7	19.85	77	0	59	0.32
65	0.7	21.46	77	0	59	0.32
70	0.7	23.11	77	0	59	0.33
75	0.7	24.75	79	0	59	0.33
80	0.7	26.45	79	0	59	0.34
85	0.7	28.06	79	0	59	0.32
90	0.7	29.76	79	0	59	0.34
95	0.7	31.40	79	0	59	0.33
100	0.7	33.08	79	0	59	0.34
105	0.7	34.66	79	0	60	0.32
110	0.7	36.30	81	0	60	0.33
115	0.7	37.99	81	0	60	0.34
120	0.7	40.03	81	0	60	0.41
				Post-test Leak Check:	good	
Average	**0.7**		**78**	**0.0**		**0.33**
Total Volume Actual (m^3)		0.040				
Total Volume Reference (Rm^3)		**0.039**				

APPENDIX G

Summary of CEM Data
Stericycle - Incinerator / Oxidizer

Overall Average Concentrations				
NO_X (ppm)	SO_2 (ppm)	O_2 (%)	CO (ppm)	CO_2 (%)
58.0	-2.40	12.2	4.53	5.65

Test ID: Test 1			Date: 16-Jun-22		
Time	NO_X (ppm)	SO_2 (ppm)	O_2 (%)	CO (ppm)	CO_2 (%)
9:29 - 11:35	63.0	-1.93	12.0	4.8	5.49

Test ID: Test 2			Date: 16-Jun-22		
Time	NO_X (ppm)	SO_2 (ppm)	O_2 (%)	CO (ppm)	CO_2 (%)
14:10 - 16:09	57.4	-2.538	12.6	4.27	5.41

Test ID: Test 3			Date: 17-Jun-22		
Time	NO_X (ppm)	SO_2 (ppm)	O_2 (%)	CO (ppm)	CO_2 (%)
9:05 - 10:30	53.7	-2.721	11.9	4.56	6.06

Oxidizer

Test ID: Oxidizer Outlet			Date: 17-Jun-22	
Time	T1 - 11:50 - 12:50	T2 - 12:51 - 13:50	T3 - 13:51 - 14:40	Average
THC (ppm)	7.50	7.84	8.39	7.91

Test ID: Oxidizer Outlet	
Time	O_2 (%)
15:08 - 16:23	8.69

Notes:

Stericycle - Incinerator Stack

Date	16-Jun-22									
Analyzer	O_2		CO_2		CO		NO_X		SO_2	
Low										
Zero Value *(Cv)*	0.0		0.0		0.0		0.0		0.0	
Direct *(C Dir)*	0.08		0.04		0.12		0.29		0.97	
Calibration Error *(ACE)*	0.53%	*PASS*	0.22%	*PASS*	0.60%	*PASS*	0.14%	*PASS*	0.46%	*PASS*
System Initial *(Csi)*	0.07		0.00		0.29		0.40		0.95	
System Post *(Csf)*	0.11		0.00		0.46		0.38		1.00	
Average *(Co)*	0.09		0.00		0.38		0.39		0.98	
System Bias Initial *(SBi)*	-0.1%	*PASS*	-0.2%	*PASS*	0.9%	*PASS*	0.1%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	0.2%	*PASS*	-0.2%	*PASS*	1.7%	*PASS*	0.0%	*PASS*	0.0%	*PASS*
Drift Assessment *(D)*	0.27%	*PASS*	0.00%	*PASS*	0.85%	*PASS*	-0.01%	*PASS*	0.02%	*PASS*
Mid										
Mid Value *(Cv)*	7.50		8.98		10.00		105.00		106.16	
Direct *(C Dir)*	7.43		8.85		9.95		104.37		106.01	
Calibration Error *(ACE)*	-0.47%	*PASS*	-0.72%	*PASS*	-0.25%	*PASS*	-0.30%	*PASS*	-0.07%	*PASS*
System Initial *(Csi)*							104.95		106.09	
System Post *(Csf)*							104.83		106.33	
Average *(Cm)*	-		-		-		104.89		106.2	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-	0.3%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-	0.2%	*PASS*	0.2%	*PASS*
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-	-0.06%	*PASS*	0.11%	*PASS*
High										
High Value *(CS/Cv)*	15.00		18.0		20.0		210.0		212.3	
Direct *(C Dir)*	14.85		18.12		19.88		211.20		210.98	
Calibration Error *(ACE)*	-1.00%	*PASS*	0.83%	*PASS*	-0.60%	*PASS*	0.57%	*PASS*	-0.63%	*PASS*
System Initial *(Csi)*	15.14		17.9		20.09					
System Post *(Csf)*	14.96		18.04		19.79					
Average *(Cm)*	15.05		18.0		19.9		-		-	
System Bias Initial *(SBi)*	1.9%	*PASS*	-1.2%	*PASS*	1.1%	*PASS*	N/A	-	N/A	-
System Bias Post *(SBf)*	0.7%	*PASS*	-0.4%	*PASS*	-0.4%	*PASS*	N/A	-	N/A	-
Drift Assessment *(D)*	-1.20%	*PASS*	0.78%	*PASS*	-1.50%	*PASS*	N/A	-	N/A	-
Analyser Span (Range)	25		30		60		1000		1000	
Average	12.06	12.00	5.49	5.49	5.03	4.76	63.08	62.99	-0.94	-1.93
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
9:29:36	10.8	10.7	6.4	6.4	2.5	2.1	85.2	85.2	-0.7	-1.7
9:30:36	12.9	12.9	5.1	5.1	3.1	2.8	62.5	62.4	-0.5	-1.5
9:31:36	10.0	9.9	6.7	6.7	3.6	3.3	72.3	72.2	-0.5	-1.5
9:32:36	12.8	12.7	5.1	5.1	2.9	2.6	67.2	67.2	-0.9	-1.9
9:33:36	10.4	10.3	6.6	6.6	3.3	3.0	91.5	91.5	-0.8	-1.7
9:34:36	14.2	14.1	4.6	4.6	2.9	2.6	72.2	72.1	-0.8	-1.8
9:35:36	10.8	10.7	5.7	5.7	3.2	2.9	50.4	50.3	-1.0	-2.0
9:36:36	13.2	13.2	5.0	5.0	2.9	2.6	54.7	54.6	-1.0	-1.9
9:37:36	11.0	10.9	5.7	5.7	3.0	2.6	69.6	69.5	-0.8	-1.8
9:38:36	12.1	12.1	5.7	5.7	2.3	2.0	71.5	71.5	-0.9	-1.9
9:39:36	12.2	12.1	5.6	5.6	3.0	2.7	68.0	67.9	-0.8	-1.8
9:40:36	11.1	11.1	6.1	6.1	2.7	2.4	71.2	71.2	-0.9	-1.9
9:41:36	14.0	13.9	4.4	4.4	4.6	4.3	48.0	47.9	-0.7	-1.7
9:42:36	9.9	9.8	6.1	6.1	3.9	3.6	59.0	58.9	-0.8	-1.8
9:43:36	14.1	14.0	4.6	4.6	3.8	3.6	70.4	70.3	-1.2	-2.1
9:44:36	9.9	9.8	6.0	6.0	3.7	3.4	72.3	72.3	-1.2	-2.2
9:45:36	12.9	12.9	5.5	5.5	4.0	3.8	74.9	74.9	-1.2	-2.2
9:46:36	11.5	11.5	5.3	5.3	3.9	3.6	80.8	80.8	-1.1	-2.1
9:47:36	11.9	11.8	5.5	5.5	2.8	2.5	102.9	103.1	-1.1	-2.1
9:48:36	13.1	13.1	4.4	4.4	3.8	3.5	66.2	66.1	-1.1	-2.1
9:49:36	10.1	10.0	6.2	6.2	3.2	2.9	78.7	78.7	-1.0	-2.0
9:50:36	13.3	13.2	4.7	4.7	4.7	4.4	77.4	77.4	-1.1	-2.1
9:51:36	9.3	9.3	6.9	6.9	47.9	48.6	84.4	84.4	-1.0	-2.0
9:52:36	14.0	14.0	4.5	4.5	5.8	5.5	65.4	65.3	-0.9	-1.9
9:53:36	10.3	10.2	5.8	5.8	3.5	3.2	68.7	68.6	-1.0	-2.0
9:54:36	12.9	12.8	5.2	5.2	2.6	2.3	83.1	83.1	-0.9	-1.9
9:55:36	11.1	11.0	5.6	5.6	2.9	2.6	83.0	83.0	-0.9	-1.9
9:56:36	11.9	11.9	5.6	5.6	2.7	2.4	77.2	77.1	-1.0	-1.9
9:57:36	12.0	11.9	5.7	5.7	2.7	2.4	88.5	88.5	-0.9	-1.9
9:58:36	11.2	11.2	5.9	5.9	2.4	2.1	90.6	90.7	-0.7	-1.6
9:59:36	13.8	13.7	4.4	4.4	4.3	4.0	53.7	53.6	-0.6	-1.6
10:00:36	9.3	9.2	6.7	6.7	3.2	2.9	73.4	73.4	-0.9	-1.8
10:01:36	13.5	13.5	4.8	4.8	2.9	2.6	90.8	90.8	-0.9	-1.9
10:02:36	10.8	10.8	5.5	5.5	2.3	2.0	88.8	88.8	-0.9	-1.9
10:03:36	12.9	12.9	5.0	5.0	1.1	0.7	85.5	85.5	-0.8	-1.8
10:04:36	12.2	12.2	4.9	4.9	3.1	2.8	70.1	70.0	-0.9	-1.8
10:05:36	11.5	11.4	5.7	5.7	2.9	2.6	67.4	67.3	-0.8	-1.8
10:06:36	13.6	13.5	4.4	4.4	3.4	3.1	69.9	69.8	-0.7	-1.7
10:07:36	9.9	9.8	6.4	6.4	1.9	1.6	86.2	86.2	-0.9	-1.9
10:08:36	14.4	14.4	4.4	4.4	4.1	3.8	61.7	61.6	-0.8	-1.8
10:09:36	10.3	10.3	5.8	5.8	3.8	3.5	68.4	68.3	-1.0	-2.0
10:10:36	13.6	13.6	4.9	4.9	2.3	2.0	72.2	72.1	-1.0	-2.0
10:11:36	11.8	11.7	5.2	5.2	2.5	2.2	70.8	70.7	-0.8	-1.8
10:12:36	11.8	11.8	5.7	5.7	2.6	2.3	67.8	67.7	-0.8	-1.7
10:13:36	12.8	12.8	4.9	4.9	3.5	3.2	61.4	61.3	-0.7	-1.7
10:14:36	10.4	10.4	6.4	6.4	2.4	2.0	86.4	86.4	-0.8	-1.8
10:15:36	13.9	13.8	4.6	4.6	3.4	3.1	64.6	64.6	-1.0	-2.0
10:16:36	10.1	10.1	6.1	6.1	2.7	2.4	76.7	76.6	-0.9	-1.9
10:17:36	14.5	14.5	4.3	4.3	3.9	3.6	56.5	56.4	-0.7	-1.7
10:18:36	12.3	12.2	4.7	4.7	4.3	4.0	51.1	51.0	-0.8	-1.8
10:19:36	11.2	11.1	5.6	5.6	3.0	2.7	72.7	72.7	-1.0	-2.0
10:20:36	14.0	14.0	4.3	4.3	3.7	3.4	60.2	60.0	-1.0	-2.0
10:21:36	10.9	10.8	5.5	5.5	3.7	3.4	50.2	50.0	-1.0	-2.0
10:22:37	13.3	13.2	4.8	4.8	2.9	2.6	49.1	48.9	-1.0	-2.0
10:23:37	12.5	12.4	4.8	4.8	5.2	5.0	45.5	45.4	-1.3	-2.3
10:24:37	10.0	9.9	6.5	6.5	2.5	2.2	62.5	62.4	-1.0	-2.0
10:25:37	14.4	14.3	4.8	4.8	4.7	4.5	57.0	56.9	-0.7	-1.7
10:26:37	10.9	10.9	5.7	5.7	4.6	4.4	45.1	44.9	-0.7	-1.7
10:27:37	12.6	12.5	5.4	5.4	3.4	3.1	49.4	49.2	-0.6	-1.6
10:28:37	12.5	12.5	4.9	4.9	5.2	4.9	49.8	49.7	-0.6	-1.6
10:29:37	10.9	10.9	6.1	6.1	3.2	2.9	65.7	65.6	-0.8	-1.8
10:30:37	12.7	12.7	5.1	5.1	7.4	7.1	51.5	51.4	-0.8	-1.8
10:31:37	10.0	10.0	7.1	7.1	3.9	3.6	81.7	81.7	-1.0	-2.0
10:32:37	14.4	14.3	4.4	4.4	8.9	8.7	49.0	48.8	-1.1	-2.1
10:33:37	9.7	9.6	6.4	6.4	4.3	4.0	56.8	56.7	-1.0	-2.0
10:34:37	12.8	12.7	5.5	5.5	3.2	2.9	65.6	65.6	-1.1	-2.1
10:35:37	12.1	12.0	5.5	5.5	3.0	2.6	59.7	59.6	-1.1	-2.1
10:36:37	9.5	9.4	6.8	6.8	2.7	2.4	71.6	71.5	-0.9	-1.9
10:37:37	13.4	13.3	5.3	5.3	3.2	2.9	59.5	59.4	-0.8	-1.8
10:38:37	12.9	12.9	4.9	4.9	5.1	4.8	53.3	53.2	-0.9	-1.9
10:39:37	10.2	10.1	6.4	6.4	3.4	3.1	70.4	70.4	-1.1	-2.1
10:40:37	13.9	13.8	4.8	4.8	3.7	3.4	58.3	58.2	-0.9	-1.9
10:41:37	11.7	11.7	5.4	5.4	4.2	4.0	61.0	60.9	-1.0	-2.0
10:42:37	10.6	10.5	6.5	6.5	2.8	2.5	86.8	86.8	-1.0	-2.0
10:43:37	13.7	13.6	5.2	5.2	2.9	2.6	70.7	70.7	-0.9	-1.9
10:44:37	11.1	11.1	5.8	5.8	3.7	3.4	63.2	63.2	-1.2	-2.2
10:45:37	11.9	11.9	5.9	5.9	2.7	2.4	84.2	84.3	-0.7	-1.7
10:46:37	13.7	13.7	4.8	4.8	3.6	3.3	63.7	63.6	-1.1	-2.1
10:47:37	9.7	9.7	6.3	6.3	3.1	2.8	55.0	54.8	-0.8	-1.7
10:48:37	13.1	13.0	5.1	5.1	3.9	3.6	54.1	53.9	-0.6	-1.6

Stericycle - Incinerator Stack

Date	16-Jun-22									
Analyzer	O_2		CO_2		CO		NO_X		SO_2	
Low										
Zero Value *(Cv)*	0.0		0.0		0.0		0.0		0.0	
Direct *(C Dir)*	0.08		0.04		0.12		0.29		0.97	
Calibration Error *(ACE)*	0.53%	*PASS*	0.22%	*PASS*	0.60%	*PASS*	0.14%	*PASS*	0.46%	*PASS*
System Initial *(Csi)*	0.07		0.00		0.29		0.40		0.95	
System Post *(Csf)*	0.11		0.00		0.46		0.38		1.00	
Average *(Co)*	0.09		0.00		0.38		0.39		0.98	
System Bias Initial *(SBi)*	-0.1%	*PASS*	-0.2%	*PASS*	0.9%	*PASS*	0.1%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	0.2%	*PASS*	-0.2%	*PASS*	1.7%	*PASS*	0.0%	*PASS*	0.0%	*PASS*
Drift Assessment *(D)*	0.27%	*PASS*	0.00%	*PASS*	0.85%	*PASS*	-0.01%	*PASS*	0.02%	*PASS*
Mid										
Mid Value *(Cv)*	7.50		8.98		10.00		105.00		106.16	
Direct *(C Dir)*	7.43		8.85		9.95		104.37		106.01	
Calibration Error *(ACE)*	-0.47%	*PASS*	-0.72%	*PASS*	-0.25%	*PASS*	-0.30%	*PASS*	-0.07%	*PASS*
System Initial *(Csi)*							104.95		106.09	
System Post *(Csf)*							104.83		106.33	
Average *(Cm)*	-		-		-		104.89		106.2	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-	0.3%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-	0.2%	*PASS*	0.2%	*PASS*
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-	-0.06%	*PASS*	0.11%	*PASS*
High										
High Value *(CS/Cv)*	15.00		18.0		20.0		210.0		212.3	
Direct *(C Dir)*	14.85		18.12		19.88		211.20		210.98	
Calibration Error *(ACE)*	-1.00%	*PASS*	0.83%	*PASS*	-0.60%	*PASS*	0.57%	*PASS*	-0.63%	*PASS*
System Initial *(Csi)*	15.14		17.9		20.09					
System Post *(Csf)*	14.96		18.04		19.79					
Average *(Cm)*	15.05		18.0		19.9		-		-	
System Bias Initial *(SBi)*	1.9%	*PASS*	-1.2%	*PASS*	1.1%	*PASS*	N/A	-	N/A	-
System Bias Post *(SBf)*	0.7%	*PASS*	-0.4%	*PASS*	-0.4%	*PASS*	N/A	-	N/A	-
Drift Assessment *(D)*	-1.20%	*PASS*	0.78%	*PASS*	-1.50%	*PASS*	N/A	-	N/A	-
Analyser Span (Range)	25		30		60		1000		1000	
Average	12.06	12.00	5.49	5.49	5.03	4.76	63.08	62.99	-0.94	-1.93
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
10:49:37	12.8	12.7	5.3	5.3	4.1	3.8	63.6	63.5	-0.7	-1.7
10:50:37	10.1	10.0	6.3	6.3	3.2	2.9	61.8	61.7	-1.0	-2.0
10:51:37	14.8	14.8	4.2	4.2	6.8	6.6	46.3	46.1	-1.0	-1.9
10:52:37	11.0	10.9	5.7	5.7	4.6	4.3	74.8	74.8	-0.8	-1.8
10:53:37	11.5	11.5	6.0	6.0	2.4	2.0	90.4	90.5	-0.9	-1.9
10:54:37	13.5	13.5	4.8	4.8	4.8	4.5	55.0	54.9	-1.0	-1.9
10:55:37	8.5	8.5	7.5	7.5	4.9	4.6	47.1	47.0	-1.1	-2.0
10:56:37	13.8	13.8	5.1	5.1	3.9	3.6	53.0	52.9	-1.0	-2.0
10:57:37	12.2	12.2	5.4	5.4	3.6	3.3	68.0	67.9	-1.0	-2.0
10:58:37	9.6	9.6	7.0	7.0	2.4	2.0	98.0	98.1	-1.4	-2.4
10:59:37	13.6	13.6	5.0	5.0	3.1	2.8	58.1	58.0	-1.1	-2.1
11:00:37	11.9	11.9	5.6	5.6	3.9	3.6	53.5	53.3	-1.0	-2.0
11:01:37	9.2	9.1	7.4	7.4	4.2	4.0	80.6	80.6	-1.0	-2.0
11:02:37	14.5	14.5	4.2	4.2	4.0	3.7	56.6	56.5	-0.9	-1.9
11:03:37	11.8	11.8	5.2	5.2	5.2	5.0	48.2	48.0	-1.1	-2.1
11:04:37	10.5	10.5	6.3	6.3	2.8	2.4	62.7	62.6	-1.2	-2.2
11:05:37	13.8	13.8	4.7	4.7	2.8	2.5	62.5	62.4	-1.1	-2.1
11:06:37	10.7	10.6	5.9	5.9	3.3	3.0	56.2	56.0	-1.1	-2.1
11:07:37	12.4	12.3	5.5	5.5	3.7	3.4	48.1	47.9	-1.0	-2.0
11:08:37	14.3	14.2	4.3	4.3	6.8	6.6	41.4	41.2	-0.9	-1.9
11:09:37	10.0	10.0	6.1	6.1	4.0	3.7	52.1	52.0	-1.1	-2.0
11:10:37	12.6	12.5	5.7	5.7	3.8	3.5	56.2	56.0	-0.9	-1.9
11:11:37	13.5	13.5	4.7	4.7	6.4	6.1	43.1	43.0	-0.8	-1.8
11:12:37	9.4	9.4	6.6	6.6	3.5	3.2	66.5	66.4	-0.9	-1.9
11:13:37	14.2	14.1	4.6	4.6	4.9	4.6	51.9	51.8	-1.0	-2.0
11:14:37	12.0	12.0	5.2	5.2	5.7	5.4	42.3	42.1	-0.8	-1.8
11:15:37	10.8	10.8	6.1	6.1	3.4	3.1	53.5	53.4	-0.9	-1.9
11:16:37	13.1	13.0	5.2	5.2	3.3	3.0	49.7	49.6	-1.2	-2.1
11:17:37	13.5	13.4	4.9	4.9	4.9	4.6	43.9	43.7	-1.2	-2.2
11:18:37	13.1	13.0	4.7	4.7	7.5	7.3	39.9	39.7	-0.8	-1.8
11:19:37	8.9	8.8	6.7	6.7	3.7	3.4	51.8	51.7	-0.9	-1.9
11:20:37	13.4	13.3	5.0	5.0	4.7	4.4	50.8	50.7	-0.8	-1.8
11:21:37	14.0	14.0	4.4	4.4	6.6	6.4	40.1	39.9	-1.0	-2.0
11:22:37	12.7	12.7	5.4	5.4	8.6	8.4	46.3	46.1	-1.0	-2.0
11:23:37	14.3	14.3	4.6	4.6	11.5	11.3	46.0	45.8	-1.0	-2.0
11:24:37	14.6	14.5	4.3	4.3	13.6	13.5	44.8	44.6	-1.1	-2.1
11:25:37	13.4	13.4	4.8	4.8	21.3	21.4	40.3	40.1	-0.8	-1.8
11:26:37	12.3	12.3	5.7	5.7	10.5	10.4	44.6	44.4	-1.0	-2.0
11:27:37	12.2	12.1	5.7	5.7	9.6	9.4	48.7	48.5	-1.0	-2.0
11:28:37	12.4	12.4	5.6	5.6	9.1	9.0	53.4	53.3	-0.9	-1.9
11:29:37	12.8	12.8	5.4	5.4	9.7	9.5	49.4	49.3	-1.0	-2.0
11:30:37	13.4	13.4	5.0	5.0	14.5	14.4	48.7	48.5	-1.1	-2.1
11:31:37	11.2	11.2	6.0	6.0	8.9	8.7	44.1	44.0	-1.2	-2.2
11:32:37	8.9	8.8	7.5	7.5	31.1	31.4	49.2	49.1	-1.1	-2.1
11:33:37	11.0	10.9	6.8	6.8	9.4	9.2	52.5	52.3	-1.1	-2.1
11:34:37	11.4	11.3	6.3	6.3	10.7	10.5	57.7	57.6	-1.3	-2.3
11:35:37	13.0	12.9	5.6	5.6	4.6	4.3	62.7	62.6	-1.3	-2.3

Stericycle - Incinerator Stack

Date	16-Jun-22									
Analyzer	O_2		CO_2		CO		NO_X		SO_2	
Low										
Zero Value *(Cv)*	0.0		0.0		0.0		0.0		0.0	
Direct *(C Dir)*	0.08		0.04		0.12		0.29		0.97	
Calibration Error *(ACE)*	0.53%	*PASS*	0.22%	*PASS*	0.60%	*PASS*	0.14%	*PASS*	0.46%	*PASS*
System Initial *(Csi)*	0.11		0.00		0.46		0.38		1.00	
System Post *(Csf)*	0.19		0.06		0.33		0.30		1.02	
Average *(Co)*	0.15		0.03		0.40		0.34		1.01	
System Bias Initial *(SBi)*	0.2%	*PASS*	-0.2%	*PASS*	1.7%	*PASS*	0.0%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	0.7%	*PASS*	0.1%	*PASS*	1.1%	*PASS*	0.0%	*PASS*	0.0%	*PASS*
Drift Assessment *(D)*	0.53%	*PASS*	0.33%	*PASS*	-0.65%	*PASS*	-0.04%	*PASS*	0.01%	*PASS*
Mid										
Mid Value *(Cv)*	7.50		8.98		10.00		105.00		106.16	
Direct *(C Dir)*	7.43		8.85		9.95		104.37		106.01	
Calibration Error *(ACE)*	-0.47%	*PASS*	-0.72%	*PASS*	-0.25%	*PASS*	-0.30%	*PASS*	-0.07%	*PASS*
System Initial *(Csi)*							104.83		106.33	
System Post *(Csf)*							104.72		106.42	
Average *(Cm)*	-		-		-		104.775		106.4	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-	0.2%	*PASS*	0.2%	*PASS*
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-	0.2%	*PASS*	0.2%	*PASS*
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-	-0.05%	*PASS*	0.04%	*PASS*
High										
High Value *(CS/Cv)*	15.00		18.0		20.0		210.0		212.3	
Direct *(C Dir)*	14.85		18.12		19.88		211.20		210.98	
Calibration Error *(ACE)*	-1.00%	*PASS*	0.83%	*PASS*	-0.60%	*PASS*	0.57%	*PASS*	-0.63%	*PASS*
System Initial *(Csi)*	14.96		18.04		19.79					
System Post *(Csf)*	14.79		18.1		19.85					
Average *(Cm)*	14.875		18.1		19.8		-		-	
System Bias Initial *(SBi)*	0.7%	*PASS*	-0.4%	*PASS*	-0.4%	*PASS*	N/A	-	N/A	-
System Bias Post *(SBf)*	-0.4%	*PASS*	-0.1%	*PASS*	-0.1%	*PASS*	N/A	-	N/A	-
Drift Assessment *(D)*	-1.13%	*PASS*	0.33%	*PASS*	0.30%	*PASS*	N/A	-	N/A	-
Analyser Span (Range)	25		30		60		1000		1000	
Average	12.49	12.57	5.47	5.41	4.55	4.27	57.48	57.45	-1.51	-2.54
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
14:10:20	7.9	7.9	8.6	8.5	8.9	8.8	74.4	74.5	-1.3	-2.3
14:11:20	14.7	14.8	5.0	4.9	4.3	4.1	76.2	76.3	-1.3	-2.3
14:12:20	13.7	13.8	4.9	4.8	10.1	10.0	47.8	47.7	-0.9	-1.9
14:13:20	9.5	9.5	7.4	7.3	4.3	4.1	56.2	56.2	-0.4	-1.5
14:14:20	14.7	14.8	4.7	4.6	3.5	3.2	72.8	72.8	-0.8	-1.8
14:15:20	12.9	12.9	5.3	5.3	5.8	5.5	60.3	60.3	-0.8	-1.8
14:16:20	8.3	8.3	8.3	8.2	3.9	3.6	65.5	65.5	-0.9	-1.9
14:17:20	15.3	15.5	4.5	4.4	4.6	4.4	59.0	59.0	-0.7	-1.7
14:18:20	13.8	13.9	4.8	4.7	6.8	6.6	45.7	45.6	-1.1	-2.2
14:19:20	13.5	13.6	5.1	5.0	8.0	7.8	38.4	38.2	-1.1	-2.1
14:20:20	8.4	8.4	7.7	7.7	3.5	3.2	58.0	58.0	-1.1	-2.1
14:21:20	13.5	13.6	5.6	5.5	2.8	2.5	73.2	73.3	-1.4	-2.5
14:22:20	12.1	12.1	6.0	5.9	4.0	3.7	52.7	52.6	-1.4	-2.4
14:23:20	10.6	10.6	7.0	7.0	3.2	2.8	65.4	65.4	-1.2	-2.2
14:24:20	16.0	16.2	3.7	3.7	3.8	3.5	48.1	48.1	-1.1	-2.1
14:25:20	11.6	11.7	5.7	5.7	4.5	4.2	51.8	51.7	-1.2	-2.2
14:26:20	10.0	10.1	7.2	7.2	3.0	2.7	91.4	91.6	-1.1	-2.1
14:27:20	13.8	13.9	5.4	5.3	3.5	3.2	75.6	75.7	-1.2	-2.2
14:28:20	11.3	11.3	6.2	6.2	4.0	3.7	68.9	68.9	-1.7	-2.7
14:29:20	12.7	12.8	5.9	5.9	3.2	2.9	83.0	83.1	-1.3	-2.4
14:30:20	14.8	14.9	4.4	4.4	5.4	5.1	68.9	68.9	-1.5	-2.6
14:31:20	9.5	9.5	7.1	7.0	4.1	3.9	101.3	101.5	-1.4	-2.4
14:32:20	13.2	13.3	5.6	5.5	3.5	3.2	77.6	77.7	-1.5	-2.5
14:33:20	14.3	14.4	4.9	4.9	4.4	4.2	54.9	54.9	-1.2	-2.2
14:34:20	10.0	10.1	6.8	6.7	3.6	3.3	79.4	79.5	-1.6	-2.6
14:35:20	14.3	14.4	4.8	4.8	3.3	3.0	73.0	73.0	-1.3	-2.3
14:36:20	11.1	11.1	6.4	6.3	2.8	2.5	74.8	74.9	-1.2	-2.2
14:37:20	12.0	12.1	6.4	6.4	2.8	2.5	80.1	80.2	-1.3	-2.3
14:38:20	13.6	13.7	5.2	5.2	2.7	2.4	73.9	74.0	-1.3	-2.4
14:39:20	11.7	11.7	6.2	6.1	2.2	1.8	103.0	103.3	-1.4	-2.4
14:40:20	13.9	14.0	4.9	4.9	3.1	2.8	75.8	75.9	-1.4	-2.4
14:41:20	13.6	13.7	4.8	4.7	6.3	6.0	50.9	50.8	-1.6	-2.7
14:42:20	9.2	9.3	7.5	7.4	60.4	61.7	67.3	67.3	-1.5	-2.6
14:43:20	14.2	14.3	5.0	4.9	16.2	16.3	58.5	58.5	-1.4	-2.4
14:44:20	12.6	12.7	5.4	5.4	4.6	4.4	54.6	54.6	-1.7	-2.7
14:45:20	11.3	11.4	6.6	6.5	3.4	3.1	68.8	68.8	-1.6	-2.6
14:46:20	15.8	16.0	3.7	3.7	6.8	6.6	37.9	37.8	-1.8	-2.8
14:47:20	12.2	12.3	5.3	5.3	4.9	4.7	44.1	44.0	-1.6	-2.6
14:48:20	11.5	11.5	6.0	5.9	3.0	2.6	66.9	66.9	-1.6	-2.7
14:49:20	14.3	14.4	4.7	4.7	4.5	4.2	66.9	66.9	-1.5	-2.5
14:50:20	11.1	11.1	6.1	6.1	4.7	4.4	53.9	53.8	-1.7	-2.7
14:51:20	12.4	12.4	6.2	6.1	3.6	3.3	64.5	64.5	-1.4	-2.4
14:52:20	13.8	13.9	5.0	4.9	4.2	3.9	57.5	57.5	-1.8	-2.9
14:53:20	9.9	9.9	7.0	6.9	3.8	3.5	78.9	79.0	-1.7	-2.8
14:54:20	14.9	15.0	4.5	4.4	4.9	4.6	57.7	57.7	-1.7	-2.7
14:55:20	12.5	12.6	5.3	5.2	6.5	6.3	46.5	46.4	-1.8	-2.9
14:56:20	10.7	10.8	6.8	6.7	2.3	2.0	84.8	84.9	-1.7	-2.8
14:57:20	13.8	13.9	5.3	5.3	3.1	2.8	71.1	71.1	-1.3	-2.3
14:58:20	13.6	13.7	4.8	4.8	6.8	6.6	48.7	48.6	-1.3	-2.3
14:59:20	10.6	10.6	6.6	6.5	4.2	3.9	69.0	69.0	-1.6	-2.6
15:00:20	15.2	15.3	4.3	4.2	8.8	8.6	50.2	50.2	-1.6	-2.7
15:01:20	9.6	9.7	7.0	7.0	5.6	5.3	75.9	75.9	-1.7	-2.7
15:02:20	11.5	11.6	6.6	6.5	1.9	1.5	97.6	97.8	-1.5	-2.6
15:03:20	12.2	12.3	6.4	6.3	2.9	2.6	90.0	90.2	-1.6	-2.6
15:04:20	12.5	12.6	6.0	5.9	3.0	2.7	76.8	76.9	-1.7	-2.8
15:05:20	10.8	10.9	6.9	6.8	2.2	1.9	106.3	106.5	-1.6	-2.7
15:06:20	13.2	13.3	5.4	5.3	2.7	2.4	80.6	80.7	-1.5	-2.5
15:07:20	10.5	10.5	6.8	6.7	1.9	1.6	109.8	110.1	-1.6	-2.6
15:08:20	12.4	12.5	6.1	6.0	2.3	1.9	121.5	121.8	-1.4	-2.4
15:09:20	12.4	12.5	6.2	6.2	2.6	2.3	103.4	103.6	-1.4	-2.5
15:10:20	13.2	13.3	5.5	5.4	3.3	3.0	56.6	56.5	-1.8	-2.8
15:11:20	11.0	11.0	6.5	6.4	2.9	2.6	94.6	94.8	-1.6	-2.7
15:12:20	14.7	14.8	4.4	4.3	3.0	2.7	70.8	70.8	-1.9	-2.9
15:13:20	11.8	11.8	5.8	5.7	3.8	3.5	77.3	77.4	-1.8	-2.8
15:14:20	12.5	12.6	5.7	5.6	4.0	3.7	90.4	90.5	-1.9	-2.9
15:15:20	14.4	14.5	4.7	4.7	3.2	2.8	58.1	58.1	-1.6	-2.6
15:16:20	12.1	12.1	5.5	5.5	3.5	3.2	52.4	52.3	-1.8	-2.8
15:17:20	12.8	12.9	5.4	5.4	2.9	2.5	62.9	62.9	-1.7	-2.7
15:18:20	15.2	15.4	3.9	3.9	5.0	4.7	43.5	43.3	-1.8	-2.8
15:19:20	11.1	11.1	5.9	5.9	3.9	3.6	49.9	49.9	-1.4	-2.4
15:20:20	12.0	12.1	5.6	5.6	2.8	2.5	52.6	52.6	-1.3	-2.4
15:21:20	14.3	14.4	4.6	4.5	4.4	4.2	54.9	54.8	-1.4	-2.4
15:22:20	13.5	13.6	4.6	4.6	9.0	8.9	39.3	39.2	-1.5	-2.6
15:23:20	11.6	11.7	5.7	5.7	3.3	3.0	43.1	43.0	-1.4	-2.5
15:24:20	12.1	12.2	5.5	5.4	2.1	1.8	46.8	46.7	-1.7	-2.8
15:25:20	12.8	12.9	5.0	5.0	2.7	2.4	45.1	45.0	-1.7	-2.7
15:26:20	12.4	12.4	5.2	5.1	2.8	2.4	52.2	52.1	-1.6	-2.7
15:27:20	12.2	12.2	5.6	5.5	2.6	2.3	58.0	57.9	-1.7	-2.7
15:28:20	12.8	12.9	5.0	5.0	3.0	2.6	39.3	39.2	-1.8	-2.8
15:29:20	12.1	12.1	5.4	5.4	2.7	2.4	48.0	47.9	-1.6	-2.6

Stericycle - Incinerator Stack

Date	16-Jun-22									
Analyzer	O_2		CO_2		CO		NO_X		SO_2	
Low										
Zero Value *(Cv)*	0.0		0.0		0.0		0.0		0.0	
Direct *(C Dir)*	0.08		0.04		0.12		0.29		0.97	
Calibration Error *(ACE)*	0.53%	*PASS*	0.22%	*PASS*	0.60%	*PASS*	0.14%	*PASS*	0.46%	*PASS*
System Initial *(Csi)*	0.11		0.00		0.46		0.38		1.00	
System Post *(Csf)*	0.19		0.06		0.33		0.30		1.02	
Average *(Co)*	0.15		0.03		0.40		0.34		1.01	
System Bias Initial *(SBi)*	0.2%	*PASS*	-0.2%	*PASS*	1.7%	*PASS*	0.0%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	0.7%	*PASS*	0.1%	*PASS*	1.1%	*PASS*	0.0%	*PASS*	0.0%	*PASS*
Drift Assessment *(D)*	0.53%	*PASS*	0.33%	*PASS*	-0.65%	*PASS*	-0.04%	*PASS*	0.01%	*PASS*
Mid										
Mid Value *(Cv)*	7.50		8.98		10.00		105.00		106.16	
Direct *(C Dir)*	7.43		8.85		9.95		104.37		106.01	
Calibration Error *(ACE)*	-0.47%	*PASS*	-0.72%	*PASS*	-0.25%	*PASS*	-0.30%	*PASS*	-0.07%	*PASS*
System Initial *(Csi)*							104.83		106.33	
System Post *(Csf)*							104.72		106.42	
Average *(Cm)*	-		-		-		104.775		106.4	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-	0.2%	*PASS*	0.2%	*PASS*
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-	0.2%	*PASS*	0.2%	*PASS*
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-	-0.05%	*PASS*	0.04%	*PASS*
High										
High Value *(CS/Cv)*	15.00		18.0		20.0		210.0		212.3	
Direct *(C Dir)*	14.85		18.12		19.88		211.20		210.98	
Calibration Error *(ACE)*	-1.00%	*PASS*	0.83%	*PASS*	-0.60%	*PASS*	0.57%	*PASS*	-0.63%	*PASS*
System Initial *(Csi)*	14.96		18.04		19.79					
System Post *(Csf)*	14.79		18.1		19.85					
Average *(Cm)*	14.875		18.1		19.8		-		-	
System Bias Initial *(SBi)*	0.7%	*PASS*	-0.4%	*PASS*	-0.4%	*PASS*	N/A	-	N/A	-
System Bias Post *(SBf)*	-0.4%	*PASS*	-0.1%	*PASS*	-0.1%	*PASS*	N/A	-	N/A	-
Drift Assessment *(D)*	-1.13%	*PASS*	0.33%	*PASS*	0.30%	*PASS*	N/A	-	N/A	-
Analyser Span (Range)	25		30		60		1000		1000	
Average	12.49	12.57	5.47	5.41	4.55	4.27	57.48	57.45	-1.51	-2.54
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
15:30:20	13.4	13.5	5.3	5.2	5.4	5.2	67.8	67.8	-1.7	-2.7
15:31:20	15.3	15.4	3.6	3.6	22.8	23.0	30.1	29.9	-1.7	-2.8
15:32:20	12.4	12.5	5.1	5.1	6.0	5.8	33.3	33.1	-1.4	-2.5
15:33:21	12.1	12.2	5.2	5.2	4.0	3.7	39.2	39.1	-1.6	-2.6
15:34:20	12.3	12.4	5.1	5.0	4.0	3.8	36.2	36.1	-1.4	-2.4
15:35:20	12.3	12.4	5.0	4.9	3.9	3.6	37.5	37.4	-1.6	-2.6
15:36:21	12.4	12.5	4.9	4.9	3.3	3.0	44.9	44.8	-1.7	-2.8
15:37:21	11.8	11.9	5.3	5.2	3.0	2.7	47.8	47.7	-1.9	-2.9
15:38:21	11.9	11.9	5.6	5.6	2.8	2.5	52.7	52.7	-1.7	-2.8
15:39:21	12.5	12.6	4.9	4.9	2.7	2.4	45.2	45.1	-1.8	-2.8
15:40:21	12.3	12.4	5.0	5.0	2.9	2.6	34.4	34.2	-1.6	-2.6
15:41:21	12.0	12.1	5.2	5.1	3.3	3.0	33.1	33.0	-1.6	-2.6
15:42:21	11.5	11.5	6.0	6.0	3.2	2.9	62.9	62.9	-1.7	-2.7
15:43:21	12.8	12.8	5.0	4.9	3.2	2.9	42.2	42.0	-1.9	-2.9
15:44:21	12.2	12.3	5.3	5.2	3.2	2.9	38.2	38.1	-1.7	-2.8
15:45:21	12.9	13.0	4.8	4.7	3.1	2.8	32.7	32.5	-1.9	-2.9
15:46:21	13.0	13.1	4.7	4.7	3.0	2.7	38.2	38.1	-1.8	-2.8
15:47:21	12.8	12.9	4.8	4.8	3.1	2.7	35.3	35.1	-1.8	-2.9
15:48:21	12.8	12.9	4.8	4.8	3.2	2.8	32.3	32.1	-1.6	-2.6
15:49:21	12.7	12.8	4.9	4.9	2.9	2.5	42.8	42.7	-1.5	-2.5
15:50:21	12.5	12.5	5.1	5.0	2.6	2.2	49.0	49.0	-1.6	-2.7
15:51:21	11.6	11.7	5.7	5.6	2.8	2.4	39.6	39.4	-1.5	-2.6
15:52:21	11.9	11.9	5.6	5.5	3.0	2.7	34.7	34.6	-1.7	-2.7
15:53:21	11.9	12.0	5.6	5.5	3.0	2.7	38.0	37.9	-1.4	-2.5
15:54:21	12.5	12.6	5.2	5.2	3.1	2.8	33.9	33.7	-1.8	-2.8
15:55:21	13.1	13.2	4.6	4.5	3.5	3.2	30.1	29.9	-1.7	-2.7
15:56:21	12.9	13.0	4.8	4.7	3.7	3.4	31.8	31.7	-1.6	-2.6
15:57:21	12.4	12.5	5.2	5.1	3.3	3.0	46.0	45.9	-1.4	-2.4
15:58:21	12.9	13.0	4.7	4.7	3.1	2.8	38.5	38.3	-1.6	-2.6
15:59:21	12.3	12.4	5.2	5.1	3.1	2.8	40.2	40.1	-1.7	-2.7
16:00:21	13.3	13.4	4.6	4.5	2.9	2.6	34.9	34.8	-1.5	-2.6
16:01:21	13.4	13.5	4.4	4.4	3.2	2.9	35.2	35.1	-1.5	-2.5
16:02:21	13.3	13.3	4.5	4.4	5.1	4.8	27.8	27.6	-1.5	-2.6
16:03:21	13.0	13.1	4.7	4.6	4.6	4.3	29.6	29.4	-1.6	-2.6
16:04:21	13.0	13.1	4.7	4.7	2.5	2.2	39.9	39.8	-1.4	-2.5
16:05:21	11.6	11.7	5.7	5.7	2.9	2.6	54.9	54.9	-1.8	-2.8
16:06:21	12.9	13.0	5.0	5.0	3.5	3.2	40.9	40.8	-1.6	-2.6
16:07:21	12.5	12.6	5.0	4.9	2.5	2.2	31.9	31.7	-1.5	-2.5
16:08:21	12.4	12.5	5.1	5.0	2.9	2.6	34.4	34.3	-1.5	-2.5
16:09:21	12.6	12.6	5.0	5.0	2.8	2.4	35.7	35.6	-1.6	-2.7

Stericycle - Incinerator Stack

Date	17-Jun-22									
Analyzer	O_2		CO_2		CO		NO_X		SO_2	
Low										
Zero Value *(Cv)*	0.0		0.0		0.0		0.0		0.0	
Direct *(C Dir)*	0		0.00		0.09		-0.28		-1.03	
Calibration Error *(ACE)*	0.00%	*PASS*	0.00%	*PASS*	0.45%	*PASS*	-0.13%	*PASS*	-0.49%	*PASS*
System Initial *(Csi)*	0.17		0.03		0.21		-0.32		-0.10	
System Post *(Csf)*	0.09		0.03		0.18		-0.49		-0.04	
Average *(Co)*	0.13		0.03		0.20		-0.41		-0.07	
System Bias Initial *(SBi)*	1.1%	*PASS*	0.2%	*PASS*	0.6%	*PASS*	0.0%	*PASS*	0.4%	*PASS*
System Bias Post *(SBf)*	0.6%	*PASS*	0.2%	*PASS*	0.5%	*PASS*	-0.1%	*PASS*	0.5%	*PASS*
Drift Assessment *(D)*	-0.53%	*PASS*	0.00%	*PASS*	-0.15%	*PASS*	-0.08%	*PASS*	0.03%	*PASS*
Mid										
Mid Value *(Cv)*	7.50		8.98		10.00		105.00		106.16	
Direct *(C Dir)*	7.64		8.84		9.97		104.21		105.24	
Calibration Error *(ACE)*	0.93%	*PASS*	-0.78%	*PASS*	-0.15%	*PASS*	-0.38%	*PASS*	-0.43%	*PASS*
System Initial *(Csi)*							104.27		104.89	
System Post *(Csf)*							104.56		104.73	
Average *(Cm)*	-		-		-		104.415		104.8	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-	0.0%	*PASS*	-0.2%	*PASS*
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-	0.2%	*PASS*	-0.2%	*PASS*
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-	0.14%	*PASS*	-0.08%	*PASS*
High										
High Value *(CS/Cv)*	15.00		18.0		20.0		210.0		212.3	
Direct *(C Dir)*	15.17		17.87		20.05		208.69		212.20	
Calibration Error *(ACE)*	1.13%	*PASS*	-0.56%	*PASS*	0.25%	*PASS*	-0.62%	*PASS*	-0.06%	*PASS*
System Initial *(Csi)*	15.07		17.23		20.39					
System Post *(Csf)*	15.02		17.49		19.94					
Average *(Cm)*	15.045		17.4		20.2		-		-	
System Bias Initial *(SBi)*	-0.7%	*PASS*	-3.6%	*PASS*	1.7%	*PASS*	N/A	-	N/A	-
System Bias Post *(SBf)*	-1.0%	*PASS*	-2.1%	*PASS*	-0.5%	*PASS*	N/A	-	N/A	-
Drift Assessment *(D)*	-0.33%	*PASS*	1.45%	*PASS*	-2.25%	*PASS*	N/A	-	N/A	-
Analyser Span (Range)	25		30		60		1000		1000	
Average	11.94	11.88	5.88	6.06	4.75	4.56	53.22	53.72	-2.76	-2.72
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
9:05:50	11.9	11.8	6.1	6.3	3.7	3.5	61.0	61.5	-1.0	-0.9
9:06:50	9.2	9.1	8.0	8.2	3.2	3.0	60.8	61.3	-0.9	-0.8
9:07:50	14.5	14.4	4.8	4.9	2.0	1.8	58.2	58.7	-1.0	-1.0
9:08:50	11.7	11.7	5.9	6.0	2.1	1.9	50.7	51.2	-1.1	-1.1
9:09:50	10.9	10.8	6.8	7.1	1.6	1.4	56.4	56.9	-1.3	-1.2
9:10:50	14.3	14.3	4.6	4.7	2.3	2.2	52.4	52.9	-1.3	-1.3
9:11:50	8.0	7.9	8.0	8.3	39.8	39.7	56.9	57.4	-1.4	-1.3
9:12:50	14.6	14.6	5.2	5.3	40.1	39.9	52.1	52.6	-1.5	-1.4
9:13:50	12.7	12.6	5.5	5.6	4.6	4.5	48.3	48.8	-1.7	-1.6
9:14:50	9.6	9.5	7.4	7.7	1.5	1.3	59.2	59.7	-1.9	-1.9
9:15:50	14.5	14.5	4.7	4.8	1.5	1.3	60.2	60.7	-1.7	-1.7
9:16:50	10.4	10.3	6.5	6.7	1.9	1.7	64.9	65.4	-2.1	-2.0
9:17:50	11.4	11.4	6.9	7.1	1.6	1.4	80.0	80.6	-2.1	-2.0
9:18:50	14.2	14.2	5.0	5.2	1.8	1.6	57.0	57.5	-2.0	-2.0
9:19:50	9.5	9.4	7.2	7.4	1.8	1.6	57.4	57.9	-2.4	-2.3
9:20:50	14.2	14.1	5.2	5.3	3.5	3.3	47.4	47.9	-2.0	-2.0
9:21:50	12.8	12.7	5.3	5.5	4.7	4.5	43.2	43.7	-2.1	-2.1
9:22:50	9.9	9.8	7.0	7.2	1.9	1.7	56.2	56.7	-2.2	-2.2
9:23:50	15.5	15.5	4.1	4.2	12.8	12.7	38.4	38.9	-2.0	-2.0
9:24:50	11.9	11.8	5.5	5.7	10.4	10.2	34.3	34.7	-2.2	-2.2
9:25:50	10.5	10.5	6.7	6.9	2.5	2.3	45.6	46.1	-2.5	-2.4
9:26:50	15.6	15.5	4.0	4.2	22.3	22.2	32.2	32.6	-2.4	-2.4
9:27:50	11.5	11.4	5.7	5.9	13.2	13.0	31.0	31.5	-2.4	-2.3
9:28:50	10.2	10.1	7.0	7.3	2.5	2.4	48.0	48.5	-2.3	-2.3
9:29:50	15.2	15.2	4.2	4.3	18.5	18.3	32.6	33.1	-2.6	-2.6
9:30:50	10.9	10.8	6.1	6.3	9.1	8.9	32.0	32.4	-2.3	-2.3
9:31:50	10.2	10.1	7.4	7.6	2.7	2.5	47.1	47.5	-2.4	-2.4
9:32:50	15.9	15.8	4.0	4.1	22.3	22.1	27.5	27.9	-2.7	-2.6
9:33:50	11.8	11.7	5.5	5.7	10.3	10.1	25.4	25.9	-2.8	-2.8
9:34:50	11.2	11.1	6.3	6.5	2.1	1.9	31.5	32.0	-2.8	-2.8
9:35:50	11.7	11.6	5.9	6.1	1.5	1.3	32.7	33.2	-2.9	-2.8
9:36:50	11.1	11.1	6.2	6.4	1.3	1.1	32.5	32.9	-2.8	-2.7
9:37:50	14.5	14.4	5.2	5.3	11.4	11.2	32.1	32.5	-2.8	-2.8
9:38:50	13.3	13.3	4.8	4.9	12.5	12.3	22.2	22.6	-3.1	-3.1
9:39:50	11.8	11.7	5.7	5.9	3.4	3.2	24.8	25.2	-2.9	-2.8
9:40:50	10.2	10.1	6.5	6.7	2.2	2.0	35.1	35.6	-2.9	-2.8
9:41:50	12.7	12.6	6.0	6.2	2.9	2.7	54.6	55.1	-2.9	-2.9
9:42:50	12.7	12.7	5.4	5.5	4.0	3.8	41.8	42.3	-3.0	-2.9
9:43:50	9.6	9.6	7.2	7.4	1.6	1.4	53.5	54.0	-3.0	-3.0
9:44:50	15.1	15.0	4.5	4.6	6.0	5.8	39.7	40.2	-2.9	-2.9
9:45:50	12.4	12.3	5.3	5.5	6.6	6.4	33.4	33.9	-3.2	-3.2
9:46:50	10.4	10.3	6.7	6.9	1.6	1.4	43.9	44.3	-3.1	-3.1
9:47:50	12.6	12.6	6.2	6.4	2.2	2.0	53.9	54.4	-2.9	-2.9
9:48:50	14.7	14.7	4.3	4.4	6.8	6.6	30.4	30.8	-3.2	-3.1
9:49:50	10.8	10.7	6.3	6.5	2.6	2.4	38.5	39.0	-3.1	-3.1
9:50:50	11.2	11.1	6.4	6.6	0.7	0.5	49.9	50.4	-3.0	-2.9
9:51:50	15.3	15.3	4.3	4.4	7.1	6.9	39.8	40.3	-3.0	-3.0
9:52:50	10.6	10.5	6.4	6.6	3.3	3.1	40.9	41.4	-3.0	-3.0
9:53:50	10.0	10.0	7.6	7.8	1.7	1.5	61.4	61.9	-3.2	-3.1
9:54:50	15.7	15.6	4.1	4.2	8.7	8.5	34.1	34.6	-2.9	-2.9
9:55:50	10.4	10.4	6.4	6.6	4.0	3.8	33.9	34.3	-2.9	-2.8
9:56:50	10.0	9.9	7.1	7.3	1.4	1.2	44.9	45.4	-3.0	-2.9
9:57:50	15.3	15.2	4.3	4.4	7.4	7.2	39.3	39.7	-2.9	-2.8
9:58:50	10.7	10.6	6.0	6.2	5.4	5.2	34.3	34.8	-3.1	-3.1
9:59:50	9.1	9.1	8.0	8.3	3.4	3.2	50.2	50.7	-3.0	-3.0
10:00:50	16.1	16.0	3.9	4.0	17.0	16.8	30.3	30.8	-3.3	-3.2
10:01:50	11.2	11.1	5.7	5.9	7.2	7.0	29.3	29.7	-3.3	-3.3
10:02:50	10.1	10.1	6.8	7.0	1.4	1.2	45.9	46.4	-3.2	-3.2
10:03:50	9.3	9.3	7.4	7.7	1.2	1.0	74.2	74.7	-3.2	-3.2
10:04:50	12.2	12.2	5.9	6.0	1.1	0.9	75.9	76.4	-2.9	-2.9
10:05:50	12.5	12.4	5.4	5.6	0.9	0.7	71.4	71.9	-3.2	-3.2
10:06:50	12.3	12.3	5.4	5.6	0.6	0.4	68.7	69.3	-3.4	-3.3
10:07:50	10.8	10.8	6.4	6.6	0.8	0.6	75.6	76.2	-3.1	-3.1
10:08:50	12.1	12.0	6.1	6.3	1.0	0.8	82.8	83.3	-3.0	-3.0
10:09:50	12.4	12.3	5.6	5.8	1.1	1.0	72.5	73.0	-3.0	-3.0
10:10:50	11.3	11.2	6.1	6.3	1.1	0.9	71.3	71.8	-3.4	-3.3
10:11:50	10.6	10.5	6.8	7.0	1.0	0.8	84.3	84.9	-3.2	-3.1
10:12:50	12.3	12.2	5.6	5.7	1.0	0.8	80.7	81.3	-3.2	-3.2
10:13:50	11.3	11.3	6.0	6.2	0.9	0.7	80.9	81.4	-3.2	-3.2
10:14:50	11.2	11.2	6.6	6.8	1.1	0.9	89.1	89.7	-3.4	-3.3
10:15:50	12.8	12.7	5.1	5.2	0.9	0.7	69.4	70.0	-3.4	-3.4
10:16:50	11.8	11.8	5.4	5.6	1.0	0.8	66.0	66.5	-3.5	-3.5
10:17:50	9.3	9.2	7.2	7.4	1.0	0.8	75.2	75.8	-3.6	-3.5
10:18:50	12.5	12.5	5.3	5.5	1.0	0.8	75.4	75.9	-3.5	-3.5
10:19:50	12.1	12.0	5.4	5.6	1.0	0.8	73.6	74.2	-3.7	-3.7
10:20:50	12.3	12.3	5.3	5.5	1.0	0.8	71.9	72.4	-3.5	-3.4
10:21:50	11.6	11.5	5.7	5.8	0.5	0.3	71.4	72.0	-3.4	-3.3
10:22:50	11.4	11.4	6.0	6.2	1.3	1.1	76.0	76.5	-3.2	-3.2
10:23:50	12.3	12.2	5.4	5.5	0.9	0.7	68.9	69.4	-3.4	-3.4
10:24:50	11.4	11.4	5.9	6.1	0.6	0.4	77.4	77.9	-3.5	-3.4

Stericycle - Incinerator Stack

Date	17-Jun-22									
Analyzer	O_2		CO_2		CO		NO_X		SO_2	
Low										
Zero Value *(Cv)*	0.0		0.0		0.0		0.0		0.0	
Direct *(C Dir)*	0		0.00		0.09		-0.28		-1.03	
Calibration Error *(ACE)*	0.00%	*PASS*	0.00%	*PASS*	0.45%	*PASS*	-0.13%	*PASS*	-0.49%	*PASS*
System Initial *(Csi)*	0.17		0.03		0.21		-0.32		-0.10	
System Post *(Csf)*	0.09		0.03		0.18		-0.49		-0.04	
Average *(Co)*	0.13		0.03		0.20		-0.41		-0.07	
System Bias Initial *(SBi)*	1.1%	*PASS*	0.2%	*PASS*	0.6%	*PASS*	0.0%	*PASS*	0.4%	*PASS*
System Bias Post *(SBf)*	0.6%	*PASS*	0.2%	*PASS*	0.5%	*PASS*	-0.1%	*PASS*	0.5%	*PASS*
Drift Assessment *(D)*	-0.53%	*PASS*	0.00%	*PASS*	-0.15%	*PASS*	-0.08%	*PASS*	0.03%	*PASS*
Mid										
Mid Value *(Cv)*	7.50		8.98		10.00		105.00		106.16	
Direct *(C Dir)*	7.64		8.84		9.97		104.21		105.24	
Calibration Error *(ACE)*	0.93%	*PASS*	-0.78%	*PASS*	-0.15%	*PASS*	-0.38%	*PASS*	-0.43%	*PASS*
System Initial *(Csi)*							104.27		104.89	
System Post *(Csf)*							104.56		104.73	
Average *(Cm)*	-		-		-		104.415		104.8	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-	0.0%	*PASS*	-0.2%	*PASS*
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-	0.2%	*PASS*	-0.2%	*PASS*
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-	0.14%	*PASS*	-0.08%	*PASS*
High										
High Value *(CS/Cv)*	15.00		18.0		20.0		210.0		212.3	
Direct *(C Dir)*	15.17		17.87		20.05		208.69		212.20	
Calibration Error *(ACE)*	1.13%	*PASS*	-0.56%	*PASS*	0.25%	*PASS*	-0.62%	*PASS*	-0.06%	*PASS*
System Initial *(Csi)*	15.07		17.23		20.39					
System Post *(Csf)*	15.02		17.49		19.94					
Average *(Cm)*	15.045		17.4		20.2		-		-	
System Bias Initial *(SBi)*	-0.7%	*PASS*	-3.6%	*PASS*	1.7%	*PASS*	N/A	-	N/A	-
System Bias Post *(SBf)*	-1.0%	*PASS*	-2.1%	*PASS*	-0.5%	*PASS*	N/A	-	N/A	-
Drift Assessment *(D)*	-0.33%	*PASS*	1.45%	*PASS*	-2.25%	*PASS*	N/A	-	N/A	-
Analyser Span (Range)	25		30		60		1000		1000	
Average	11.94	11.88	5.88	6.06	4.75	4.56	53.22	53.72	-2.76	-2.72
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
10:25:50	12.6	12.5	5.1	5.3	0.3	0.1	66.8	67.3	-3.3	-3.3
10:26:50	11.3	11.2	5.7	5.9	0.4	0.2	63.0	63.5	-3.4	-3.4
10:27:50	11.0	10.9	6.0	6.2	0.8	0.6	58.2	58.7	-3.3	-3.3
10:28:50	11.4	11.3	5.8	6.0	0.8	0.6	58.0	58.5	-3.5	-3.5
10:29:50	10.2	10.2	6.5	6.7	0.9	0.7	59.4	59.9	-3.6	-3.6
10:30:50	10.7	10.6	6.7	6.9	0.9	0.7	67.8	68.3	-3.7	-3.7

Stericycle - Oxidizer EXIT

Date	17-Jun-22	
Analyzer	**THC**	
Low		
Zero Value *(Cv)*	0.0	
Direct *(C Dir)*	0.28	
Calibration Error *(ACE)*	1.12%	*PASS*
System Initial *(Csi)*	0.04	
System Post *(Csf)*	0.07	
Average *(Co)*	0.06	
System Bias Initial *(SBi)*	-1.0%	*PASS*
System Bias Post *(SBf)*	-0.8%	*PASS*
Drift Assessment *(D)*	0.12%	*PASS*
Mid		
Mid Value *(Cv)*	10.0	
Direct *(C Dir)*	9.56	
Calibration Error *(ACE)*	-1.76%	*PASS*
System Initial *(Csi)*		
System Post *(Csf)*		
Average *(Cm)*	-	
System Bias Initial *(SBi)*		
System Bias Post *(SBf)*		
Drift Assessment *(D)*		
High		
High Value *(CS/Cv)*	25.0	
Direct *(C Dir)*	25.20	
Calibration Error *(ACE)*	0.80%	*PASS*
System Initial *(Csi)*	25.08	
System Post *(Csf)*	25.11	
Average *(Cm)*	25.1	
System Bias Initial *(SBi)*	-0.5%	*PASS*
System Bias Post *(SBf)*	-0.4%	*PASS*
Drift Assessment *(D)*	0.12%	*PASS*
Analyser Span (Range)	100	
Average	7.57	7.50
Time	**Recorded**	**Corrected**
11:50:44 AM	8.2	8.1
11:51:44 AM	8.3	8.3
11:52:44 AM	8.2	8.1
11:53:44 AM	8.0	7.9
11:54:44 AM	8.0	7.9
11:55:44 AM	7.9	7.8
11:56:44 AM	8.0	7.9
11:57:44 AM	7.7	7.6
11:58:44 AM	7.8	7.7
11:59:44 AM	7.5	7.4
12:00:44 PM	7.6	7.6
12:01:44 PM	7.5	7.4
12:02:44 PM	7.5	7.4
12:03:44 PM	7.5	7.4
12:04:44 PM	7.8	7.7
12:05:44 PM	7.7	7.7
12:06:44 PM	7.7	7.6
12:07:44 PM	7.9	7.8
12:08:44 PM	7.9	7.8
12:09:44 PM	7.8	7.7
12:10:44 PM	7.9	7.8
12:11:44 PM	7.8	7.7
12:12:44 PM	7.8	7.7
12:13:44 PM	7.9	7.8
12:14:44 PM	7.8	7.7
12:15:44 PM	7.9	7.8
12:16:44 PM	7.7	7.7
12:17:44 PM	7.7	7.7
12:18:44 PM	7.4	7.4
12:19:44 PM	7.3	7.2
12:20:44 PM	7.3	7.2
12:21:44 PM	7.4	7.3
12:22:44 PM	7.5	7.4
12:23:44 PM	7.5	7.5
12:24:44 PM	7.6	7.5
12:25:44 PM	7.7	7.6
12:26:44 PM	7.7	7.6
12:27:44 PM	7.6	7.5
12:28:44 PM	7.3	7.3
12:29:44 PM	7.2	7.1
12:30:44 PM	7.1	7.1
12:31:44 PM	7.1	7.0
12:32:44 PM	7.2	7.1
12:33:44 PM	7.6	7.5
12:34:44 PM	7.7	7.6
12:35:44 PM	7.5	7.4
12:36:44 PM	7.5	7.4
12:37:44 PM	7.7	7.6
12:38:44 PM	7.5	7.5
12:39:44 PM	7.4	7.3

Stericycle - Oxidizer EXIT

Date	17-Jun-22	
Analyzer	**THC**	
Low		
Zero Value *(Cv)*	0.0	
Direct *(C Dir)*	0.28	
Calibration Error *(ACE)*	1.12%	*PASS*
System Initial *(Csi)*	0.04	
System Post *(Csf)*	0.07	
Average *(Co)*	0.06	
System Bias Initial *(SBi)*	-1.0%	*PASS*
System Bias Post *(SBf)*	-0.8%	*PASS*
Drift Assessment *(D)*	0.12%	*PASS*
Mid		
Mid Value *(Cv)*	10.0	
Direct *(C Dir)*	9.56	
Calibration Error *(ACE)*	-1.76%	*PASS*
System Initial *(Csi)*		
System Post *(Csf)*		
Average *(Cm)*	-	
System Bias Initial *(SBi)*		
System Bias Post *(SBf)*		
Drift Assessment *(D)*		
High		
High Value *(CS/Cv)*	25.0	
Direct *(C Dir)*	25.20	
Calibration Error *(ACE)*	0.80%	*PASS*
System Initial *(Csi)*	25.08	
System Post *(Csf)*	25.11	
Average *(Cm)*	25.1	
System Bias Initial *(SBi)*	-0.5%	*PASS*
System Bias Post *(SBf)*	-0.4%	*PASS*
Drift Assessment *(D)*	0.12%	*PASS*
Analyser Span (Range)	100	
Average	7.57	7.50
Time	**Recorded**	**Corrected**
12:40:44 PM	7.4	7.3
12:41:44 PM	7.4	7.3
12:42:44 PM	7.4	7.3
12:43:44 PM	7.1	7.0
12:44:44 PM	7.0	7.0
12:45:44 PM	7.0	6.9
12:46:44 PM	7.0	7.0
12:47:44 PM	7.3	7.2
12:48:44 PM	7.0	6.9
12:49:44 PM	7.2	7.1
12:50:44 PM	7.3	7.3

Stericycle - Oxidizer EXIT

Date	17-Jun-22	
Analyzer	**THC**	
Low		
Zero Value *(Cv)*	0.0	
Direct *(C Dir)*	0.28	
Calibration Error *(ACE)*	1.12%	*PASS*
System Initial *(Csi)*	0.04	
System Post *(Csf)*	0.07	
Average *(Co)*	0.06	
System Bias Initial *(SBi)*	-1.0%	*PASS*
System Bias Post *(SBf)*	-0.8%	*PASS*
Drift Assessment *(D)*	0.12%	*PASS*
Mid		
Mid Value *(Cv)*	10.0	
Direct *(C Dir)*	9.56	
Calibration Error *(ACE)*	-1.76%	*PASS*
System Initial *(Csi)*		
System Post *(Csf)*		
Average *(Cm)*	-	
System Bias Initial *(SBi)*		
System Bias Post *(SBf)*		
Drift Assessment *(D)*		
High		
High Value *(CS/Cv)*	25.0	
Direct *(C Dir)*	25.20	
Calibration Error *(ACE)*	0.80%	*PASS*
System Initial *(Csi)*	25.08	
System Post *(Csf)*	25.11	
Average *(Cm)*	25.1	
System Bias Initial *(SBi)*	-0.5%	*PASS*
System Bias Post *(SBf)*	-0.4%	*PASS*
Drift Assessment *(D)*	0.12%	*PASS*
Analyser Span (Range)	100	
Average	7.91	7.84
Time	**Recorded**	**Corrected**
12:51:44 PM	7.2	7.2
12:52:44 PM	7.5	7.4
12:53:44 PM	7.4	7.3
12:54:44 PM	7.1	7.0
12:55:44 PM	7.1	7.1
12:56:44 PM	7.2	7.1
12:57:44 PM	7.1	7.1
12:58:44 PM	7.3	7.2
12:59:44 PM	7.2	7.1
1:00:44 PM	7.1	7.1
1:01:44 PM	7.2	7.1
1:02:44 PM	7.1	7.0
1:03:44 PM	7.2	7.1
1:04:44 PM	7.1	7.0
1:05:44 PM	7.1	7.1
1:06:44 PM	7.9	7.8
1:07:44 PM	7.5	7.5
1:08:44 PM	7.3	7.2
1:09:44 PM	7.8	7.7
1:10:44 PM	7.9	7.8
1:11:44 PM	8.1	8.0
1:12:44 PM	8.1	8.0
1:13:44 PM	8.3	8.2
1:14:44 PM	8.1	8.0
1:15:44 PM	7.9	7.9
1:16:44 PM	7.7	7.6
1:17:44 PM	7.3	7.2
1:18:44 PM	7.2	7.2
1:19:44 PM	7.3	7.3
1:20:44 PM	7.4	7.3
1:21:44 PM	7.2	7.2
1:22:44 PM	7.4	7.3
1:23:44 PM	7.5	7.4
1:24:44 PM	7.5	7.4
1:25:44 PM	7.5	7.4
1:26:44 PM	7.4	7.3

Stericycle - Oxidizer EXIT

Date	17-Jun-22		
Analyzer	**THC**		
Low			
Zero Value *(Cv)*	0.0		
Direct *(C Dir)*	0.28		
Calibration Error *(ACE)*	1.12%	*PASS*	
System Initial *(Csi)*	0.04		
System Post *(Csf)*	0.07		
Average *(Co)*	0.06		
System Bias Initial *(SBi)*	-1.0%	*PASS*	
System Bias Post *(SBf)*	-0.8%	*PASS*	
Drift Assessment *(D)*	0.12%	*PASS*	
Mid			
Mid Value *(Cv)*	10.0		
Direct *(C Dir)*	9.56		
Calibration Error *(ACE)*	-1.76%	*PASS*	
System Initial *(Csi)*			
System Post *(Csf)*			
Average *(Cm)*	-		
System Bias Initial *(SBi)*			
System Bias Post *(SBf)*			
Drift Assessment *(D)*			
High			
High Value *(CS/Cv)*	25.0		
Direct *(C Dir)*	25.20		
Calibration Error *(ACE)*	0.80%	*PASS*	
System Initial *(Csi)*	25.08		
System Post *(Csf)*	25.11		
Average *(Cm)*	25.1		
System Bias Initial *(SBi)*	-0.5%	*PASS*	
System Bias Post *(SBf)*	-0.4%	*PASS*	
Drift Assessment *(D)*	0.12%	*PASS*	
Analyser Span (Range)	100		
Average	7.91	7.84	
Time	**Recorded**	**Corrected**	
1:27:44 PM	7.6	7.5	
1:28:44 PM	7.5	7.4	
1:29:44 PM	7.3	7.3	
1:30:44 PM	8.4	8.4	
1:31:44 PM	8.5	8.5	
1:32:44 PM	8.5	8.4	
1:33:44 PM	8.6	8.5	
1:34:44 PM	8.6	8.6	
1:35:44 PM	9.0	8.9	
1:36:44 PM	8.9	8.8	
1:37:44 PM	8.9	8.8	
1:38:44 PM	8.8	8.7	
1:39:44 PM	8.8	8.7	
1:40:44 PM	8.9	8.8	
1:41:44 PM	8.9	8.9	
1:42:44 PM	8.8	8.7	
1:43:44 PM	8.8	8.8	
1:44:44 PM	8.7	8.6	
1:45:44 PM	8.7	8.6	
1:46:44 PM	8.7	8.6	
1:47:44 PM	8.8	8.7	
1:48:44 PM	9.0	8.9	
1:49:44 PM	9.0	8.9	
1:50:44 PM	9.1	9.0	

Stericycle - Oxidizer EXIT

Date	17-Jun-22	
Analyzer	**THC**	
Low		
Zero Value *(Cv)*	0.0	
Direct *(C Dir)*	0.28	
Calibration Error *(ACE)*	1.12%	*PASS*
System Initial *(Csi)*	0.04	
System Post *(Csf)*	0.07	
Average *(Co)*	0.06	
System Bias Initial *(SBi)*	-1.0%	*PASS*
System Bias Post *(SBf)*	-0.8%	*PASS*
Drift Assessment *(D)*	0.12%	*PASS*
Mid		
Mid Value *(Cv)*	10.0	
Direct *(C Dir)*	9.56	
Calibration Error *(ACE)*	-1.76%	*PASS*
System Initial *(Csi)*		
System Post *(Csf)*		
Average *(Cm)*	-	
System Bias Initial *(SBi)*		
System Bias Post *(SBf)*		
Drift Assessment *(D)*		
High		
High Value *(CS/Cv)*	25.0	
Direct *(C Dir)*	25.20	
Calibration Error *(ACE)*	0.80%	*PASS*
System Initial *(Csi)*	25.08	
System Post *(Csf)*	25.11	
Average *(Cm)*	25.1	
System Bias Initial *(SBi)*	-0.5%	*PASS*
System Bias Post *(SBf)*	-0.4%	*PASS*
Drift Assessment *(D)*	0.12%	*PASS*
Analyser Span (Range)	100	
Average	8.46	8.39
Time	**Recorded**	**Corrected**
1:51:44 PM	8.8	8.7
1:52:44 PM	8.6	8.5
1:53:44 PM	8.7	8.6
1:54:44 PM	8.8	8.7
1:55:44 PM	8.7	8.7
1:56:44 PM	8.9	8.8
1:57:44 PM	9.1	9.0
1:58:44 PM	9.2	9.1
1:59:44 PM	9.2	9.2
2:00:44 PM	9.3	9.2
2:01:44 PM	9.6	9.5
2:02:44 PM	9.5	9.4
2:03:44 PM	9.3	9.2
2:04:44 PM	9.2	9.1
2:05:44 PM	8.9	8.8
2:06:44 PM	8.9	8.8
2:07:45 PM	8.9	8.8
2:08:44 PM	8.8	8.8
2:09:44 PM	8.8	8.7
2:10:44 PM	8.8	8.8
2:11:44 PM	8.7	8.6
2:12:44 PM	8.8	8.7
2:13:44 PM	8.7	8.7
2:14:44 PM	8.6	8.5
2:15:45 PM	8.7	8.6
2:16:45 PM	8.6	8.5
2:17:45 PM	8.5	8.5
2:18:45 PM	8.5	8.4
2:19:45 PM	8.6	8.5
2:20:45 PM	8.6	8.5
2:21:45 PM	8.5	8.4
2:22:45 PM	8.3	8.2
2:23:45 PM	8.1	8.0
2:24:45 PM	8.0	8.0
2:25:45 PM	7.9	7.9
2:26:45 PM	8.0	7.9
2:27:45 PM	8.0	7.9
2:28:45 PM	7.8	7.8
2:29:45 PM	7.8	7.7
2:30:45 PM	8.1	8.0
2:31:45 PM	7.9	7.8
2:32:45 PM	8.0	7.9
2:33:45 PM	8.0	8.0
2:34:45 PM	8.0	7.9
2:35:45 PM	7.9	7.9
2:36:45 PM	7.9	7.8
2:37:45 PM	7.7	7.7
2:38:45 PM	7.8	7.7
2:39:45 PM	6.6	6.5
2:40:45 PM	6.4	6.3

Stericycle - Oxidizer EXIT

Date	17-Jun-22	
Analyzer	**O_2**	
Low		
Zero Value *(Cv)*	0.0	
Direct *(C Dir)*	0	
Calibration Error *(ACE)*	0.00%	*PASS*
System Initial *(Csi)*	0.09	
System Post *(Csf)*	0.13	
Average *(Co)*	0.11	
System Bias Initial *(SBi)*	0.6%	*PASS*
System Bias Post *(SBf)*	0.9%	*PASS*
Drift Assessment *(D)*	0.27%	*PASS*
Mid		
Mid Value *(Cv)*	7.50	
Direct *(C Dir)*	7.64	
Calibration Error *(ACE)*	0.93%	*PASS*
System Initial *(Csi)*		
System Post *(Csf)*		
Average *(Cm)*	-	
System Bias Initial *(SBi)*	N/A	-
System Bias Post *(SBf)*	N/A	-
Drift Assessment *(D)*	N/A	-
High		
High Value *(CS/Cv)*	15.00	
Direct *(C Dir)*	15.17	
Calibration Error *(ACE)*	1.13%	*PASS*
System Initial *(Csi)*	15.02	
System Post *(Csf)*	15.14	
Average *(Cm)*	15.08	
System Bias Initial *(SBi)*	-1.0%	*PASS*
System Bias Post *(SBf)*	-0.2%	*PASS*
Drift Assessment *(D)*	0.80%	*PASS*
Analyser Span (Range)		
Average	8.78	8.69
Time	**Recorded**	**Corrected**
3:08:41 PM	4.7	4.6
3:09:41 PM	9.7	9.6
3:10:41 PM	11.5	11.5
3:11:41 PM	5.5	5.4
3:12:41 PM	11.1	11.0
3:13:41 PM	10.0	9.9
3:14:41 PM	6.3	6.2
3:15:41 PM	11.0	10.9
3:16:41 PM	9.7	9.6
3:17:41 PM	6.3	6.2
3:18:41 PM	13.2	13.1
3:19:41 PM	3.7	3.6
3:20:41 PM	9.2	9.1
3:21:41 PM	10.5	10.5
3:22:41 PM	5.7	5.6
3:23:41 PM	11.7	11.6
3:24:41 PM	9.2	9.1
3:25:41 PM	5.0	4.9
3:26:41 PM	12.4	12.4
3:27:41 PM	4.7	4.6
3:28:41 PM	9.7	9.6
3:29:41 PM	12.4	12.4
3:30:41 PM	4.3	4.2
3:31:41 PM	10.4	10.3
3:32:41 PM	11.3	11.2
3:33:41 PM	3.2	3.1
3:34:42 PM	13.4	13.4
3:35:42 PM	8.7	8.6
3:36:42 PM	5.9	5.8
3:37:41 PM	11.2	11.1
3:38:42 PM	9.8	9.7
3:39:42 PM	5.4	5.3
3:40:42 PM	11.9	11.8
3:41:42 PM	9.2	9.1
3:42:42 PM	5.8	5.7
3:43:42 PM	10.4	10.3
3:44:42 PM	10.4	10.3
3:45:42 PM	4.6	4.5
3:46:42 PM	12.4	12.3
3:47:42 PM	9.0	8.9
3:48:42 PM	5.8	5.7
3:49:42 PM	11.1	11.0
3:50:42 PM	10.6	10.5
3:51:42 PM	4.4	4.3
3:52:42 PM	12.0	11.9
3:53:42 PM	10.3	10.2
3:54:42 PM	5.7	5.6
3:55:42 PM	9.1	9.0
3:56:42 PM	12.5	12.4
3:57:42 PM	4.3	4.2

Stericycle - Oxidizer EXIT

Date	17-Jun-22	
Analyzer	**O_2**	
Low		
Zero Value *(Cv)*	0.0	
Direct *(C Dir)*	0	
Calibration Error *(ACE)*	0.00%	*PASS*
System Initial *(Csi)*	0.09	
System Post *(Csf)*	0.13	
Average *(Co)*	0.11	
System Bias Initial *(SBi)*	0.6%	*PASS*
System Bias Post *(SBf)*	0.9%	*PASS*
Drift Assessment *(D)*	0.27%	*PASS*
Mid		
Mid Value *(Cv)*	7.50	
Direct *(C Dir)*	7.64	
Calibration Error *(ACE)*	0.93%	*PASS*
System Initial *(Csi)*		
System Post *(Csf)*		
Average *(Cm)*	-	
System Bias Initial *(SBi)*	N/A	-
System Bias Post *(SBf)*	N/A	-
Drift Assessment *(D)*	N/A	-
High		
High Value *(CS/Cv)*	15.00	
Direct *(C Dir)*	15.17	
Calibration Error *(ACE)*	1.13%	*PASS*
System Initial *(Csi)*	15.02	
System Post *(Csf)*	15.14	
Average *(Cm)*	15.08	
System Bias Initial *(SBi)*	-1.0%	*PASS*
System Bias Post *(SBf)*	-0.2%	*PASS*
Drift Assessment *(D)*	0.80%	*PASS*
Analyser Span (Range)		
Average	8.78	8.69
Time	**Recorded**	**Corrected**
3:58:42 PM	9.2	9.2
3:59:42 PM	12.4	12.3
4:00:42 PM	7.5	7.4
4:01:42 PM	6.2	6.1
4:02:42 PM	12.6	12.6
4:03:42 PM	5.3	5.2
4:04:42 PM	8.4	8.3
4:05:42 PM	13.6	13.5
4:06:42 PM	6.0	5.9
4:07:42 PM	6.9	6.8
4:08:42 PM	13.2	13.1
4:09:42 PM	7.2	7.1
4:10:42 PM	7.8	7.7
4:11:42 PM	13.5	13.4
4:12:42 PM	5.7	5.6
4:13:42 PM	7.0	6.9
4:14:42 PM	13.1	13.0
4:15:42 PM	6.4	6.3
4:16:42 PM	6.9	6.8
4:17:42 PM	13.4	13.4
4:18:42 PM	4.9	4.8
4:19:42 PM	7.9	7.8
4:20:42 PM	13.6	13.5
4:21:42 PM	5.3	5.2
4:22:42 PM	8.1	8.1

APPENDIX H

RATA

Test: 1

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.32		0.03	
Calibration Error *(ACE)*	0.00%	*PASS*	1.60%	*PASS*	0.01%	*PASS*
System Initial *(Csi)*	0.04		0.53		0.03	
System Post *(Csf)*	0.09		0.27		0.09	
Average *(Co)*	0.07		0.40		0.06	
System Bias Initial *(SBi)*	0.3%	*PASS*	1.1%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	0.6%	*PASS*	-0.3%	*PASS*	0.0%	*PASS*
Drift Assessment *(D)*	0.33%	*PASS*	-1.30%	*PASS*	0.03%	*PASS*
Mid						
Mid Value *(Cv)*	7.50		10.00		105.00	
Direct *(C Dir)*	7.53		10.18		106.18	
Calibration Error *(ACE)*	0.20%	*PASS*	0.90%	*PASS*	0.56%	*PASS*
System Initial *(Csi)*	7.49		10.27		105.47	
System Post *(Csf)*	7.48		10.28		105.47	
Average *(Cm)*	7.49		10.28		105.47	
System Bias Initial *(SBi)*	-0.3%	*PASS*	0.4%	*PASS*	-0.3%	*PASS*
System Bias Post *(SBf)*	-0.3%	*PASS*	0.5%	*PASS*	-0.3%	*PASS*
Drift Assessment *(D)*	-0.07%	*PASS*	0.05%	*PASS*	0.00%	*PASS*
High						
High Value *(CS/Cv)*	15.00		20.00		210.00	
Direct *(C Dir)*	14.97		20.07		212.43	
Calibration Error *(ACE)*	-0.20%	*PASS*	0.35%	*PASS*	1.16%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	11.92	11.98	1.76	1.38	33.36	33.17
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
9:15:22	11.1	11.2	1.7	1.3	34.3	34.1
9:16:22	12.4	12.5	1.7	1.3	33.3	33.1
9:17:22	11.9	12.0	1.9	1.5	32.5	32.3
9:18:22	11.6	11.6	2.6	2.2	37.3	37.1
9:19:22	10.7	10.8	1.3	0.9	47.8	47.6
9:20:22	13.0	13.1	1.7	1.3	32.5	32.3
9:21:22	11.2	11.2	0.9	0.5	35.0	34.8
9:22:22	11.5	11.6	1.5	1.1	41.3	41.1
9:23:22	11.5	11.5	2.0	1.6	37.8	37.6
9:24:22	12.6	12.6	2.0	1.7	30.5	30.4
9:25:22	12.5	12.6	1.5	1.1	30.0	29.8
9:26:22	11.7	11.8	1.5	1.1	33.9	33.7
9:27:22	10.4	10.5	1.8	1.4	40.4	40.2
9:28:22	12.0	12.0	1.7	1.3	40.5	40.3
9:29:22	12.9	12.9	2.2	1.8	31.6	31.4
9:30:22	12.6	12.7	1.5	1.1	29.7	29.5
9:31:22	11.8	11.8	2.1	1.7	31.8	31.6
9:32:22	11.9	12.0	2.2	1.8	33.5	33.3
9:33:22	12.0	12.0	1.7	1.4	32.0	31.8
9:34:22	12.2	12.3	1.6	1.2	29.8	29.6
9:35:22	13.0	13.1	1.7	1.3	26.8	26.7
9:36:22	12.4	12.5	1.7	1.3	27.6	27.5
9:37:22	12.2	12.3	1.5	1.2	28.5	28.3
9:38:22	12.2	12.3	1.5	1.1	30.6	30.4
9:39:22	12.3	12.3	1.8	1.4	27.8	27.6
9:40:22	11.3	11.4	1.9	1.5	30.7	30.6
9:41:22	11.8	11.8	1.8	1.4	35.9	35.7
9:42:22	12.1	12.2	2.0	1.6	30.9	30.8
9:43:22	12.1	12.1	1.9	1.6	30.9	30.7
9:44:22	10.6	10.6	1.8	1.5	35.6	35.4

RATA

Test: 2

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.32		0.03	
Calibration Error *(ACE)*	0.00%	*PASS*	1.60%	*PASS*	0.01%	*PASS*
System Initial *(Csi)*	0.09		0.27		0.09	
System Post *(Csf)*	0.08		0.29		0.08	
Average *(Co)*	0.09		0.28		0.09	
System Bias Initial *(SBi)*	0.6%	*PASS*	-0.3%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	0.5%	*PASS*	-0.2%	*PASS*	0.0%	*PASS*
Drift Assessment *(D)*	-0.07%	*PASS*	0.10%	*PASS*	0.00%	*PASS*
Mid						
Mid Value *(Cv)*	7.50		10.00		105.00	
Direct *(C Dir)*	7.53		10.18		106.18	
Calibration Error *(ACE)*	0.20%	*PASS*	0.90%	*PASS*	0.56%	*PASS*
System Initial *(Csi)*	7.48		10.28		105.47	
System Post *(Csf)*	7.47		10.21		105.32	
Average *(Cm)*	7.5		10.2		105.47	
System Bias Initial *(SBi)*	-0.3%	*PASS*	0.5%	*PASS*	-0.3%	*PASS*
System Bias Post *(SBf)*	-0.4%	*PASS*	0.2%	*PASS*	-0.4%	*PASS*
Drift Assessment *(D)*	-0.07%	*PASS*	-0.35%	*PASS*	-0.07%	*PASS*
High						
High Value *(CS/Cv)*	15.00		20.00		210.00	
Direct *(C Dir)*	14.97		20.07		212.43	
Calibration Error *(ACE)*	-0.20%	*PASS*	0.35%	*PASS*	1.16%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	11.40	11.48	2.03	1.76	41.90	41.66
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
9:49:31	11.1	11.2	1.9	1.6	36.3	36.1
9:50:31	10.3	10.4	1.7	1.4	46.0	45.8
9:51:31	12.2	12.3	1.9	1.7	37.4	37.2
9:52:31	10.5	10.6	2.1	1.8	38.6	38.4
9:53:31	12.2	12.3	1.2	0.9	38.7	38.5
9:54:31	12.2	12.3	1.6	1.3	35.8	35.6
9:55:31	11.3	11.4	1.7	1.5	35.2	35.0
9:56:31	10.8	10.9	1.8	1.5	36.8	36.6
9:57:31	11.7	11.8	1.6	1.3	41.7	41.5
9:58:31	10.2	10.2	1.8	1.6	44.4	44.2
9:59:31	11.1	11.2	1.8	1.5	41.7	41.5
10:00:31	11.6	11.7	1.7	1.4	41.3	41.1
10:01:31	11.6	11.7	1.6	1.3	38.4	38.2
10:02:31	10.9	11.0	2.2	1.9	37.5	37.2
10:03:31	11.6	11.7	2.0	1.8	37.6	37.4
10:04:31	12.0	12.1	1.7	1.4	33.8	33.6
10:05:31	10.3	10.4	2.7	2.4	37.2	37.0
10:06:31	9.5	9.6	4.3	4.0	47.6	47.3
10:07:31	10.3	10.3	1.8	1.5	53.0	52.7
10:08:31	11.6	11.7	2.2	2.0	52.1	51.8
10:09:31	11.3	11.4	1.6	1.4	49.6	49.3
10:10:31	11.8	11.9	1.6	1.3	49.0	48.7
10:11:31	12.2	12.3	1.6	1.3	49.0	48.8
10:12:31	12.5	12.6	1.8	1.5	44.3	44.0
10:13:31	12.6	12.7	2.2	1.9	39.6	39.4
10:14:31	11.6	11.7	1.8	1.5	41.0	40.7
10:15:31	9.5	9.6	3.1	2.9	43.9	43.6
10:16:31	11.9	12.0	4.5	4.3	46.5	46.2
10:17:31	13.3	13.4	1.9	1.6	42.7	42.5
10:18:31	11.9	12.0	1.5	1.3	40.2	40.0

RATA

Test: 3

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.32		0.03	
Calibration Error *(ACE)*	0.00%	*PASS*	1.60%	*PASS*	0.01%	*PASS*
System Initial *(Csi)*	0.08		0.29		0.08	
System Post *(Csf)*	0.20		0.18		0.29	
Average *(Co)*	0.14		0.24		0.19	
System Bias Initial *(SBi)*	0.5%	*PASS*	-0.2%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	1.3%	*PASS*	-0.7%	*PASS*	0.1%	*PASS*
Drift Assessment *(D)*	0.80%	*PASS*	-0.55%	*PASS*	0.10%	*PASS*
Mid						
Mid Value *(Cv)*	7.50		10.00		105.00	
Direct *(C Dir)*	7.53		10.18		106.18	
Calibration Error *(ACE)*	0.20%	*PASS*	0.90%	*PASS*	0.56%	*PASS*
System Initial *(Csi)*	7.47		10.21		105.32	
System Post *(Csf)*	7.47		10.24		104.17	
Average *(Cm)*	7.5		10.2		105.32	
System Bias Initial *(SBi)*	-0.4%	*PASS*	0.2%	*PASS*	-0.4%	*PASS*
System Bias Post *(SBf)*	-0.4%	*PASS*	0.3%	*PASS*	-1.0%	*PASS*
Drift Assessment *(D)*	0.00%	*PASS*	0.15%	*PASS*	-0.55%	*PASS*
High						
High Value *(CS/Cv)*	15.00		20.00		210.00	
Direct *(C Dir)*	14.97		20.07		212.43	
Calibration Error *(ACE)*	-0.20%	*PASS*	0.35%	*PASS*	1.16%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	11.70	11.83	2.19	1.96	53.59	53.34
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
10:23:47	11.4	11.5	2.0	1.7	39.2	38.9
10:24:47	11.1	11.2	2.0	1.8	39.3	39.1
10:25:47	9.7	9.7	3.0	2.8	46.5	46.2
10:26:47	11.8	12.0	2.4	2.1	46.3	46.0
10:27:47	10.1	10.2	1.9	1.7	54.2	54.0
10:28:47	13.9	14.1	1.9	1.6	43.0	42.7
10:29:47	12.5	12.6	2.1	1.8	38.8	38.5
10:30:47	9.5	9.6	2.1	1.9	45.2	45.0
10:31:47	11.2	11.3	1.8	1.6	52.5	52.3
10:32:47	12.5	12.6	1.6	1.3	56.3	56.1
10:33:47	12.2	12.4	1.5	1.2	50.3	50.1
10:34:47	11.3	11.4	1.7	1.5	53.4	53.2
10:35:47	11.2	11.4	2.2	2.0	61.9	61.7
10:36:47	14.1	14.2	0.9	0.7	46.8	46.6
10:37:47	11.1	11.2	1.4	1.1	45.2	44.9
10:38:47	10.5	10.6	1.9	1.7	48.9	48.7
10:39:47	12.0	12.2	2.0	1.8	61.3	61.1
10:40:47	11.4	11.5	1.9	1.6	61.1	60.8
10:41:47	12.0	12.1	1.5	1.2	58.9	58.7
10:42:47	13.1	13.2	2.4	2.1	56.4	56.1
10:43:47	11.6	11.7	0.8	0.6	60.7	60.5
10:44:47	11.2	11.3	1.6	1.4	57.8	57.6
10:45:47	12.0	12.1	2.1	1.8	61.1	60.8
10:46:47	12.3	12.4	3.9	3.7	56.9	56.6
10:47:47	9.8	9.9	9.5	9.3	73.5	73.2
10:48:47	13.0	13.1	2.3	2.1	62.8	62.6
10:49:47	12.7	12.9	1.7	1.5	54.8	54.5
10:50:47	10.3	10.4	1.8	1.6	56.0	55.7
10:51:47	12.8	13.0	1.9	1.7	59.0	58.7
10:52:47	12.6	12.8	2.1	1.9	59.7	59.5

RATA

Test: 4

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.32		0.03	
Calibration Error *(ACE)*	0.00%	*PASS*	1.60%	*PASS*	0.01%	*PASS*
System Initial *(Csi)*	0.20		0.18		0.29	
System Post *(Csf)*	0.20		0.27		0.21	
Average *(Co)*	0.20		0.23		0.25	
System Bias Initial *(SBi)*	1.3%	*PASS*	-0.7%	*PASS*	0.1%	*PASS*
System Bias Post *(SBf)*	1.3%	*PASS*	-0.3%	*PASS*	0.1%	*PASS*
Drift Assessment *(D)*	0.00%	*PASS*	0.45%	*PASS*	-0.04%	*PASS*
Mid						
Mid Value *(Cv)*	7.50		10.00		105.00	
Direct *(C Dir)*	7.53		10.18		106.18	
Calibration Error *(ACE)*	0.20%	*PASS*	0.90%	*PASS*	0.56%	*PASS*
System Initial *(Csi)*	7.47		10.24		104.17	
System Post *(Csf)*	7.49		10.18		104.03	
Average *(Cm)*	7.5		10.2		104.17	
System Bias Initial *(SBi)*	-0.4%	*PASS*	0.3%	*PASS*	-1.0%	*PASS*
System Bias Post *(SBf)*	-0.3%	*PASS*	0.0%	*PASS*	-1.0%	*PASS*
Drift Assessment *(D)*	0.13%	*PASS*	-0.30%	*PASS*	-0.07%	*PASS*
High						
High Value *(CS/Cv)*	15.00		20.00		210.00	
Direct *(C Dir)*	14.97		20.07		212.43	
Calibration Error *(ACE)*	-0.20%	*PASS*	0.35%	*PASS*	1.16%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	12.00	12.15	8.21	8.00	63.68	64.09
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
11:04:26	13.3	13.4	2.2	2.0	71.3	71.8
11:05:26	10.1	10.2	5.9	5.7	67.1	67.5
11:06:26	13.5	13.7	3.6	3.4	63.5	63.9
11:07:26	13.1	13.3	1.7	1.5	57.3	57.6
11:08:26	9.9	10.0	8.2	7.9	59.7	60.0
11:09:26	12.5	12.7	5.9	5.7	57.7	58.1
11:10:26	12.2	12.4	2.3	2.1	60.6	61.0
11:11:26	10.2	10.3	5.5	5.3	57.3	57.7
11:12:26	13.0	13.2	1.3	1.1	52.5	52.8
11:13:26	12.6	12.8	2.1	1.9	57.9	58.3
11:14:26	11.3	11.4	1.8	1.5	59.4	59.8
11:15:26	12.6	12.8	1.7	1.5	55.7	56.1
11:16:26	12.7	12.9	1.7	1.5	56.3	56.6
11:17:26	10.6	10.7	2.1	1.8	63.2	63.6
11:18:26	12.8	13.0	1.7	1.5	64.4	64.8
11:19:26	12.7	12.9	1.4	1.1	60.8	61.2
11:20:26	9.9	10.0	21.2	21.0	63.4	63.8
11:21:26	11.8	12.0	53.7	53.6	73.5	74.0
11:22:26	12.7	12.8	6.4	6.2	70.1	70.5
11:23:26	11.2	11.4	2.6	2.3	70.6	71.0
11:24:26	12.6	12.8	2.0	1.8	66.8	67.2
11:25:26	13.0	13.2	2.1	1.9	69.7	70.2
11:26:25	11.0	11.2	16.5	16.3	68.9	69.3
11:27:25	11.6	11.7	60.4	60.2	73.0	73.5
11:28:25	13.5	13.7	17.3	17.1	69.9	70.4
11:29:26	13.2	13.4	3.5	3.3	61.5	61.9
11:30:25	11.1	11.2	3.4	3.2	65.4	65.9
11:31:26	12.3	12.5	4.0	3.8	58.4	58.7
11:32:25	11.9	12.1	2.0	1.8	65.0	65.5
11:33:26	10.8	10.9	2.5	2.3	69.6	70.0

RATA

Test: 5

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.32		0.03	
Calibration Error *(ACE)*	0.00%	*PASS*	1.60%	*PASS*	0.01%	*PASS*
System Initial *(Csi)*	0.20		0.27		0.21	
System Post *(Csf)*	0.19		0.21		0.27	
Average *(Co)*	0.20		0.24		0.24	
System Bias Initial *(SBi)*	1.3%	*PASS*	-0.3%	*PASS*	0.1%	*PASS*
System Bias Post *(SBf)*	1.3%	*PASS*	-0.6%	*PASS*	0.1%	*PASS*
Drift Assessment *(D)*	-0.07%	*PASS*	-0.30%	*PASS*	0.03%	*PASS*
Mid						
Mid Value *(Cv)*	7.50		10.00		105.00	
Direct *(C Dir)*	7.53		10.18		106.18	
Calibration Error *(ACE)*	0.20%	*PASS*	0.90%	*PASS*	0.56%	*PASS*
System Initial *(Csi)*	7.49		10.18		104.03	
System Post *(Csf)*	7.52		10.13		105.18	
Average *(Cm)*	7.5		10.2		104.03	
System Bias Initial *(SBi)*	-0.3%	*PASS*	0.0%	*PASS*	-1.0%	*PASS*
System Bias Post *(SBf)*	-0.1%	*PASS*	-0.2%	*PASS*	-0.5%	*PASS*
Drift Assessment *(D)*	0.20%	*PASS*	-0.25%	*PASS*	0.55%	*PASS*
High						
High Value *(CS/Cv)*	15.00		20.00		210.00	
Direct *(C Dir)*	14.97		20.07		212.43	
Calibration Error *(ACE)*	-0.20%	*PASS*	0.35%	*PASS*	1.16%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	12.33	12.45	1.80	1.58	59.70	60.15
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
11:37:19	12.9	13.0	1.9	1.7	84.8	85.6
11:38:19	13.1	13.2	1.8	1.6	75.8	76.4
11:39:19	11.4	11.5	2.1	1.9	58.8	59.2
11:40:19	12.5	12.6	2.3	2.1	56.1	56.5
11:41:19	12.3	12.4	2.0	1.7	66.7	67.2
11:42:19	11.7	11.8	2.0	1.8	59.8	60.3
11:43:19	12.5	12.7	1.9	1.7	54.5	54.9
11:44:19	13.4	13.5	1.8	1.6	47.5	47.8
11:45:19	12.0	12.1	1.3	1.1	60.9	61.4
11:46:19	12.8	12.9	1.9	1.7	61.4	61.8
11:47:19	11.5	11.6	2.4	2.2	65.2	65.7
11:48:19	12.5	12.6	2.6	2.3	58.3	58.7
11:49:19	13.0	13.1	2.3	2.1	55.1	55.5
11:50:19	13.3	13.5	2.1	1.9	56.3	56.7
11:51:19	10.9	11.0	1.9	1.7	61.7	62.2
11:52:19	13.4	13.5	1.8	1.6	58.6	59.1
11:53:19	12.1	12.3	1.7	1.4	53.9	54.2
11:54:18	10.7	10.8	0.8	0.6	74.4	75.1
11:55:19	12.5	12.6	1.7	1.4	71.7	72.3
11:56:18	12.8	13.0	1.6	1.4	54.3	54.7
11:57:18	12.0	12.1	1.6	1.3	57.1	57.6
11:58:19	11.4	11.5	1.7	1.5	69.8	70.4
11:59:18	12.8	12.9	1.4	1.2	53.0	53.4
12:00:18	11.8	11.9	1.1	0.9	57.9	58.3
12:01:18	11.4	11.5	1.7	1.5	63.2	63.7
12:02:18	13.3	13.5	2.5	2.3	50.8	51.1
12:03:19	12.5	12.6	0.9	0.7	50.4	50.7
12:04:18	12.7	12.9	1.6	1.3	53.7	54.1
12:05:18	13.4	13.5	1.8	1.6	48.9	49.2
12:06:18	11.4	11.5	1.9	1.7	50.2	50.5

RATA

Test: 6

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.32		0.03	
Calibration Error *(ACE)*	0.00%	*PASS*	1.60%	*PASS*	0.01%	*PASS*
System Initial *(Csi)*	0.19		0.21		0.27	
System Post *(Csf)*	0.15		0.20		0.21	
Average *(Co)*	0.17		0.21		0.24	
System Bias Initial *(SBi)*	1.3%	*PASS*	-0.6%	*PASS*	0.1%	*PASS*
System Bias Post *(SBf)*	1.0%	*PASS*	-0.6%	*PASS*	0.1%	*PASS*
Drift Assessment *(D)*	-0.27%	*PASS*	-0.05%	*PASS*	-0.03%	*PASS*
Mid						
Mid Value *(Cv)*	7.50		10.00		105.00	
Direct *(C Dir)*	7.53		10.18		106.18	
Calibration Error *(ACE)*	0.20%	*PASS*	0.90%	*PASS*	0.56%	*PASS*
System Initial *(Csi)*	7.52		10.13		105.18	
System Post *(Csf)*	7.53		10.14		106.10	
Average *(Cm)*	7.5		10.1		105.18	
System Bias Initial *(SBi)*	-0.1%	*PASS*	-0.2%	*PASS*	-0.5%	*PASS*
System Bias Post *(SBf)*	0.0%	*PASS*	-0.2%	*PASS*	0.0%	*PASS*
Drift Assessment *(D)*	0.07%	*PASS*	0.05%	*PASS*	0.44%	*PASS*
High						
High Value *(CS/Cv)*	15.00		20.00		210.00	
Direct *(C Dir)*	14.97		20.07		212.43	
Calibration Error *(ACE)*	-0.20%	*PASS*	0.35%	*PASS*	1.16%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	11.64	11.69	2.20	2.01	51.00	50.79
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
12:10:59	10.3	10.4	1.7	1.5	52.6	52.4
12:11:59	11.5	11.6	1.1	0.9	53.6	53.4
12:12:59	10.3	10.3	2.3	2.1	48.4	48.2
12:13:59	14.5	14.6	2.2	2.0	49.9	49.7
12:14:59	13.4	13.5	2.1	1.9	46.4	46.2
12:15:59	10.4	10.4	2.2	2.0	55.0	54.8
12:16:59	12.0	12.1	1.9	1.7	55.7	55.5
12:18:00	11.2	11.2	1.7	1.5	50.8	50.6
12:18:59	10.8	10.9	1.9	1.8	52.7	52.5
12:19:59	11.8	11.9	1.4	1.2	48.3	48.1
12:21:00	11.1	11.1	1.2	1.0	44.2	44.0
12:21:59	10.1	10.1	3.8	3.7	45.9	45.7
12:23:00	13.7	13.8	2.1	1.9	37.8	37.6
12:24:00	8.7	8.7	2.2	2.0	53.2	53.0
12:24:59	10.1	10.1	2.8	2.7	46.8	46.6
12:25:59	11.2	11.3	1.6	1.4	41.6	41.4
12:26:59	14.9	15.0	1.3	1.1	34.5	34.3
12:27:59	12.6	12.6	2.2	2.0	41.3	41.1
12:28:59	11.6	11.7	2.9	2.7	46.0	45.8
12:29:59	12.6	12.7	3.0	2.8	51.2	50.9
12:30:59	10.5	10.5	2.1	1.9	57.3	57.1
12:31:59	11.6	11.6	2.1	1.9	54.4	54.2
12:32:59	12.4	12.5	2.0	1.9	55.8	55.6
12:33:59	10.7	10.7	2.2	2.0	61.5	61.3
12:34:59	12.0	12.0	3.4	3.2	61.3	61.1
12:35:59	13.5	13.6	2.5	2.3	48.5	48.2
12:36:59	11.3	11.3	2.3	2.1	56.6	56.3
12:37:59	10.2	10.2	2.5	2.3	61.1	60.9
12:38:59	12.5	12.5	2.1	1.9	59.4	59.2
12:39:59	11.4	11.5	3.1	2.9	58.2	58.0

RATA

Test: 7

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.32		0.03	
Calibration Error *(ACE)*	0.00%	*PASS*	1.60%	*PASS*	0.01%	*PASS*
System Initial *(Csi)*	0.15		0.20		0.21	
System Post *(Csf)*	0.11		0.21		0.23	
Average *(Co)*	0.13		0.21		0.22	
System Bias Initial *(SBi)*	1.0%	*PASS*	-0.6%	*PASS*	0.1%	*PASS*
System Bias Post *(SBf)*	0.7%	*PASS*	-0.6%	*PASS*	0.1%	*PASS*
Drift Assessment *(D)*	-0.27%	*PASS*	0.05%	*PASS*	0.01%	*PASS*
Mid						
Mid Value *(Cv)*	7.50		10.00		105.00	
Direct *(C Dir)*	7.53		10.18		106.18	
Calibration Error *(ACE)*	0.20%	*PASS*	0.90%	*PASS*	0.56%	*PASS*
System Initial *(Csi)*	7.53		10.14		106.10	
System Post *(Csf)*	7.53		10.17		106.79	
Average *(Cm)*	7.5		10.2		106.1	
System Bias Initial *(SBi)*	0.0%	*PASS*	-0.2%	*PASS*	0.0%	*PASS*
System Bias Post *(SBf)*	0.0%	*PASS*	0.0%	*PASS*	0.3%	*PASS*
Drift Assessment *(D)*	0.00%	*PASS*	0.15%	*PASS*	0.33%	*PASS*
High						
High Value *(CS/Cv)*	15.00		20.00		210.00	
Direct *(C Dir)*	14.97		20.07		212.43	
Calibration Error *(ACE)*	-0.20%	*PASS*	0.35%	*PASS*	1.16%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	11.92	11.95	2.13	1.93	62.32	61.59
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
12:44:37	10.8	10.8	2.1	1.9	74.0	73.1
12:45:37	12.3	12.3	2.0	1.8	73.6	72.7
12:46:37	10.9	11.0	2.2	2.0	78.2	77.3
12:47:37	13.3	13.3	2.1	1.9	55.9	55.2
12:48:37	12.5	12.5	2.0	1.8	59.4	58.6
12:49:37	11.3	11.4	1.9	1.7	74.1	73.3
12:50:37	11.1	11.2	1.4	1.2	85.2	84.2
12:51:37	12.7	12.8	2.3	2.1	70.0	69.2
12:52:37	10.4	10.4	2.6	2.4	78.6	77.7
12:53:37	12.6	12.6	1.9	1.7	62.3	61.6
12:54:37	11.8	11.8	2.7	2.5	60.8	60.0
12:55:37	11.5	11.5	1.7	1.5	72.8	72.0
12:56:37	11.8	11.8	1.7	1.5	70.9	70.0
12:57:37	12.3	12.4	1.8	1.6	63.3	62.6
12:58:37	11.6	11.6	2.0	1.8	62.0	61.2
12:59:37	13.0	13.0	2.1	1.9	53.7	53.1
13:00:37	12.8	12.8	2.0	1.8	56.9	56.2
13:01:37	12.0	12.0	2.2	2.0	59.5	58.8
13:02:37	11.6	11.6	1.8	1.6	55.1	54.4
13:03:37	12.1	12.1	1.7	1.5	51.7	51.0
13:04:37	10.7	10.7	2.2	2.0	64.8	64.1
13:05:37	13.1	13.2	2.3	2.1	62.3	61.5
13:06:37	12.9	12.9	1.6	1.4	57.8	57.1
13:07:37	12.2	12.2	1.7	1.6	52.7	52.0
13:08:37	11.2	11.2	1.9	1.7	52.3	51.7
13:09:37	10.9	10.9	2.1	1.9	54.6	53.9
13:10:37	10.6	10.6	4.7	4.5	59.1	58.4
13:11:37	13.6	13.6	3.1	3.0	53.7	53.1
13:12:37	13.5	13.5	1.7	1.5	47.7	47.0
13:13:38	10.7	10.7	2.2	2.0	47.0	46.4

RATA

Test: 8

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.32		0.03	
Calibration Error *(ACE)*	0.00%	*PASS*	1.60%	*PASS*	0.01%	*PASS*
System Initial *(Csi)*	0.11		0.21		0.23	
System Post *(Csf)*	0.09		0.20		0.21	
Average *(Co)*	0.10		0.21		0.22	
System Bias Initial *(SBi)*	0.7%	*PASS*	-0.6%	*PASS*	0.1%	*PASS*
System Bias Post *(SBf)*	0.6%	*PASS*	-0.6%	*PASS*	0.1%	*PASS*
Drift Assessment *(D)*	-0.13%	*PASS*	-0.05%	*PASS*	-0.01%	*PASS*
Mid						
Mid Value *(Cv)*	7.50		10.00		105.00	
Direct *(C Dir)*	7.53		10.18		106.18	
Calibration Error *(ACE)*	0.20%	*PASS*	0.90%	*PASS*	0.56%	*PASS*
System Initial *(Csi)*	7.53		10.17		106.79	
System Post *(Csf)*	7.48		10.11		106.58	
Average *(Cm)*	7.5		10.1		106.79	
System Bias Initial *(SBi)*	0.0%	*PASS*	0.0%	*PASS*	0.3%	*PASS*
System Bias Post *(SBf)*	-0.3%	*PASS*	-0.4%	*PASS*	0.2%	*PASS*
Drift Assessment *(D)*	-0.33%	*PASS*	-0.30%	*PASS*	-0.10%	*PASS*
High						
High Value *(CS/Cv)*	15.00		20.00		210.00	
Direct *(C Dir)*	14.97		20.07		212.43	
Calibration Error *(ACE)*	-0.20%	*PASS*	0.35%	*PASS*	1.16%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	11.65	11.70	2.40	2.21	59.62	58.53
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
13:21:56	10.6	10.6	2.1	1.9	74.3	73.0
13:22:56	10.1	10.1	2.2	2.0	73.5	72.2
13:23:56	10.4	10.5	3.0	2.8	83.4	82.0
13:24:56	11.9	11.9	2.3	2.1	64.5	63.3
13:25:56	11.4	11.5	2.2	2.0	66.8	65.6
13:26:56	10.5	10.6	1.6	1.4	75.6	74.2
13:27:56	11.3	11.4	1.1	0.9	79.6	78.2
13:28:56	11.7	11.7	1.4	1.2	70.6	69.3
13:29:56	11.9	12.0	1.8	1.6	63.8	62.6
13:30:56	12.0	12.1	1.8	1.6	63.7	62.5
13:31:56	11.0	11.0	3.6	3.4	76.7	75.4
13:32:56	13.7	13.8	2.3	2.1	58.3	57.2
13:33:56	13.3	13.4	2.0	1.8	60.4	59.3
13:34:56	12.1	12.2	2.1	1.9	57.0	56.0
13:35:56	13.0	13.0	2.1	1.9	55.8	54.8
13:36:56	13.1	13.2	2.2	2.0	50.8	49.9
13:37:56	10.7	10.7	3.1	2.9	52.3	51.3
13:38:56	12.1	12.2	2.4	2.2	49.8	48.8
13:39:56	12.3	12.3	1.8	1.6	49.7	48.7
13:40:56	10.7	10.7	1.9	1.7	52.4	51.5
13:41:56	10.9	11.0	2.4	2.2	55.1	54.1
13:42:56	12.3	12.3	2.5	2.3	47.6	46.6
13:43:56	9.1	9.2	7.6	7.4	52.7	51.7
13:44:56	13.3	13.4	3.5	3.4	47.9	47.0
13:45:56	12.5	12.6	1.9	1.7	55.2	54.1
13:46:56	11.1	11.2	2.0	1.8	52.4	51.4
13:47:56	9.7	9.7	3.2	3.0	49.1	48.2
13:48:56	12.7	12.8	2.3	2.1	43.7	42.8
13:49:56	10.4	10.4	2.8	2.6	55.0	54.0
13:50:56	13.5	13.6	1.0	0.8	51.1	50.1

RATA

Test: 9

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.32		0.03	
Calibration Error *(ACE)*	0.00%	*PASS*	1.60%	*PASS*	0.01%	*PASS*
System Initial *(Csi)*	0.09		0.20		0.21	
System Post *(Csf)*	0.12		0.18		-0.51	
Average *(Co)*	0.11		0.19		-0.15	
System Bias Initial *(SBi)*	0.6%	*PASS*	-0.6%	*PASS*	0.1%	*PASS*
System Bias Post *(SBf)*	0.8%	*PASS*	-0.7%	*PASS*	-0.3%	*PASS*
Drift Assessment *(D)*	0.20%	*PASS*	-0.10%	*PASS*	-0.34%	*PASS*
Mid						
Mid Value *(Cv)*	7.50		10.00		105.00	
Direct *(C Dir)*	7.53		10.18		106.18	
Calibration Error *(ACE)*	0.20%	*PASS*	0.90%	*PASS*	0.56%	*PASS*
System Initial *(Csi)*	7.48		10.11		106.58	
System Post *(Csf)*	7.47		10.18		103.49	
Average *(Cm)*	7.5		10.1		106.58	
System Bias Initial *(SBi)*	-0.3%	*PASS*	-0.4%	*PASS*	0.2%	*PASS*
System Bias Post *(SBf)*	-0.4%	*PASS*	0.0%	*PASS*	-1.3%	*PASS*
Drift Assessment *(D)*	-0.07%	*PASS*	0.35%	*PASS*	-1.47%	*PASS*
High						
High Value *(CS/Cv)*	15.00		20.00		210.00	
Direct *(C Dir)*	14.97		20.07		212.43	
Calibration Error *(ACE)*	-0.20%	*PASS*	0.35%	*PASS*	1.16%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	11.37	11.46	2.34	2.16	58.41	57.61
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
14:12:23	11.2	11.3	1.9	1.8	60.8	60.0
14:13:23	11.4	11.5	1.8	1.7	52.9	52.2
14:14:23	9.8	9.9	2.7	2.5	58.7	57.9
14:15:23	12.9	13.0	1.8	1.6	57.2	56.4
14:16:23	11.6	11.7	1.3	1.1	55.4	54.6
14:17:23	11.1	11.2	1.8	1.6	52.3	51.6
14:18:23	11.8	11.9	1.4	1.2	54.8	54.0
14:19:23	11.7	11.8	2.2	2.0	53.6	52.9
14:20:23	9.9	10.0	2.9	2.7	58.7	57.9
14:21:23	12.5	12.6	2.0	1.8	56.0	55.2
14:22:23	11.4	11.5	2.2	2.0	62.8	61.9
14:23:23	10.9	11.0	1.8	1.6	64.6	63.7
14:24:23	11.8	11.9	1.7	1.5	63.5	62.6
14:25:23	11.8	11.9	1.9	1.7	58.9	58.1
14:26:23	9.8	9.8	2.8	2.6	64.6	63.7
14:27:23	12.7	12.8	2.7	2.5	57.1	56.3
14:28:23	11.9	12.0	2.0	1.9	58.3	57.5
14:29:23	11.1	11.2	1.8	1.7	55.4	54.6
14:30:23	11.7	11.8	2.0	1.8	55.3	54.5
14:31:23	11.7	11.8	2.2	2.0	53.1	52.4
14:32:23	9.5	9.6	6.3	6.1	60.2	59.4
14:33:23	12.7	12.8	3.3	3.1	57.3	56.5
14:34:23	11.2	11.2	2.5	2.3	58.7	57.9
14:35:23	10.2	10.3	2.4	2.2	64.6	63.7
14:36:23	12.3	12.4	1.4	1.2	58.3	57.5
14:37:23	11.5	11.6	2.1	1.9	56.1	55.3
14:38:23	9.3	9.3	4.0	3.9	65.5	64.6
14:39:23	12.8	12.9	3.1	2.9	57.3	56.6
14:40:23	11.8	11.9	2.3	2.1	59.2	58.4
14:41:23	11.0	11.1	2.0	1.8	61.2	60.4

RATA

Test: 10

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.41		-0.61	
Calibration Error *(ACE)*	0.00%	*PASS*	0.82%	*PASS*	-0.24%	*PASS*
System Initial *(Csi)*	0.00		0.45		0.59	
System Post *(Csf)*	0.00		0.37		0.77	
Average *(Co)*	0.00		0.41		0.68	
System Bias Initial *(SBi)*	0.0%	*PASS*	0.1%	*PASS*	0.5%	*PASS*
System Bias Post *(SBf)*	0.0%	*PASS*	-0.1%	*PASS*	0.6%	*PASS*
Drift Assessment *(D)*	0.00%	*PASS*	-0.16%	*PASS*	0.07%	*PASS*
Mid						
Mid Value *(Cv)*	10.00		25.00		125.00	
Direct *(C Dir)*	9.98		24.87		125.07	
Calibration Error *(ACE)*	-0.10%	*PASS*	-0.26%	*PASS*	0.03%	*PASS*
System Initial *(Csi)*	9.96		24.92		124.58	
System Post *(Csf)*	9.96		24.88		124.67	
Average *(Cm)*	10.0		24.9		124.58	
System Bias Initial *(SBi)*	-0.1%	*PASS*	0.1%	*PASS*	-0.2%	*PASS*
System Bias Post *(SBf)*	-0.1%	*PASS*	0.0%	*PASS*	-0.2%	*PASS*
Drift Assessment *(D)*	0.00%	*PASS*	-0.08%	*PASS*	0.04%	*PASS*
High						
High Value *(CS/Cv)*	20.00		50.00		250.00	
Direct *(C Dir)*	19.90		50.10		249.23	
Calibration Error *(ACE)*	-0.50%	*PASS*	0.20%	*PASS*	-0.31%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	11.74	11.79	2.53	2.16	56.53	56.34
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
14:50:40	10.1	10.1	3.0	2.6	76.9	76.9
14:51:40	12.4	12.4	2.6	2.2	65.8	65.7
14:52:40	9.6	9.6	2.3	1.9	70.1	70.1
14:53:40	11.8	11.9	2.5	2.1	68.3	68.3
14:54:40	12.9	12.9	2.3	1.9	65.5	65.4
14:55:40	10.6	10.7	2.6	2.3	72.1	72.0
14:56:40	9.8	9.8	5.1	4.8	69.4	69.3
14:57:40	12.7	12.8	2.5	2.1	65.3	65.2
14:58:40	12.3	12.4	1.9	1.5	59.5	59.4
14:59:40	11.8	11.8	2.1	1.7	58.7	58.5
15:00:40	10.0	10.1	2.0	1.7	62.1	62.0
15:01:40	12.3	12.4	1.7	1.3	57.4	57.2
15:02:40	10.9	10.9	4.2	3.8	59.1	59.0
15:03:40	12.6	12.7	1.8	1.4	52.2	51.9
15:04:40	13.0	13.1	2.0	1.7	47.7	47.5
15:05:40	11.5	11.5	2.2	1.8	54.0	53.8
15:06:40	10.5	10.5	2.3	1.9	56.2	56.0
15:07:40	13.0	13.1	1.8	1.4	47.5	47.3
15:08:40	11.1	11.1	3.4	3.0	49.2	49.0
15:09:40	12.8	12.9	2.4	2.0	47.1	46.8
15:10:41	11.1	11.2	2.2	1.8	46.3	46.0
15:11:41	12.2	12.2	2.7	2.4	48.6	48.3
15:12:41	12.8	12.8	1.0	0.6	45.9	45.7
15:13:41	10.8	10.9	2.2	1.8	51.0	50.7
15:14:41	10.5	10.6	4.1	3.8	56.6	56.4
15:15:41	13.5	13.5	2.9	2.6	46.8	46.5
15:16:41	12.6	12.7	3.0	2.6	43.3	43.0
15:17:41	11.1	11.2	2.6	2.2	47.9	47.6
15:18:41	13.3	13.4	2.3	2.0	53.5	53.3
15:19:41	12.4	12.5	2.1	1.8	51.8	51.6

RATA

Test: 11

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.41		-0.61	
Calibration Error *(ACE)*	0.00%	*PASS*	0.82%	*PASS*	-0.24%	*PASS*
System Initial *(Csi)*	0.00		0.37		0.77	
System Post *(Csf)*	0.01		0.31		0.63	
Average *(Co)*	0.01		0.34		0.70	
System Bias Initial *(SBi)*	0.0%	*PASS*	-0.1%	*PASS*	0.6%	*PASS*
System Bias Post *(SBf)*	0.1%	*PASS*	-0.2%	*PASS*	0.5%	*PASS*
Drift Assessment *(D)*	0.05%	*PASS*	-0.12%	*PASS*	-0.06%	*PASS*
Mid						
Mid Value *(Cv)*	10.00		25.00		125.00	
Direct *(C Dir)*	9.98		24.87		125.07	
Calibration Error *(ACE)*	-0.10%	*PASS*	-0.26%	*PASS*	0.03%	*PASS*
System Initial *(Csi)*	9.96		24.88		124.67	
System Post *(Csf)*	9.97		24.90		124.58	
Average *(Cm)*	10.0		24.9		124.67	
System Bias Initial *(SBi)*	-0.1%	*PASS*	0.0%	*PASS*	-0.2%	*PASS*
System Bias Post *(SBf)*	0.0%	*PASS*	0.1%	*PASS*	-0.2%	*PASS*
Drift Assessment *(D)*	0.05%	*PASS*	0.04%	*PASS*	-0.04%	*PASS*
High						
High Value *(CS/Cv)*	20.00		50.00		250.00	
Direct *(C Dir)*	19.90		50.10		249.23	
Calibration Error *(ACE)*	-0.50%	*PASS*	0.20%	*PASS*	-0.31%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	11.21	11.25	2.36	2.06	63.88	63.71
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
15:24:32	11.4	11.4	2.7	2.4	62.3	62.1
15:25:32	12.4	12.5	1.9	1.6	55.1	54.8
15:26:32	11.4	11.5	2.1	1.8	54.3	54.0
15:27:32	8.6	8.6	4.9	4.6	60.6	60.4
15:28:32	12.7	12.7	1.7	1.4	67.5	67.4
15:29:32	11.4	11.4	1.7	1.4	69.2	69.0
15:30:32	11.0	11.0	1.0	0.6	66.4	66.2
15:31:32	13.5	13.6	1.9	1.6	61.9	61.7
15:32:32	11.6	11.7	2.2	1.9	71.0	70.9
15:33:32	9.4	9.4	4.4	4.2	75.8	75.8
15:34:32	11.9	12.0	1.3	1.0	59.2	59.0
15:35:32	11.7	11.8	1.2	0.8	63.0	62.8
15:36:32	10.0	10.1	3.2	2.9	67.1	66.9
15:37:32	11.4	11.5	2.6	2.3	62.2	62.0
15:38:32	10.6	10.6	2.5	2.2	65.2	65.0
15:39:32	10.1	10.1	2.4	2.1	67.8	67.6
15:40:32	11.8	11.8	2.0	1.7	60.1	59.9
15:41:32	10.0	10.0	2.1	1.8	61.8	61.6
15:42:32	10.2	10.2	2.4	2.1	65.4	65.3
15:43:32	12.5	12.5	1.5	1.2	66.7	66.6
15:44:32	11.8	11.9	2.4	2.1	61.7	61.5
15:45:32	9.6	9.6	4.8	4.5	65.9	65.8
15:46:32	12.1	12.1	2.2	1.9	57.9	57.7
15:47:32	10.3	10.4	1.8	1.5	64.1	63.9
15:48:32	10.4	10.5	2.7	2.4	69.6	69.5
15:49:32	12.8	12.8	2.7	2.4	55.8	55.5
15:50:32	9.2	9.2	3.5	3.2	70.2	70.1
15:51:32	12.3	12.4	2.0	1.7	64.7	64.5
15:52:32	13.1	13.1	1.3	1.0	59.1	58.9
15:53:32	11.0	11.1	1.3	1.0	65.0	64.8

RATA

Test: 12

Date	15-Jun-22					
Analyzer	**O2**		**CO**		**NOx**	
Low						
Zero Value *(Cv)*	0.00		0.00		0.00	
Direct *(C Dir)*	0.00		0.41		-0.61	
Calibration Error *(ACE)*	0.00%	*PASS*	0.82%	*PASS*	-0.24%	*PASS*
System Initial *(Csi)*	0.01		0.31		0.63	
System Post *(Csf)*	0.00		0.32		0.69	
Average *(Co)*	0.01		0.32		0.66	
System Bias Initial *(SBi)*	0.1%	*PASS*	-0.2%	*PASS*	0.5%	*PASS*
System Bias Post *(SBf)*	0.0%	*PASS*	-0.2%	*PASS*	0.5%	*PASS*
Drift Assessment *(D)*	-0.05%	*PASS*	0.02%	*PASS*	0.02%	*PASS*
Mid						
Mid Value *(Cv)*	10.00		25.00		125.00	
Direct *(C Dir)*	9.98		24.87		125.07	
Calibration Error *(ACE)*	-0.10%	*PASS*	-0.26%	*PASS*	0.03%	*PASS*
System Initial *(Csi)*	9.97		24.90		124.58	
System Post *(Csf)*	9.98		24.58		124.63	
Average *(Cm)*	10.0		24.7		124.58	
System Bias Initial *(SBi)*	0.0%	*PASS*	0.1%	*PASS*	-0.2%	*PASS*
System Bias Post *(SBf)*	0.0%	*PASS*	-0.6%	*PASS*	-0.2%	*PASS*
Drift Assessment *(D)*	0.05%	*PASS*	-0.64%	*PASS*	0.02%	*PASS*
High						
High Value *(CS/Cv)*	20.00		50.00		250.00	
Direct *(C Dir)*	19.90		50.10		249.23	
Calibration Error *(ACE)*	-0.50%	*PASS*	0.20%	*PASS*	-0.31%	*PASS*
System Initial *(Csi)*						
System Post *(Csf)*						
Average *(Cm)*	-		-		-	
System Bias Initial *(SBi)*	N/A	-	N/A	-	N/A	-
System Bias Post *(SBf)*	N/A	-	N/A	-	N/A	-
Drift Assessment *(D)*	N/A	-	N/A	-	N/A	-
Analyser Span (Range)	25		60		1000	
Average	11.57	11.60	2.74	2.48	56.96	56.80
Time	**Recorded**	**Corrected**	**Recorded**	**Corrected**	**Recorded**	**Corrected**
15:56:26	12.1	12.1	2.7	2.4	57.7	57.5
15:57:26	10.7	10.7	2.6	2.4	61.9	61.8
15:58:26	13.3	13.3	2.4	2.1	58.4	58.3
15:59:26	9.9	9.9	2.2	1.9	65.4	65.3
16:00:26	11.9	11.9	2.7	2.5	58.4	58.2
16:01:26	12.9	13.0	2.0	1.7	60.8	60.7
16:02:26	11.2	11.2	2.0	1.7	60.0	59.9
16:03:26	10.3	10.4	3.1	2.8	64.5	64.4
16:04:26	13.3	13.3	2.1	1.8	58.7	58.5
16:05:26	10.9	10.9	2.4	2.2	52.4	52.1
16:06:26	10.0	10.1	2.5	2.2	55.1	54.9
16:07:26	12.2	12.2	2.4	2.1	52.1	51.8
16:08:26	11.8	11.9	3.1	2.8	60.5	60.4
16:09:26	9.6	9.6	9.7	9.6	59.4	59.2
16:10:26	13.5	13.5	3.4	3.2	52.1	51.9
16:11:26	12.0	12.0	2.6	2.3	56.3	56.1
16:12:26	9.3	9.3	2.5	2.2	55.7	55.5
16:13:26	12.1	12.2	2.4	2.1	54.4	54.2
16:14:26	13.7	13.7	2.6	2.4	44.6	44.3
16:15:26	8.4	8.4	8.4	8.3	51.5	51.3
16:16:26	12.8	12.8	2.8	2.6	53.4	53.2
16:17:26	12.2	12.2	1.6	1.3	47.3	47.1
16:18:26	10.7	10.7	1.6	1.3	50.7	50.5
16:19:26	11.0	11.0	1.5	1.2	63.3	63.2
16:20:26	12.6	12.6	1.8	1.5	53.7	53.5
16:21:26	10.6	10.6	2.9	2.6	60.5	60.4
16:22:26	12.6	12.6	1.4	1.1	61.3	61.2
16:23:26	11.7	11.7	1.8	1.5	59.2	59.1
16:24:26	11.9	11.9	1.9	1.6	53.6	53.4
16:25:26	11.9	12.0	1.3	1.0	66.1	66.0

APPENDIX I

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #: 2202865 Project: Stericycle

Date: June 15, 2022 Test: T1

Filter ID: ~~N/A~~ 22021721

Sample Loc. Incinerator XAD Trap ID: N/A

Train ID: M29

Pre-weights By: MOS Post-weights By: GV

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	5%HNO3 + 10% H2O2	817.8	785.3	
2	5%HNO3 + 10% H2O2	828.3	757.7	
3	Empty	663.5	640.5	
4	H2SO4/KMnO4	759.0	749.4	
5	H2SO4/KMnO4	748.0	743.5	
6	Silica	889.8	844.2	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	1000.0	1000.1	✓	DO
Post-weights	1000.0	1000.1	✓	DO

Comments:

Nozzle Measurements:

1 0.32
2 0.32
3 0.32
4 0.32

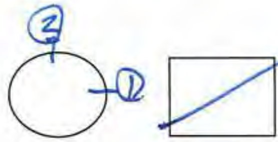
Avg

Signature

June 15, 2022
Date

— Isokinetic Sampling Train Data Sheet —

Operator Signature: [signature]



Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 1/2

Test No.: T1-M29
Operators: GP
Traverse Dir.: OUT -> IN

Start Time: 9:18
Finish Time: —
Date: June 15, 2022

Stack D.: 24"
Pitot Check: ✓
Port length: 8"

Page: 1 of 4

Dn: 0.32 Cp: 0.827 Bws: 5% dH@: 1.7813 Y: 0.9843 Pbar: 29.96 Pstatic: 0.07 CO_2: ~~12.2~~ 6.4 O_2: ~~6.4~~ 12.2 Pitot ID: hose 4ft H4

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter 406 Inlet (oF)	Meter 406 Outlet (oF)	Vac. Press. ("Hg)	Comments
1	0	0.15	1.4	—	654.19	112	250	250	65	83		-2	
	2.5	0.15	1.4	655.82	655.87	112	250	249	65	83		-2	
	5	0.15	1.4	657.55	657.56	110	250	250	62	83		-2	
	7.5	0.13	1.0	659.24	659.25	119	250	250	60	83		-2	
	10	0.11	1.0	660.68	660.70	122	250	250	58	82		-1	
	12.5	0.11	1.0	662.13	662.13	111	250	249	58	82		-1	
	15	0.15	1.3	663.56	663.57	110	250	251	58	82		-2	
	17.5	0.15	1.3	665.24	665.26	111	250	249	57	82		-2	
2	20	0.15	1.3	666.93	666.94	112	250	249	57	82		-2	
	22.5	0.15	1.3	668.61	668.61	112	250	250	57	82		-2	
	25	0.15	1.3	670.28	670.27	112	250	250	57	82		-2	
	27.5	0.15	1.3	671.94	671.94	112	250	250	57	82		-2	
	30	0.15	1.3	673.61	673.62	112	250	249	56	82		-2	
	32.5	0.15	1.3	675.29	675.28	112	250	250	56	82		-2	
	35	0.15	1.3	676.95	676.96	113	249	250	58	83		-2	
	37.5	0.15	1.3	678.64	678.63	113	250	250	58	83		-2	
3	40	0.13	1.1	680.31	680.31	113	250	250	59	83		-2	
	42.5	0.13	1.1	681.87	681.88	113	249	250	59	83		-2	
	45	0.13	1.1	683.44	683.42	113	249	249	59	84		-2	
	47.5	0.13	1.1	684.98	684.97	113	247	251	60	84		-2	
	50	0.13	1.1	686.53	686.53	113	250	252	60	84		-2	
	52.5	0.13	1.1	688.09	688.08	113	251	250	60	84		-2	
	55	0.13	1.1	689.64	689.64	113	251	250	62	84		-2	
	57.5	0.13	1.1	691.20	691.20	113	249	252	61	84		-2	
4	60	0.15	1.3	692.76	692.76	112	249	252	60	84		-2	
	62.5	0.15	1.3	694.44	694.42	113	252	252	60	84		-2	
	65	0.15	1.3	696.10	696.10	113	250	250	58	84		-2	
	67.5	0.15	1.3	697.78	697.78	113	250	249	58	84		-2	
	70	0.15	1.3	699.41	699.42	112	251	251	57	84		-2	
	72.5	0.15	1.3	701.10	701.08	113	251	250	57	84		-2	
	75	0.15	1.3	702.76	702.76	113	250	249	57	84		-2	
	77.5	0.15	1.3	704.44	704.42	113	252	250	57	84		-2	

Pretest Leak Check Rate (cfm) <0.02 at 15 vacuum ("Hg) Leak Vol Start 653.11 Leak Vol. End 654.19

Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —

Post-Pitot Check ✓

— Isokinetic Sampling Train Data Sheet —

Operator Signature: _____

Job Name: Stericycle | Plant: Stericycle | Test No.: TI-1729 | Start Time: _____ | Stack D.: 24"
Job Number: 2202865 | Source: Incinerator | Operators: _____ | Finish Time: _____ | Pitot Check: _____
Client: Stericycle | Traverse: 12 | Traverse Dir.: Out-In | Date: June 15, 2022 | Port length: 8" | Page: 2 of 4

Dn: 0.32 | Cp: 0.829 | Bws: 58 | dH@: 1.781 | Y: 0.984 | Pbar: 29.91 | Pstatic: 0.07 | CO2: 6.4 | O2: 12.2 | Pitot ID: Rust cuff #4

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AVG Inlet (oF)	Meter AVG Outlet (oF)	Vac. Press. ("Hg)	Comments
5	80	0.11	1.0	706.10	706.09	114	251	250	57	86		-2	
	82.5	0.11	1.0	707.53	707.56	114	251	250	57	86		-2	
	85	0.11	1.0	709.00	709.02	114	250	249	57	86		-2	
	87.5	0.11	1.0	710.46	710.49	114	248	250	57	86		-2	
	90	0.11	1.0	711.93	711.95	114	248	250	57	86		-2	
	92.5	0.15	1.3	713.39	713.41	115	250	250	58	86		-2	
	95	0.15	1.3	715.09	715.06	115	249	250	58	87		-2	
	97.5	0.15	1.3	716.74	716.74	115	250	249	58	87		-2	
6	100	0.15	1.3	718.42	718.41	115	250	250	59	87		-2	
	102.5	0.15	1.3	720.09	720.12	115	251	249	59	87		-2	
	105	0.15	1.3	721.80	721.82	115	250	250	59	87		-2	
	107.5	0.15	1.3	723.50	723.51	115	250	250	59	87		-2	
	110	0.15	1.3	725.19	725.19	115	250	250	59	87		-2	
	112.5	0.15	1.3	726.87	726.85	115	250	249	60	87		-2	
	115	0.15	1.3	728.53	728.50	116	250	249	61	87		-2	
	117.5	0.15	1.3	730.18	730.15	116	250	249	62	87		-2	
7	120	0.15	1.3	731.83	731.83	115	250	251	62	87		-2	
	122.5	0.11	1.0	733.51	733.50	116	250	250	62	87		-2	
	125	0.11	1.0	734.94	734.96	116	250	251	62	87		-2	
	127.5	0.11	1.0	736.40	736.44	116	250	249	62	87		-2	
	130	0.11	1.0	737.88	737.90	116	251	250	62	87		-2	
	132.5	0.10	0.85	739.34	739.38	115	251	250	64	87		-1	
	135	0.10	0.85	740.75	740.77	116	250	250	64	87		-1	
	137.5	0.10	0.85	742.15	742.18	116	249	250	64	87		-1	
8	140	0.10	0.85	743.55	743.57	116	250	250	65	86		-1	
	142.5	0.10	0.85	744.94	744.95	116	251	250	65	86		-1	
	145	0.10	0.85	746.32	746.30	116	250	251	66	86		-1	
	147.5	0.10	0.85	747.67	747.66	116	250	250	66	86		-1	
	150	0.10	0.85	749.03	749.03	116	248	250	66	86		-1	
	152.5	0.10	0.85	750.40	750.42	116	249	249	66	86		-1	
	155	0.10	0.85	751.79	751.81	116	249	249	66	84		-1	
	157.5	0.10	0.85	753.18	753.20	116	251	251	66	84		-1	
	160			754.57	754.59								

Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —

Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End — Post-Pitot Check —

— Isokinetic Sampling Train Data Sheet —

Operator Signature: [signature]

Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: -2&2

Test No.: T1-M29
Operators: OO
Traverse Dir.: Out-7 in

Start Time: –
Finish Time: –
Date: June 15, 2022

Stack D.: 24"
Pitot Check: –
Port length: 8"

Page: 3 of 4

Dn: 0.32 Cp: 0.827 Bws: 52 dH@: 1.7813 Y: 0.9843 Pbar: 29.56 Pstatic: 0.07 CO2: 6.4 O2: 12.2 Pitot ID: Rush 4ft #4

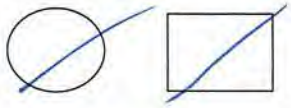
Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AVG Inlet (oF)	Meter AVG Outlet (oF)	Vac. Press. ("Hg)	Comments
1	0	0.17	1.5	–	754.59	114	249	250	61	81		-2	
	2.5	0.17	1.5	756.36	756.36	114	249	250	62	81		-2	
	5	0.17	1.5	758.13	758.12	113	251	249	62	81		-2	
	7.5	0.17	1.5	759.89	759.88	113	250	249	62	81		-2	
	10	0.17	1.5	761.65	761.67	113	250	250	62	81		-2	
	12.5	0.17	1.5	763.44	763.45	114	249	251	63	80		-2	
	15	0.17	1.5	765.22	765.23	113	250	250	65	80		-2	
	17.5	0.17	1.5	767.00	767.02	113	250	250	65	80		-2	
2	20	0.17	1.5	768.79	768.74	113	251	249	62	79		-2	
	22.5	0.17	1.5	770.51	770.49	113	250	250	62	79		-2	
	25	0.17	1.5	772.26	772.24	114	250	250	60	79		-2	
	27.5	0.17	1.5	774.01	774.0	114	250	250	60	79		-2	
	30	0.17	1.5	775.77	775.77	116	251	251	60	78		-2	
	32.5	0.17	1.5	777.54	777.55	115	250	249	60	78		-2	
	35	0.17	1.5	779.31	779.33	116	252	249	60	78		-2	
	37.5	0.17	1.5	781.09	781.11	116	250	249	60	78		-2	
3	40	0.22	1.9	782.87	782.87	116	250	249	60	78		-3	
	42.5	0.22	1.9	784.88	784.87	117	250	251	60	78		-3	
	45	0.22	1.9	786.87	786.87	117	249	249	60	78		-3	
	47.5	0.22	1.9	788.87	788.86	116	250	250	59	77		-3	
	50	0.22	1.9	790.86	790.90	116	250	251	59	77		-3	
	52.5	0.22	1.9	792.90	792.92	116	250	251	59	77		-3	
	55	0.22	1.9	794.92	794.95	116	251	250	59	77		-3	
	57.5	0.22	1.9	796.95	796.94	116	250	249	59	77		-3	
4	60	0.15	1.3	798.94	798.93	115	250	250	58	77		-3	
	62.5	0.15	1.3	800.58	800.61	116	251	249	58	77		-3	
	65	0.15	1.3	802.26	802.27	116	248	250	58	77		-3	
	67.5	0.15	1.3	803.92	803.94	117	249	252	57	77		-3	
	70	0.15	1.3	805.59	805.60	116	251	249	57	77		-2	
	72.5	0.15	1.3	807.25	807.27	116	250	250	57	77		-2	
	75	0.15	1.3	808.92	808.95	116	248	250	57	76		-2	
	77.5	0.15	1.3	810.60	810.60	117	250	250	57	76		-2	

Pretest Leak Check Rate (cfm) – at – vacuum ("Hg) Leak Vol Start – Leak Vol. End –

Posttest Leak Check Rate (cfm) – at – vacuum ("Hg) Leak Vol Start – Leak Vol. End – Post-Pitot Check –

— Isokinetic Sampling Train Data Sheet —

Operator Signature: _____



Job Name: Stericycle | Plant: Stericycle | Test No.: T1-M23 | Start Time: — | Stack D.: 24"
Job Number: 2202865 | Source: Incinerator | Operators: LO | Finish Time: 14:58 | Pitot Check: —
Client: Stericycle | Traverse: 2 | 2 | Traverse Dir.: Out → In | Date: June 15, 2023 | Port length: 8" | Page: 4 of 4

Dn: 0.32 | Cp: 0.827 | Bws: 5% | dH@: 1.783 | Y: 0.984 | Pbar: 29.26 | Pstatic: 0.07 | CO2: ~~12~~ 6.4 | O2: ~~6~~ 12.2 | Pitot ID: RWDI #84

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AVG Inlet (oF)	Meter AVG Outlet (oF)	Vac. Press. ("Hg)	Comments
5	80	0.25	2.2	812.73	812.72	117	250	250	62	76		-4	
	82.5	0.25	2.2	814.85	814.84	117	250	250	62	76		-4	
	85	0.25	2.2	816.97	816.97	117	250	250	61	76		-4	
	87.5	0.25	2.2	819.10	819.10	117	250	260	61	76		-4	
	90	0.25	2.2	821.23	821.22	116	250	250	61	77		-4	
	92.5	0.25	2.2	823.35	823.37	116	250	250	61	76		-4	
	95	0.25	2.2	825.50	825.53	116	250	250	61	77		-4	
	97.5	0.25	2.2	827.66	827.66	116	250	250	61	77		-4	
6	100	0.20	1.7	829.79	829.79	116	250	250	61	77		-4	
	102.5	0.20	1.7	831.70	831.68	115	251	250	63	77		-3	
	105	0.20	1.7	833.59	833.60	115	250	250	63	77		-3	
	107.5	0.20	1.7	835.51	835.52	115	250	250	63	77		-3	
	110	0.20	1.7	837.43	837.43	115	250	251	63	77		-3	
	112.5	0.20	1.7	839.34	839.34	114	249	250	63	77		-3	
	115	0.20	1.7	841.25	841.28	114	251	249	63	77		-3	
	117.5	0.20	1.7	843.15	843.21	113	250	250	63	77		-3	
7	120	0.15	1.3	845.12	845.12	114	250	250	66	77		-3	
	122.5	0.15	1.3	846.77	846.77	114	251	250	66	77		-3	
	125	0.15	1.3	848.42	848.44	113	250	250	66	77		-3	
	127.5	0.15	1.3	850.09	850.10	113	250	250	66	77		-3	
	130	0.15	1.3	851.75	851.75	113	250	250	66	77		-3	
	132.5	0.15	1.3	853.40	853.40	113	250	250	66	77		-3	
	135	0.15	1.3	855.05	855.04	112	249	251	66	77		-3	
	137.5	0.15	1.3	856.69	856.70	112	249	250	66	77		-3	
8	140	0.15	1.3	858.35	858.37	112	249	250	66	77		-3	
	142.5	0.15	1.3	860.02	860.01	113	249	251	66	77		-3	
	145	0.15	1.3	861.66	861.68	113	250	250	66	77		-3	
	147.5	0.15	1.3	863.33	863.32	113	250	250	66	77		-3	
	150	0.15	1.3	864.97	864.97	113	250	250	66	77		-3	
	152.5	0.15	1.3	866.62	866.61	113	251	250	66	77		-3	
	155	0.15	1.3	868.26	868.25	115	250	251	64	77		-3	
	157.5	0.15	1.3	869.90	869.90	113	250	251	64	77		-3	
	160			871.55	871.55								

Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) | Leak Vol Start — | Leak Vol. End —
Posttest Leak Check Rate (cfm) <0.02 at 10 vacuum ("Hg) | Leak Vol Start 871.55 | Leak Vol. End 871.65 | Post-Pitot Check ✓

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #: 2202865 Project: Stericycle

Date: June 16, 2022 Test: T2 -

Filter ID: ~~N/A~~ 22031105

Sample Loc. Incinerator XAD Trap ID: N/A

Train ID: M29

Pre-weights By: OO Post-weights By: OO

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	5%HNO3 + 10% H2O2	952.3	787.8	
2	5%HNO3 + 10% H2O2	833.7	760.7	
3	Empty	659.7	642.9	
4	H2SO4/KMnO4	739.8	742.5	
5	H2SO4/KMnO4	752.9	750.1	
6	Silica	992.2	929.2	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	1000.0	1000.1	✓	OO
Post-weights	1000.0	1000.1	✓	OO

Comments:

Nozzle Measurements:

1 0.32
2 0.32
3 0.32
4 0.32

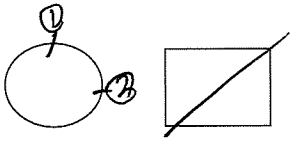
Avg

Signature

June 16, 2022
Date

— Isokinetic Sampling Train Data Sheet —

Operator Signature: SR



Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 1/2

Test No.: T2-M29
Operators: SRR
Traverse Dir.: OUT-DIN

Start Time: 8:58
Finish Time: —
Date: June 16, 2022

Stack D.: 24"
Pitot Check: ✓
Port length: 8"

Page: 1 of 4

Dn: 0.32 Cp: 0.827 Bws: 5% dH@: 1.7813 Y: 0.9843 Pbar: 29.85 Pstatic: 0.07 CO2: ~~5%~~ 6.4 O2: ~~6.4~~ 12.2 Pitot ID 4' #4

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AH@ Inlet (oF)	Meter AH@ Outlet (oF)	Vac. Press. ("Hg)	Comments
1	0	0.27	1.84	—	871.88	121	250	250	68	84		-3	
	2.5	0.28	1.91	874.11	874.03	121	250	250	68	84		-3	
	5	0.27	1.84	876.26	876.23	124	250	250	68	84		-3	
	7.5	0.27	1.84	878.50	878.45	124	250	250	68	84		-3	
	10	0.28	1.91	881.06	880.67	124	250	250	68	84		-3	
	12.5	0.30	2.05	882.94	883.00	126	250	250	68	83		-3	
	15	0.32	2.18	885.35	885.39	126	250	250	68	83		-3	
	17.5	0.32	2.18	887.74	887.72	126	250	250	68	83		-3	
2	20	0.31	2.12	890.14	890.13	125	250	250	67	83		-3	
	22.5	0.31	2.12	892.52	892.52	125	250	250	67	83		-3	
	25	0.32	2.18	894.91	894.82	125	250	250	67	83		-3	
	27.5	0.32	2.18	897.24	897.19	125	250	250	66	83		-3	
	30	0.33	2.25	899.61	899.61	125	250	250	65	83		-3	
	32.5	0.33	2.25	902.07	902.01	125	250	250	65	83		-3	
	35	0.30	2.05	904.49	904.34	125	250	250	64	83		-3	
	37.5	0.29	1.98	906.69	906.63	125	250	250	64	83		-3	
3	40	0.29	1.98	908.94	908.95	125	250	250	64	83		-3	
	42.5	0.29	1.98	911.26	911.26	125	250	250	64	83		-3	
	45	0.29	1.98	913.57	913.58	127	250	250	64	83		-3	
	47.5	0.30	2.05	915.89	915.86	127	250	250	64	83		-3	
	50	0.30	2.05	918.21	918.17	127	250	250	64	83		-3	
	52.5	0.31	2.12	920.52	920.45	127	250	250	64	83		-3	
	55	0.29	1.98	922.84	922.80	127	250	250	64	83		-3	
	57.5	0.29	1.98	925.19	924.96	127	250	250	64	83		-3	
4	60	0.26	1.77	927.27	927.23	127	250	250	64	83		-3	
	62.5	0.25	1.71	929.42	929.38	127	250	250	66	83		-3	
	65	0.25	1.71	931.52	931.55	127	250	250	66	83		-3	
	67.5	0.25	1.71	933.69	933.72	127	250	250	67	83		-3	
	70	0.25	1.71	935.86	935.87	127	250	250	67	83		-3	
	72.5	0.25	1.71	938.01	938.02	127	250	250	67	83		-3	
	75	0.26	1.77	940.15	940.16	127	250	250	67	84		-3	
	77.5	0.25	1.71	942.35	942.31	127	250	250	67	84		-3	~~to~~

Pretest Leak Check Rate (cfm) <0.02 at -9 vacuum ("Hg) Leak Vol Start 871.80 Leak Vol. End 871.88

Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —

Post-Pitot Check —

— Isokinetic Sampling Train Data Sheet —

Operator Signature: SR

Job Name: Stericycle | Plant: Stericycle | Test No.: T2-M29 | Start Time: — | Stack D.: 24"
Job Number: 2202865 | Source: Incinerator | Operators: SRR | Finish Time: — | Pitot Check: —
Client: Stericycle | Traverse: 1,2 | Traverse Dir.: OUT→IN | Date: June 16, 2022 | Port length: 8" | Page: 2 of 4

Dn: 0.32 Cp: 0.827 Bws: 5% dH@: 1.7813 Y: 0.9843 Pbar: 29.85 Pstatic: 0.07 CO2: 6.4 O2: 12.2 Pitot ID 41 #4

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter Inlet (oF)	Meter Outlet (oF)	Vac. Press. ("Hg)	Comments
5	80	0.27	1.84	944.50	944.48	127	250	250	67	83		-3	
	82.5	0.27	1.84	946.71	946.67	126	249	249	67	83		-3	
	85	0.14	0.96	948.90	948.50	126	249	248	67	83		-3	
	87.5	0.14	0.96	950.10	950.20	126	249	248	67	83		-3	
	90	0.14	0.96	951.80	951.84	126	249	248	67	83		-3	
	92.5	0.14	0.96	953.44	953.46	126	249	248	67	83		-3	
	95	0.13	0.89	955.06	955.06	126	250	249	67	83		-3	
	97.5	0.15	1.02	956.61	956.63	126	250	249	67	83		-3	
6	100	0.15	1.02	958.29	958.23	126	251	249	67	83		-3	
	102.5	0.12	0.82	959.89	959.87	126	251	249	67	83		-3	
	105	0.13	0.89	961.35	961.48	126	250	249	67	83		-2	
	107.5	0.13	0.89	963.03	963.01	126	250	249	67	83		-2	
	110	0.12	0.82	964.56	964.55	126	250	249	67	83		-2	
	112.5	0.11	0.75	966.10	966.08	126	250	249	67	83		-2	
	115	0.11	0.75	967.50	967.58	126	250	249	67	83		-2	
	117.5	0.11	0.75	969.00	969.01	126	250	248	67	83		-2	
7	120	0.10	0.68	970.43	970.40	126	250	248	67	83		-2	
	122.5	0.12	0.82	971.76	971.73	127	250	248	67	83		-2	
	125	0.11	0.75	973.21	973.16	127	250	248	67	83		-2	
	127.5	0.11	0.75	974.58	974.61	127	250	248	67	82		-2	
	130	0.11	0.75	976.03	975.99	125	250	248	66	82		-2	
	132.5	0.11	0.75	977.41	977.37	126	250	248	66	82		-2	
	135	0.11	0.75	978.79	978.77	126	249	249	67	83		-2	
	137.5	0.11	0.75	980.19	980.18	126	249	249	67	83		-2	
8	140	0.11	0.75	981.60	981.59	125	249	249	67	83		-2	
	142.5	0.12	0.82	983.01	983.00	125	249	249	67	83		-2	
	145	0.10	0.68	984.48	984.45	125	250	249	66	82		-2	
	147.5	0.11	0.75	985.93	985.93	125	250	249	66	82		-2	
	150	0.09	0.61	987.35	987.42	125	250	249	66	82		-2	
	152.5	0.05	0.34	988.71	988.78	125	250	250	66	82		-2	
	155	0.05	0.34	990.00	990.00	125	250	250	66	82		-2	
	157.5	0.05	0.34	990.96	991.37	125	250	250	66	82		-2	
	160	0.05	0.34	992.33	992.44	125	250	250	66	82		-2	

Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —
Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End — Post-Pitot Check —

— Isokinetic Sampling Train Data Sheet —

Operator Signature: SL

Job Name: Stericycle | Plant: Stericycle | Test No.: T2-M29 | Start Time: 12:01 | Stack D.: 24"
Job Number: 2202865 | Source: Incinerator | Operators: SRR | Finish Time: – | Pitot Check: –
Client: Stericycle | Traverse: 2/2 | Traverse Dir.: OUT-IN | Date: June 14, 16, 2022 | Port length: 8" | Page: 3 4 of 4

Dn: 0.32 | Cp: 0.827 | Bws: 5% | dH@: 1.7813 | Y: 0.9843 | Pbar: 29.85 | Pstatic: 0.07 | CO2: 6.4 | O2: 12.2 | Pitot ID 4' #4

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AUG Inlet (oF)	Meter AUG Outlet (oF)	Vac. Press. ("Hg)	Comments
1	0	0.12	0.82	–	992.44	117	250	249	67	83		-2	START: 12:01
	2.5	0.13	0.89	993.92	993.73	119	250	249	67	83		-2	
	5	0.12	0.82	995.28	995.28	119	250	249	67	83		-2	
	7.5	0.08	0.55	996.70	996.85	118	250	248	67	81		-2	
	10	0.08	0.55	998.06	998.20	117	248	248	67	81		-2	
	12.5	0.03	0.20	999.41	999.47	117	248	248	67	81		-2	
	15	0.10	0.68	1000.21	1000.60	117	250	248	67	81		-2	
	17.5	0.13	0.89	1001.96	1001.91	117	250	248	67	81		-2	
2	20	0.13	0.89	1003.46	1003.46	117	250	248	67	81		-2	
	22.5	0.12	0.82	1005.01	1005.01	117	250	248	67	81		-2	
	25	0.10	0.68	1006.56	1006.20	117	250	248	67	81		-2	
	27.5	0.09	0.61	1007.49	1007.93	116	250	248	67	81		-2	PAUSE: 12:30 - 14:05
	30	0.07	0.48	1009.06	1009.10	129	250	248	67	77		-2	
	32.5	0.25	1.71	1012.24	1041.23	129	250	248	67	77		-2	
	35	0.25	1.71	1013.37	1013.32	129	250	248	67	77		-2	
	37.5	0.24	1.60	1015.46	1015.46	127	250	248	67	77		-2	
3	40	0.24	1.60	1017.47	1017.48	127	250	248	67	77		-2	
	42.5	0.20	1.40	1019.55	1019.51	126	250	248	67	77		-2	
	45	0.15	1.00	1021.51	1021.36	126	250	250	67	77		-2	
	47.5	0.16	1.07	1023.00	1023.05	126	250	253	67	77		-2	
	50	0.17	1.13	1024.74	1024.67	126	251	250	67	77		-2	
	52.5	0.19	1.27	1026.42	1026.33	126	251	249	67	77		-2	
	55	0.23	1.53	1028.18	1028.04	128	251	249	66	77		-2	
	57.5	0.25	1.67	1030.07	1029.99	128	251	246	66	77		-2	
4	60	0.26	1.73	1032.11	1031.97	128	251	246	66	77		-2	
	62.5	0.25	1.66	1034.13	1034.03	127	250	245	67	77		-2	
	65	0.25	1.66	1036.15	1036.13	127	250	243	67	78		-2	
	67.5	0.24	1.60	1038.25	1038.20	127	251	245	67	78		-2	
	70	0.27	1.80	1040.27	1040.23	127	251	244	67	78		-2	
	72.5	0.20	1.33	1042.34	1042.30	127	251	243	67	78		-2	
	75	0.21	1.40	1044.19	1044.21	127	251	243	67	78		-2	
	77.5	0.21	1.40	1046.15	1046.09	127	251	243	67	78		-2	

Pause @ 11:49 Process Interruption "Unforseen Circumstances"

Pretest Leak Check Rate (cfm) – at – vacuum ("Hg) Leak Vol Start – Leak Vol. End –
Posttest Leak Check Rate (cfm) – at – vacuum ("Hg) Leak Vol Start – Leak Vol. End – Post-Pitot Check –

— Isokinetic Sampling Train Data Sheet —

Operator Signature: SR

Job Name: Stericycle | Plant: Stericycle | Test No.: T2-M29 | Start Time: — | Stack D.: 24"
Job Number: 2202865 | Source: Incinerator | Operators: SRR | Finish Time: 16:16 | Pitot Check: —
Client: Stericycle | Traverse: 2/2 | Traverse Dir.: OUT→IN | Date: June 16, 2022 | Port length: 8" | Page: 2 of 2

Dn: 0.32 Cp: 0.827 Bws: 5% dH@: 1.7813 Y: 0.9843 Pbar: 29.85 Pstatic: 0.07 CO2: 6.4 O2: 12.2 Pitot ID 4 #4

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter Inlet (oF)	Meter Outlet (oF)	Vac. Press. ("Hg)	Comments
5	80	0.20	1.33	1048.03	1047.98	127	250	246	67	79		-2	
	82.5	0.21	1.40	1049.92	1049.89	127	250	246	67	79		-2	
	85	0.21	1.40	1051.83	1051.81	127	250	246	67	79		-2	
	87.5	0.21	1.40	1053.75	1053.71	127	250	246	67	79		-2	
	90	0.24	1.60	1055.78	1055.62	128	250	246	67	79		-3	
	92.5	0.25	1.66	1057.74	1057.68	128	250	246	67	80		-3	
	95	0.27	1.80	1059.88	1059.77	129	251	246	67	80		-3	
	97.5	0.24	1.60	1061.97	1062.09	129	251	246	67	80		-3	
6	100	0.24	1.60	1064.16	1064.02	129	250	246	67	80		-3	
	102.5	0.25	1.66	1066.09	1066.29	128	250	246	67	80		-3	
	105	0.25	1.66	1068.36	1068.40	128	250	246	67	80		-3	
	107.5	0.25	1.66	1070.52	1070.52	128	250	246	67	80		-3	
	110	0.25	1.66	1071.77	1071.74	128	250	246	67	80		-3	
	112.5	0.25	1.66	1073.86	1074.71	128	250	246	67	80		-3	
	115	0.25	1.66	1076.83	1076.73	128	250	246	67	80		-3	
	117.5	0.20	1.34	1078.85	1078.80	128	250	246	67	80		-3	
7	120	0.20	1.34	1080.93	1080.85	127	250	246	67	80		-3	
	122.5	0.20	1.34	1082.90	1082.90	127	250	246	67	81		-3	
	125	0.20	1.34	1084.80	1084.78	127	250	246	67	81		-3	
	127.5	0.20	1.34	1086.68	1086.61	127	250	246	67	81		-3	
	130	0.20	1.34	1088.51	1088.43	125	250	250	67	82		-3	
	132.5	0.20	1.34	1090.43	1090.23	123	250	250	67	82		-3	
	135	0.21	1.40	1092.13	1092.05	123	251	250	67	81		-3	
	137.5	0.21	1.40	1094.00	1094.02	123	251	250	67	81		-3	
8	140	0.23	1.54	1095.97	1096.05	123	251	250	67	81		-3	
	142.5	0.19	1.27	1098.09	1098.17	122	248	249	67	81		-3	
	145	0.18	1.20	1100.02	1100.02	122	248	249	67	82		-3	
	147.5	0.19	1.27	1101.82	1101.85	122	248	249	67	82		-3	
	150	0.19	1.27	1103.65	1103.53	122	250	250	67	82		-3	
	152.5	0.19	1.27	1105.38	1105.33	122	250	250	67	81		-3	
	155	0.19	1.27	1107.19	1107.24	122	250	250	67	81		-3	
	157.5	0.18	1.22	1109.10	1109.07	122	250	250	67	81		-3	
	160	0.18	1.22	1110.92	1110.92	122	250	251	67	81		-3	STOP: 16:16

Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —
Posttest Leak Check Rate (cfm) <0.02 at -9 vacuum ("Hg) Leak Vol Start 1110.92 Leak Vol. End 1110.99 Post-Pitot Check ✓

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #: 2202865 Project: Stericycle

Date: Jun 17, 2022 Test: T3

Filter ID: NM 22031106

Sample Loc. Incinerator XAD Trap ID: N/A

Train ID: M29

Pre-weights By: DO Post-weights By: DO

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	5%HNO3 + 10% H2O2	919.8	788.6	
2	5%HNO3 + 10% H2O2	825.4	758.1	
3	Empty	664.9	643.4	
4	H2SO4/KMnO4	741.8	742.1	
5	H2SO4/KMnO4	756.1	752.5	
6	Silica	896.6	850.7	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	1000.0	1000.1	✓	DJ
Post-weights	1000.0	1000.1	✓	DO

Comments:

Nozzle Measurements:

1 0.32
2 0.32
3 0.32
4 0.32

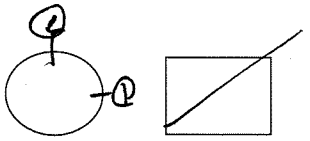
Avg

Signature

17/JUNE/2022
Date

— Isokinetic Sampling Train Data Sheet —

Operator Signature: SR



Job Name: Stericycle | Plant: Stericycle | Test No.: T3-M29 | Start Time: 8:36 | Stack D.: 24"
Job Number: 2202865 | Source: Incinerator | Operators: SRR | Finish Time: — | Pitot Check: ✓
Client: Stericycle | Traverse: 1,2 | Traverse Dir.: OUT→IN | Date: June 17, 2022 | Port length: 8" | Page: 1 of 4

Dn: 0.32 Cp: 0.827 Bws: 0.05 dH@: 1.7813 Y: 0.9843 Pbar: 29.06 Pstatic: 0.07 CO2: 12.2% O2: 6.4% Pitot ID 41 #4

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AUG Inlet (oF)	Meter AUG Outlet (oF)	Vac. Press. ("Hg)	Comments
1	0	0.13	1.16	—	111.01	116	250	250	67	77		-2	START: 836
	2.5	0.14	0.95	112.93	113.11	116	250	250	67	77		-2	
	5	0.14	0.95	114.72	114.80	117	250	248	67	77		-2	
	7.5	0.14	0.95	116.41	116.42	118	251	248	67	77		-2	
	10	0.14	0.95	118.03	118.03	118	249	248	67	77		-2	
	12.5	0.14	0.95	119.64	119.64	117	250	248	67	76		-2	
	15	0.14	0.98	121.25	121.24	118	250	248	67	76		-2	
	17.5	0.14	0.95	122.85	122.85	117	248	245	67	76		-2	
2	20	0.14	0.95	124.46	124.45	117	252	253	66	75		-2	
	22.5	0.14	0.95	126.06	126.05	116	250	247	66	75		-2	
	25	0.14	0.95	127.65	127.64	118	250	248	65	75		-2	
	27.5	0.14	0.95	129.24	129.24	118	250	248	65	75		-2	
	30	0.14	0.95	130.84	130.85	120	249	249	64	75		-2	
	32.5	0.14	0.95	132.45	132.45	120	249	249	64	75		-2	
	35	0.14	0.95	134.05	134.03	119	249	249	64	75		-2	
	37.5	0.14	0.95	135.63	135.62	119	250	249	63	74		-2	
3	40	0.14	0.95	137.22	137.22	119	251	250	63	74		-2	
	42.5	0.14	0.95	138.82	138.80	119	251	250	64	75		-2	
	45	0.16	1.09	140.40	140.41	119	250	250	64	75		-2	
	47.5	0.14	0.95	142.01	142.03	119	250	250	65	75		-2	
	50	0.14	0.95	143.63	143.63	119	251	251	65	75		-2	
	52.5	0.14	0.95	145.22	145.24	119	247	245	65	75		-2	
	55	0.14	0.95	146.83	146.86	119	251	250	65	75		-2	
	57.5	0.14	0.95	148.45	148.45	119	250	251	65	75		-2	
4	60	0.14	0.95	150.04	150.05	119	249	247	66	75		-2	
	62.5	0.14	0.95	151.64	151.65	119	250	250	66	75		-2	
	65	0.14	0.95	153.24	153.24	118	252	249	66	75		-2	
	67.5	0.14	0.95	154.83	154.85	118	251	250	66	75		-2	
	70	0.15	1.01	156.44	156.43	119	251	250	66	75		-2	
	72.5	0.15	1.01	158.08	158.10	119	248	246	67	75		-2	
	75	0.15	1.01	159.75	159.80	119	248	246	67	75		-2	
	77.5	0.15	1.01	161.45	161.47	120	248	246	67	75		-2	

Pretest Leak Check Rate (cfm) <0.02 at -10 vacuum ("Hg) Leak Vol Start 110.92 Leak Vol. End ~~110.0~~ 111.01
Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End — Post-Pitot Check —

— Isokinetic Sampling Train Data Sheet —

Operator Signature: SR

Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 1/2

Test No.: T3-M29
Operators: SRR
Traverse Dir.: OUT-IN

Start Time: ~
Finish Time: 11:16
Date: June 17, 2022

Stack D.: 24"
Pitot Check: ~
Port length: 8"

Dn: 0.32 Cp: 0.827 Bws: 0.05 dH@: 1.7813 Y: 0.9843 Pbar: 29.06 Pstatic: 0.07 CO2: 12.2% O2: 6.4% Pitot ID 4' #4

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AUG Inlet (oF)	Meter AUG Outlet (oF)	Vac. Press. ("Hg)	Comments
5	80	0.15	1.01	163.12	163.05	118	251	249	68	75		-2	
	82.5	0.15	1.01	164.70	164.76	118	251	249	68	75		-2	
	85	0.15	1.01	166.41	166.41	118	252	249	68	75		-2	
	87.5	0.15	1.01	168.08	168.08	118	252	249	69	75		-2	
	90	0.11	0.74	169.49	169.50	121	251	249	67	75		-2	
	92.5	0.15	1.01	171.15	170.95	121	251	249	67	75		-2	
	95	0.15	1.01	172.60	172.56	121	251	249	67	75		-2	
	97.5	0.15	1.01	174.21	174.26	124	251	249	67	75		-2	
6	100	0.15	1.01	175.91	175.82	124	251	249	67	75		-2	
	102.5	0.15	1.01	177.47	177.50	125	252	252	67	75		-2	
	105	0.15	1.01	179.15	179.16	125	249	248	67	75		-2	
	107.5	0.15	1.01	180.81	180.80	127	250	249	67	75		-2	
	110	0.17	1.15	182.45	182.49	126	250	249	67	75		-2	
	112.5	0.17	1.15	184.24	184.32	125	251	249	67	75		-3	
	115	0.17	1.15	186.07	186.05	125	251	249	67	75		-3	
	117.5	0.17	1.15	187.80	187.80	125	251	249	67	75		-3	
7	120	0.12	0.81	189.55	189.54	124	250	248	67	75		-3	
	122.5	0.12	0.81	191.01	191.08	123	250	249	67	75		-3	
	125	0.13	0.88	192.55	192.59	123	250	249	67	75		-3	
	127.5	0.13	0.88	194.12	194.15	125	250	249	67	75		-3	
	130	0.13	0.88	195.68	195.70	125	250	249	67	75		-2	
	132.5	0.13	0.88	197.23	197.23	126	252	250	67	75		-2	
	135	0.13	0.88	198.76	198.76	125	250	250	67	75		-2	
	137.5	0.13	0.88	200.29	200.27	127	253	250	67	75		-2	
8	140	0.13	0.88	201.80	201.78	126	253	251	67	75		-2	
	142.5	0.13	0.88	203.31	203.35	125	253	251	67	75		-2	
	145	0.13	0.88	204.88	204.86	125	253	252	67	75		-2	
	147.5	0.13	0.88	206.39	206.39	126	250	248	67	75		-2	
	150	0.13	0.88	207.92	207.94	126	249	248	67	75		-2	
	152.5	0.13	0.88	209.47	209.48	125	249	249	67	75		-2	
	155	0.13	0.88	211.01	211.01	123	251	249	67	75		-2	
	157.5	0.13	0.88	212.54	212.56	123	250	249	67	75		-2	
	160	0.13	0.88	214.09	214.09	126	250	249	67	75		-2	STOP: 11:16

Pretest Leak Check Rate (cfm) ~ at ~ vacuum ("Hg) Leak Vol Start ~ Leak Vol. End ~

Posttest Leak Check Rate (cfm) ~ at ~ vacuum ("Hg) Leak Vol Start ~ Leak Vol. End ~ Post-Pitot Check ~

— Isokinetic Sampling Train Data Sheet —

Operator Signature: SL

Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 12 2/2

Test No.: T3-M29
Operators: SRR
Traverse Dir.: OUT-IN

Start Time: 11:31
Finish Time: —
Date: June 17, 2022

Stack D.: 24"
Pitot Check: —
Port length: 8"

Page: 3 of 4

Dn: 0.32 Cp: 0.827 Bws: 0.05 dH@: 1.7813 Y: 0.9843 Pbar: 29.06 Pstatic: 0.07 CO2: 12.2% O2: 6.4% Pitot ID 4' #4

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AUG Inlet (oF)	Meter AUG Outlet (oF)	Vac. Press. ("Hg)	Comments
1	0	0.45	3.04	214.09	214.09	125	251	251	67	75		-4	START : 11:31
	2.5	0.36	2.03	216.17	216.22	125	251	251	62	74		-4	
	5	0.30	2.03	218.55	218.54	125	250	249	62	74		-4	
	7.5	0.30	2.03	220.85	220.87	124	251	249	61	75		-4	
	10	0.21	1.40	223.18	223.14	123	250	250	60	74		-4	
	12.5	0.21	1.40	225.68	225.13	123	250	251	61	75		-4	
	15	0.21	1.40	227.07	227.06	124	250	250	62	75		-4	
	17.5	0.21	1.40	229.00	229.00	124	250	250	62	75		-4	
2	20	0.21	1.40	230.94	230.94	123	250	250	62	75		-4	
	22.5	0.21	1.40	232.88	232.86	122	250	248	63	75		-3	
	25	0.21	1.40	234.80	234.79	124	250	248	63	75		-3	
	27.5	0.21	1.40	236.73	236.71	124	250	248	63	75		-3	
	30	0.21	1.40	238.67	238.69	123	250	249	64	75		-3	
	32.5	0.21	1.40	240.63	240.62	125	250	249	64	75		-3	
	35	0.21	1.40	242.56	242.58	125	250	249	65	75		-3	
	37.5	0.21	1.40	244.52	244.52	123	251	249	65	75		-3	
3	40	0.21	1.40	246.46	246.46	123	251	249	66	75		-3	
	42.5	0.21	1.40	248.40	248.36	122	251	250	66	75		-3	
	45	0.21	1.40	250.30	250.31	122	251	250	67	75		-3	
	47.5	0.18	1.20	252.25	252.25	124	251	250	67	76		-3	
	50	0.18	1.20	254.04	254.15	125	252	249	66	75		-3	
	52.5	0.18	1.20	255.94	255.95	125	251	250	67	75		-3	
	55	0.18	1.20	257.74	257.76	124	250	249	68	75		-3	
	57.5	0.18	1.20	259.55	259.55	124	250	249	68	75		-3	
4	60	0.18	1.20	261.34	261.35	124	251	248	67	75		-3	
	62.5	0.18	1.20	263.13	263.14	124	251	248	67	75		-3	
	65	0.18	1.20	264.93	264.97	125	250	249	67	76		-3	
	67.5	0.18	1.20	266.76	266.63	125	250	249	67	76		-3	
	70	0.12	0.80	268.42	268.36	125	250	249	67	76		-3	
	72.5	0.17	1.13	269.82	269.92	125	250	249	67	76		-3	
	75	0.17	1.13	271.66	271.45	125	250	249	67	76		-3	
	77.5	0.17	1.13	273.19	272.97	125	250	249	67	75		-3	

Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —

Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —

Post-Pitot Check —

— Isokinetic Sampling Train Data Sheet —

T3

Operator Signature: SK

Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 2/2

Test No.: TM-M29
Operators: SRR
Traverse Dir.: OUT→IN

Start Time: —
Finish Time: 14:11
Date: June 17, 2022

Stack D.: 24"
Pitot Check: —
Port length: 8"

Page: 4 of 4

Dn: 0.32 Cp: 0.827 Bws: 0.05 dH@: 1.7813 Y: 0.9843 Pbar: 29.06 Pstatic: 0.07 CO2: 12.2% O2: 6.4% Pitot ID 41 #4

Pt. (#)	Time (min)	Velocity Press. ("H2O)	Orifice Press. ("H2O)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AVG Inlet (oF)	Meter AVG Outlet (oF)	Vac. Press. ("Hg)	Comments
5	80	0.17	1.13	~~273.19~~	~~272.97~~	125	250	249	67	75		-3	→ Desired: 274.71, Actual: 274.71
	82.5	0.17	1.13	~~274.72~~	276.47	125	251	249	66	75		-3	# 276.45
	85	0.17	1.13	278.21	278.23	125	250	249	66	75		-3	
	87.5	0.17	1.13	279.97	279.97	125	249	247	66	75		-3	
	90	0.18	1.20	281.76	281.74	124	249	247	66	75		-3	
	92.5	0.18	1.20	283.53	283.56	125	249	249	65	75		-3	
	95	0.18	1.20	285.35	285.37	125	248	248	65	76		-3	
	97.5	0.18	1.20	287.16	287.17	125	248	248	65	76		-3	
6	100	0.18	1.20	288.96	288.91	125	248	248	65	76		-3	
	102.5	0.18	1.20	290.70	290.68	125	249	248	65	76		-3	
	105	0.11	0.73	292.48	292.49	124	248	248	65	76		-3	
	107.5	0.11	0.73	293.89	293.76	124	251	251	66	76		-3	
	110	0.11	0.73	295.16	295.25	124	250	251	66	76		-3	
	112.5	0.11	0.73	296.65	296.69	121	251	249	67	76		-3	
	115	0.11	0.73	298.05	298.03	124	247	246	67	76		-3	
	117.5	0.11	0.73	299.45	299.38	124	247	246	64	78		-3	
7	120	0.11	0.73	300.78	300.80	124	247	246	67	76		-3	
	122.5	0.11	0.73	302.20	302.20	122	247	246	67	76		-3	
	125	0.11	0.73	303.60	303.61	122	249	247	68	76		-3	
	127.5	0.11	0.73	305.01	305.02	124	249	247	67	76		-3	
	130	0.15	1.00	306.42	306.42	124	249	247	67	76		-3	
	132.5	0.15	1.00	308.06	307.84	123	249	247	63	76		-3	
	135	0.15	1.00	309.48	309.51	123	250	247	59	76		-3	
	137.5	0.15	1.00	311.15	311.21	123	249	248	60	76		-3	
8	140	0.15	1.00	312.85	312.84	122	247	247	60	76		-3	
	142.5	0.15	1.00	314.84	314.87	122	248	248	60	76		-3	
	145	0.15	1.00	316.51	316.16	123	249	249	61	76		-3	
	147.5	0.15	1.00	317.80	317.85	123	250	250	61	76		-3	
	150	0.15	1.00	319.49	319.49	123	251	251	62	76		-3	
	152.5	0.15	1.00	321.13	321.12	123	251	251	62	76		-3	
	155	0.15	1.00	322.76	322.73	123	248	249	64	76		-3	
	157.5	0.15	1.00	324.37	324.36	124	248	249	64	76		-3	
	160	0.15	1.00	326	326.01	124	248	249	64	76		-3	~~STOP~~ STOP: 1411
				326.00									

Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —

Posttest Leak Check Rate (cfm) <0.02 at 10" vacuum ("Hg) Leak Vol Start 326.01 Leak Vol. End 326.14

Post-Pitot Check ✓

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #: 2202865 Project: Stericycle

Date: 06/14/2022 Test: SVOC - T1

Filter ID: —

Sample Loc. Incinerator XAD Trap ID: Trap #6

Train ID: SVOC GC284240

Pre-weights By: MOS Post-weights By: MOS

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	KO	608.1	499.1	
2	IMP - EG	807.7	764.1	
3	IMP - MT	626.0	626.0	
4	Silica Gel	894.2	864.8	
5	Condenser	262.2	264.8	
6	XAD	356.8	356.7	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	1000.0	1000.4	✓	MOS
Post-weights	1000.0	999.7	✓	MOS

Comments:

Nozzle Measurements:
1 0.320
2 0.320
3 0.322
4 0.318

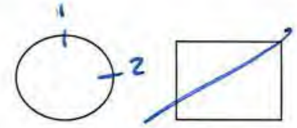
Avg 0.320

Signature

June 15 2022
Date

— Isokinetic Sampling Train Data Sheet —

Operator Signature: HE



Job Name: Stericycle | Plant: Brampton | Test No.: T1-SVOC | Start Time: 9:18 | Stack D.: 24"

Job Number: 2202865 | Source: incinerator | Operators: HE | Finish Time: – | Pre-Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)

Client: Stericycle | Traverse: 1/2 | Traverse Dir.: out → in | Date: June 15, 2022 | Port length 8" | Page: 1 of 4

Dn: 0.320 | Cp: 0.849 | Bws: 5% | dH@: 1.8074 | Y: 0.9814 | Pbar: 29.96 | Pstatic: 0.07 | CO2: 6.4 | O2: 12.2 | Pitot ID Calgary 3' #2

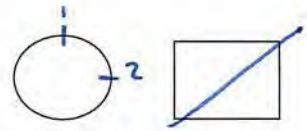
Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter Avg ~~Inlet~~ (oF)	Meter Avg ~~Outlet~~ (oF)	Vac. Press. ("Hg)	Comments Condenser T (°F)
1	0	0.10	0.95	–	0.09	112	250	250	66		83	–	43
	2.5	0.10	0.95	1.50	1.50	113	250	246	66		83	-2	43
	5	0.10	0.95	2.92	2.90	113	250	249	66		82	-2	43
	7.5	0.10	0.95	4.32	4.29	113	250	249	66		82	-2	42
	10	0.10	0.95	5.71	5.71	113	250	251	57		82	-2	42
	12.5	0.10	0.95	7.13	7.12	113	250	247	57		82	-2	42
	15	0.10	0.95	8.54	8.51	113	250	252	57		82	-2	43
	17.5	0.10	0.95	9.93	9.95	113	250	249	57		82	-2	43
2	20	0.10	0.95	11.37	11.34	113	250	249	57		82	-2	43
	22.5	0.10	0.95	12.76	12.76	114	250	250	56		83	-2	44
	25	0.10	0.95	14.18	14.18	114	250	250	56		83	-2	44
	27.5	0.10	0.95	15.60	15.60	114	250	250	56		83	-2	44
	30	0.10	0.95	17.02	17.01	113	250	250	56		82	-2	42
	32.5	0.10	0.95	18.43	18.43	113	250	250	56		82	-2	42
	35	0.10	0.95	19.85	19.85	113	250	250	56		82	-2	42
	37.5	0.10	0.95	21.27	21.27	113	250	250	56		82	-2	43
3	40	0.10	0.95	22.69	22.69	113	250	250	57		82	-2	42
	42.5	0.10	0.95	24.11	24.09	113	250	250	57		82	-2	43
	45	0.10	0.95	25.51	25.51	113	250	250	57		82	-2	42
	47.5	0.10	0.95	26.93	26.96	113	250	250	57		82	-2	42
	50	0.10	0.95	28.38	28.37	113	250	250	57		82	-2	42
	52.5	0.10	0.95	29.79	29.79	113	250	250	57		82	-2	42
	55	0.10	0.95	31.21	31.22	113	250	250	57		82	-2	42
	57.5	0.10	0.95	32.64	32.65	113	250	250	57		82	-2	42
4	60	0.10	0.95	34.07	34.06	113	250	250	57		82	-2	42
	62.5	0.10	0.95	35.48	35.48	113	250	250	57		82	-2	42
	65	0.10	0.95	36.90	36.90	113	250	250	57		82	-2	42
	67.5	0.10	0.95	38.32	38.33	113	250	250	57		84	-2	42
	70	0.10	0.95	39.76	39.73	113	250	250	57		85	-2	42
	72.5	0.10	0.95	41.16	41.16	113	250	250	57		85	-2	42
	75	0.10	0.95	42.59	42.59	113	250	250	57		85	-2	42
	77.5	0.10	0.95	44.02	44.02	113	250	250	57		85	-2	42
5	80	0.25	2.35	45.45	45.44	113	250	250	57		85	-2	42
	82.5	0.25	2.35	47.69	47.68	113	250	250	54		85	-2	42
	85	0.25	2.35	49.93	49.95	113	250	250	54		85	-2	42
	87.5	0.25	2.35	52.20	52.18	115	250	250	54		85	-2	42
	90	0.25	2.35	54.43	54.40	115	250	250	54		85	-2	42
	92.5	0.25	2.35	56.65	56.65	115	250	250	54		85	-2	42
	95	0.25	2.35	58.90	58.90	115	250	250	54		85	-2	42
	97.5	0.25	2.35	61.15	61.15	115	250	250	54		85	-2	42
6	100	0.25	2.35	63.40	63.36	115	250	250	54		85	-2	42
	102.5	0.25	2.35	65.61	65.61	115	250	250	54		85	-2	43

Pretest Leak Check Rate (cfm) 0.002 at -10 vacuum ("Hg) Leak Vol Start 0.00 Leak Vol. End 0.09 Post-Pitot Check: – (< 0.1" @ 3.0" for 15 sec)

Posttest Leak Check Rate (cfm) – at – vacuum ("Hg) Leak Vol Start – Leak Vol. End –

— Isokinetic Sampling Train Data Sheet —

Operator Signature: HE



Job Name: Stericycle | Plant: Brampton | Test No.: T1-SVOC | Start Time: - | Stack D.: 24"
Job Number: 2202865 | Source: Incinerator | Operators: HE | Finish Time: - | Pre-Pitot Check: ✓ | (< 0.1" @ 3.0" for 15 sec)
Client: Stericycle | Traverse: 2x2 | Traverse Dir.: Out → In | Date: June 15, 2022 | Port length: 8" | Page: 2 of 4

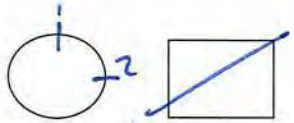
Dn: 0.320 | Cp: 0.849 | Bws: 5% | dH@: 1.8074 | Y: 0.9814 | Pbar: 29.96 | Pstatic: 0.07 | CO2: 6.4 | O2: 12.2 | Pitot ID: Calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter Avg Inlet (oF)	Meter Avg Outlet (oF)	Vac. Press. ("Hg)	Comments
	105	0.25	2.35	67.86	67.86	115	250	250	54		85	-2	Condenser T (°F) 43
	107.5	0.25	2.35	70.11	70.11	115	250	251	55		85	-2	43
	110	0.25	2.35	72.36	72.33	116	250	254	55		90	-2	48
	112.5	0.25	2.35	74.60	74.56	115	250	248	60		90	-2	53
	115	0.25	2.35	76.83	76.83	115	250	250	60		90	-2	54
	117.5	0.25	2.35	79.10	79.08	116	250	251	61		90	-2	58
7	120	0.25	2.35	81.35	81.33	116	250	249	61		90	-2	60
	122.5	0.25	2.35	83.60	83.62	116	250	250	61		90	-2	60
	125	0.25	2.35	85.89	85.87	116	250	250	61		90	-2	60
	127.5	0.25	2.35	88.14	88.10	115	250	249	62		90	-2	62
	130	0.25	2.35	90.37	90.37	116	250	252	62		90	-2	62
	132.5	0.25	2.35	92.64	92.62	116	250	248	62		90	-2	62
	135	0.25	2.35	94.89	94.89	116	250	250	62		90	-2	62
	137.5	0.30	2.35	97.16	97.20	116	250	250	62		90	-2	62
8	140	0.30	2.35	99.69	99.66	116	250	250	60		90	-3	62
	142.5	0.30	2.35	102.15	102.11	116	250	250	60		90	-3	62
	145	0.30	2.35	104.60	104.58	116	250	250	60		90	-3	62
	147.5	0.30	2.35	107.07	107.07	116	250	250	60		90	-3	62
	150	0.30	2.35	109.56	109.55	116	250	250	60		90	-3	62
	152.5	0.30	2.35	112.04	112.02	116	250	250	60		90	-3	62
	155	0.30	2.35	114.51	114.50	116	250	250	60		90	-3	62
	157.5	0.30	0.95	117.10	117.10	115	250	250	63		86	-3	44
	160			118.53	118.53								

Pretest Leak Check | Rate (cfm) - at - vacuum ("Hg) | Leak Vol Start - | Leak Vol. End - | Post-Pitot Check: - (< 0.1" @ 3.0" for 15 sec)
Posttest Leak Check | Rate (cfm) - at - vacuum ("Hg) | Leak Vol Start - | Leak Vol. End -

— Isokinetic Sampling Train Data Sheet —

Operator Signature: AG



Job Name: Stericycle | Plant: Brampton | Test No.: T1-SR06 | Start Time: - | Stack D.: 24"
Job Number: [redacted] 2202865 | Source: Incinerator | Operators: HE | Finish Time: - | Pre -Pitot Check: ✓ | (< 0.1" @ 3.0" for 15 sec)
Client: Stericycle | Traverse: 2/2 | Traverse Dir.: out-in | Date: June 15, 2022 | Port length: 84 | Page: 3 of 4

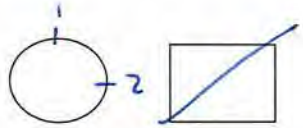
Dn: 0.320 | Cp: 0.849 | Bws: 5% | dH@: 1.874 | Y: 0.9814 | Pbar: 29.96 | Pstatic: 0.07 | CO2: 6.4 | O2: 12.2 | Pitot ID: calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter Avg Inlet (oF)	Meter Avg Outlet (oF)	Vac. Press. ("Hg)	Comments
													Condenser T (oF)
1	0	0.10	0.95	-	118.53	113	250	249	63		86	-	44
	2.5	0.10	0.95	119.96	119.92	113	250	250	63		86	-2	44
	5	0.10	0.95	121.35	121.35	113	250	250	63		86	-2	43
	7.5	0.10	0.95	122.78	122.78	113	250	250	63		86	-2	43
	10	0.10	0.95	124.21	124.20	113	250	251	64		83	-2	43
	12.5	0.10	0.95	125.63	125.63	113	250	249	63		83	-2	43
	15	0.10	0.95	127.06	127.06	113	250	249	63		83	-2	43
	17.5	0.10	0.95	128.49	128.49	113	250	250	63		83	-2	43
2	20	0.10	0.95	129.92	129.93	114	251	248	64		82	-2	46
	22.5	0.10	0.95	131.36	131.35	114	250	250	64		82	-2	46
	25	0.10	0.95	132.78	132.78	114	250	250	62		82	-2	46
	27.5	0.10	0.95	134.21	134.20	114	250	250	62		82	-2	46
	30	0.10	0.95	135.63	135.62	116	250	250	62		82	-2	46
	32.5	0.10	0.95	137.05	137.05	115	250	250	62		82	-2	46
	35	0.10	0.95	138.48	138.48	115	250	250	62		82	-2	46
	37.5	0.15	1.40	139.91	139.90	115	250	250	62		82	-2	46
3	40	0.15	1.40	141.65	141.59	115	250	250	62		82	-2	46
	42.5	0.15	1.40	143.34	143.34	115	250	250	62		82	-2	46
	45	0.15	1.40	145.09	145.09	115	250	250	62		82	-2	46
	47.5	0.15	1.40	146.79	146.75	116	250	249	61		82	-2	50
	50	0.15	1.40	148.50	148.48	116	250	249	61		82	-2	50
	52.5	0.15	1.40	150.23	150.20	116	250	250	61		82	-2	52
	55	0.15	1.40	151.95	151.93	116	250	250	61		82	-2	52
	57.5	0.15	1.40	153.68	153.69	116	250	250	61		82	-2	52
4	60	0.15	1.40	155.44	155.40	116	250	250	61		82	-2	52
	62.5	0.15	1.40	157.15	157.15	117	250	250	61		82	-2	52
	65	0.15	1.40	158.90	158.85	117	250	250	61		82	-2	52
	67.5	0.15	1.40	160.60	160.58	117	250	250	61		82	-2	52
	70	0.15	1.40	162.33	162.35	117	250	250	61		82	-2	52
	72.5	0.15	1.40	164.10	164.10	117	250	250	61		82	-2	52
	75	0.15	1.40	165.85	165.84	117	250	250	61		82	-2	52
	77.5	0.15	1.40	167.59	167.56	118	250	250	61		82	-4	55
5	80	0.15	1.40	169.31	169.31	118	250	250	61		82	-4	55
	82.5	0.15	1.40	171.06	171.05	116	250	250	63		82	-4	57
	85	0.15	1.40	172.80	172.80	116	250	250	63		82	-4	57
	87.5	0.15	1.40	174.55	174.56	116	250	250	63		82	-4	57
	90	0.15	1.40	176.31	176.31	116	250	250	63		82	-4	57
	92.5	0.15	1.40	178.06	178.06	116	250	250	63		82	-4	57
	95	0.15	1.40	179.81	179.80	116	250	250	63		82	-4	57
	97.5	0.15	1.40	181.55	181.57	116	250	250	63		82	-4	57
6	100	0.15	1.40	183.32	183.29	116	250	250	63		82	-4	57
	102.5	0.15	1.40	185.04	185.04	116	250	250	63		82	-4	59

Pretest Leak Check: Rate (cfm) - at - vacuum ("Hg) | Leak Vol Start - | Leak Vol. End - | Post -Pitot Check: - (< 0.1" @ 3.0" for 15 sec)
Posttest Leak Check: Rate (cfm) - at - vacuum ("Hg) | Leak Vol Start - | Leak Vol. End -

— Isokinetic Sampling Train Data Sheet —

Operator Signature: HE



Job Name: Stericycle | Plant: Brampton | Test No.: T1-SVOC | Start Time: - | Stack D.: 24"
Job Number: 2202865 | Source: Incinerator | Operators: HE | Finish Time: 14:58 | Pre -Pitot Check: ✓ | (< 0.1" @ 3.0" for 15 sec)
Client: Stericycle | Traverse: 2/2 | Traverse Dir.: out→in | Date: June 15, 2022 | Port length: 8" | Page: 4 of 4

Dn: 0.320 | Cp: 0.849 | Bws: 5% | dH@: 1.8074 | Y: 0.9814 | Pbar: 29.96 | Pstatic: 0.07 | CO2: 6.4 | O2: 12.2 | Pitot ID: calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter Avg Inlet (oF)	Meter Avg Outlet (oF)	Vac. Press. ("Hg)	Comments
	105	0.15	1.40	186.79	186.76	116	250	250	63		85	-4	Condenser T (oF) 54
	107.5	0.15	1.40	188.51	188.51	116	250	250	63		85	-4	54
	110	0.15	1.40	190.26	190.26	114	250	250	63		85	-4	54
	112.5	0.15	1.40	192.01	192.01	114	250	250	64		87	-4	54
	115	0.15	1.40	193.76	193.76	114	250	250	64		82	-4	54
	117.5	0.15	1.40	195.50	195.54	114	250	250	64		87	-4	54
7	120	0.15	1.40	197.28	197.24	114	250	250	64		82	-4	60
	122.5	0.15	1.40	198.98	199.01	114	250	250	62		83	-4	60
	125	0.15	1.40	200.75	200.78	113	250	250	62		83	-4	60
	127.5	0.15	1.40	202.52	202.51	113	250	250	62		83	-4	60
	130	0.15	1.40	204.25	204.25	113	250	250	62		83	-4	60
	132.5	0.15	1.40	205.99	205.98	113	250	250	62		83	-4	60
	135	0.15	1.40	207.72	207.72	113	250	250	62		83	-4	60
	137.5	0.15	1.40	209.46	209.46	113	250	250	62		83	-4	60
8	140	0.15	1.40	211.20	211.20	113	250	250	62		83	-4	60
	142.5	0.15	1.40	212.94	212.93	113	250	250	62		83	-4	62
	145	0.15	1.40	214.67	214.69	113	250	250	62		83	-4	62
	147.5	0.15	1.40	216.43	216.46	113	250	250	62		83	-4	62
	150	0.15	1.40	218.20	218.17	113	250	250	62		83	-4	62
	152.5	0.15	1.40	219.91	219.91	113	250	250	62		83	-4	62
	155	0.15	1.40	221.64	221.65	113	250	250	62		83	-4	62
	157.5	0.15	1.40	223.39	223.39	113	250	250	62		83	-4	62
	160			225.12	225.13								

Pretest Leak Check | Rate (cfm) - at - vacuum ("Hg) | Leak Vol Start - | Leak Vol. End - | Post -Pitot Check: ✓ (< 0.1" @ 3.0" for 15 sec)
Posttest Leak Check | Rate (cfm) 60.02 at -10 vacuum ("Hg) | Leak Vol Start 223.41 | Leak Vol. End 223.56

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #: 2202865 Project: Stericycle

Date: June 15 2022 Test: SVOC-T2

Filter ID: —

Sample Loc. Incinerator XAD Trap ID: Trap # 3

Train ID: SVOC

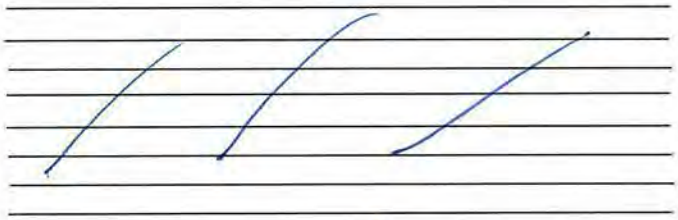
Pre-weights By: MOS Post-weights By: MOS

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	KO	738.7	501.3	
2	IMP - EG	759.8	717.3	
3	IMP - MT	622.1	621.7	
4	Silica Gel	951.8	918.8	
5	Condenser	315.2	315.2	
6	XAD	338.3	335.8	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error < 0.5 g	Initials
Pre-weights	1000.0	1000.1	✓	MOS
Post-weights	1000.0	1000.3	✓	MOS

Comments:



Nozzle Measurements:
1 Same as
2 T1
3
4

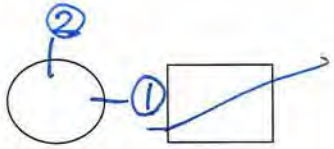
Avg

M Gottwald
Signature

June 16 2022
Date

— Isokinetic Sampling Train Data Sheet —

Operator Signature: AE



Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 1/2

Test No.: T2-SVOC
Operators: HE
Traverse Dir.: in→out

Start Time: 08:58
Finish Time: —
Date: June 16, 2022

Stack D.: 24"
Pitot Check: ✓
Port length: 8"

Page: 1 of 4

Dn: 0.32 Cp: 0.849 Bws: 5% dH@: 1.8074 Y: 0.9814 Pbar: 29.85 Pstatic: 0.07 CO2: 6.4 O2: 12.2 Pitot ID: Calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AUG Inlet (oF)	Meter AUG Outlet (oF)	Vac. Press. ("Hg)	Comments
													Condenser T(out)
1	0	0.10	0.90	—	0.14	122	250	252	64		85	—	61
	2.5	0.10	0.90	1.55	1.59	124	250	250	64		85	-2	61
	5	0.10	0.90	3.00	2.98	123	249	250	64		85	-2	61
	7.5	0.10	0.90	4.39	4.38	123	250	250	64		85	-2	61
	10	0.10	0.90	5.79	5.79	124	250	250	64		85	-2	61
	12.5	0.10	0.90	7.28	7.19	125	250	250	64		85	-2	57
	15	0.10	0.90	8.61	8.61	125	250	250	64		85	-2	57
	17.5	0.10	0.90	10.03	10.03	125	250	250	64		85	-2	57
2	20	0.10	0.90	11.45	11.43	125	250	250	64		85	-2	57
	22.5	0.10	0.90	12.85	12.84	125	250	250	64		85	-2	57
	25	0.10	0.90	14.26	14.23	125	250	250	64		85	-2	57
	27.5	0.10	0.90	15.65	15.66	125	250	250	64		83	-2	57
	30	0.10	0.90	17.08	17.09	126	250	250	64		83	-2	57
	32.5	0.10	0.90	18.51	18.51	126	250	250	63		83	-2	57
	35	0.10	0.90	19.92	19.92	127	250	250	63		83	-2	57
	37.5	0.10	0.90	21.33	21.33	127	250	250	63		83	-2	57
3	40	0.15	1.40	22.94	22.75	127	250	250	63		83	-2	57
	42.5	0.15	1.40	24.48	24.45	127	250	250	63		83	-2	57
	45	0.15	1.40	26.18	26.23	127	250	250	63		83	-2	57
	47.5	0.15	1.40	27.96	27.95	127	250	250	62		83	-2	55
	50	0.15	1.40	29.68	29.68	127	250	250	62		83	-2	55
	52.5	0.15	1.40	31.41	31.42	127	250	250	62		83	-2	55
	55	0.15	1.40	33.15	33.15	127	250	250	62		83	-4	55
	57.5	0.15	1.40	34.88	34.87	127	250	250	62		83	-4	55
4	60	0.15	1.40	36.60	36.60	127	250	250	62		83	-4	55
	62.5	0.15	1.40	38.33	38.31	128	250	250	62		83	-4	55
	65	0.15	1.40	40.04	40.04	128	250	250	62		83	-4	55
	67.5	0.15	1.40	41.77	41.75	128	250	250	62		83	-4	55
	70	0.15	1.40	43.48	43.48	128	250	250	62		83	-4	55
	72.5	0.15	1.40	45.21	45.20	128	250	250	62		83	-4	55
	75	0.15	1.40	46.93	46.91	128	250	250	62		85	-5	55
	77.5	0.15	1.40	48.64	48.63	128	250	250	62		85	-5	57

Pretest Leak Check Rate (cfm) <0.02 at 10" vacuum ("Hg) Leak Vol Start 0.00 Leak Vol End 0.12

Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol End —

Post-Pitot Check —

— Isokinetic Sampling Train Data Sheet —

Operator Signature: AH

Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 1/2

Test No.: T2-SVOC
Operators: HE
Traverse Dir.: N→out

Start Time: ~
Finish Time: ~
Date: June 16, 2022

Stack D.: 24"
Pitot Check: ~
Port length: 8"

Page: 2 of 4

Dn: 0.32 Cp: 0.849 Bws: 5-1. dH@: 1.8074 Y: 0.9814 Pbar: 29.85 Pstatic: 0.07 in CO2: 6.4 O2: 12.2 Pitot ID: Calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AVG Inlet (oF)	Meter AVG Outlet (oF)	Vac. Press. ("Hg)	Comments
													Cadaver temp.
5	80	0.15	1.40	50.36	50.33	126	250	250	64		85	-5	60
	82.5	0.15	1.40	52.08	52.08	126	250	250	64		85	-5	60
	85	0.15	1.40	53.81	53.80	126	250	250	64		85	-5	60
	87.5	0.15	1.40	55.53	55.51	126	250	250	64		85	-5	60
	90	0.15	1.40	57.24	57.26	126	250	250	64		85	-5	60
	92.5	0.15	1.40	58.99	58.98	126	250	250	64		85	-5	60
	95	0.15	1.40	60.71	60.70	126	250	250	64		85	-5	60
	97.5	0.15	1.40	62.43	62.43	126	250	250	64		85	-5	60
6	100	0.20	1.80	64.16	64.16	126	250	250	64		85	-5	62
	102.5	0.20	1.80	66.15	66.12	126	250	250	64		85	-5	58
	105	0.20	1.80	68.11	68.11	127	250	249	64		86	-6	58
	107.5	0.20	1.80	70.11	70.09	127	250	250	64		86	-6	58
	110	0.20	1.80	72.09	72.07	127	250	250	64		86	-6	58
	112.5	0.20	1.80	74.07	74.07	127	250	250	64		86	-6	58
	115	0.20	1.80	76.07	76.05	127	250	250	64		86	-6	57
	117.5	0.20	1.80	78.05	78.04	127	250	250	64		86	-6	57
7	120	0.20	1.80	80.04	80.03	127	250	250	64		86	-6	57
	122.5	0.20	1.80	82.03	82.02	127	250	250	64		86	-6	57
	125	0.20	1.80	84.02	84.00	125	250	250	64		86	-6	57
	127.5	0.20	1.80	86.00	85.98	125	250	250	64		86	-6	57
	130	0.20	1.80	87.98	87.98	125	250	250	64		86	-6	57
	132.5	0.20	1.80	89.98	89.95	125	250	250	64		87	-6	57
	135	0.20	1.80	91.98	91.96	125	250	250	64		87	-6	57
	137.5	0.20	1.80	93.97	93.96	125	250	250	64		87	-6	57
8	140	0.20	1.80	95.97	95.97	125	250	250	64		87	-6	57
	142.5	0.20	1.80	97.98	97.97	125	250	250	64		87	-6	57
	145	0.20	1.80	99.98	99.96	125	250	250	64		87	-6	57
	147.5	0.20	1.80	101.97	101.95	125	250	250	64		87	-6	57
	150	0.20	1.80	103.96	103.94	125	250	250	64		87	-6	57
	152.5	0.20	1.80	105.95	105.95	125	250	250	64		87	-6	57
	155	0.20	1.80	107.96	107.97	125	250	250	64		87	-6	57
	157.5	0.20	1.80	109.98	109.95	125	250	250	64		87	-6	57
	160			111.96	111.96								

Test paused @ 11:49, Client stopped feeding because the bed stopped moving. Resumed @ 12:00

Pretest Leak Check Rate (cfm) ~ at ~ vacuum ("Hg) Leak Vol Start ~ Leak Vol. End ~

Posttest Leak Check Rate (cfm) ~ at ~ vacuum ("Hg) Leak Vol Start ~ Leak Vol. End ~ Post-Pitot Check ~

— Isokinetic Sampling Train Data Sheet —

Operator Signature: QH

Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 2/2

Test No.: T2-SVOC
Operators: HE
Traverse Dir.: M→out

Start Time: —
Finish Time: —
Date: June 16, 2022

Stack D.: 24"
Pitot Check: —
Port length: 8"

Page: 3 of 4

Dn: 0.32 Cp: 0.849 Bws: 5% dH@: 1.8074 Y: 0.9814 Pbar: 29.85 Pstatic: 0.07 CO2: 6.4 O2: 12.2 Pitot ID: Calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AUG inlet (oF)	Meter AUG outlet (oF)	Vac. Press. ("Hg)	Comments
													condenser temp
1	0	0.10	0.90	—	111.96	120	250	250	64		86	—	Resume: 18:01 CT: 59
	2.5	0.10	0.90	113.39	113.39	120	250	250	65		86	-3	59
	5	0.10	0.90	114.82	114.82	120	250	250	65		86	-3	59
	7.5	0.10	0.90	116.25	116.30	120	250	250	65		86	-3	59
	10	0.10	0.90	117.73	117.70	120	250	250	65		86	-3	59
	12.5	0.10	0.90	119.13	119.10	120	250	250	65		86	-3	59
	15	0.10	0.90	120.53	120.56	120	250	250	65		86	-3	59
	17.5	0.10	0.90	121.99	121.98	121	250	250	65		84	-3	59
2	20	0.10	0.90	123.41	123.41	121	250	250	65		84	-3	59
	22.5	0.10	0.90	124.83	124.83	121	250	250	65		84	-3	59
	25	0.10	0.90	126.25	126.24	121	250	250	65		84	-3	59
	27.5	0.10	0.90	127.66	127.65	121	250	250	65		84	-3	59 pause: 12:30
	30	0.10	0.90	129.07	129.10	128	250	250	65		79	-3	59 resume: 13:05
	32.5	0.10	0.90	130.50	130.48	128	250	249	64		79	-3	59
	35	0.10	0.90	131.88	131.88	128	250	250	64		79	-3	59
	37.5	0.10	0.90	133.28	133.30	128	250	249	64		79	-3	59
3	40	0.10	0.90	134.70	134.70	127	250	248	64		79	-4	58
	42.5	0.10	0.90	136.10	136.10	129	250	250	64		79	-4	58
	45	0.10	0.90	137.50	137.52	129	250	250	64		79	-4	58
	47.5	0.10	0.90	138.92	138.93	128	250	250	64		79	-4	58
	50	0.10	0.90	140.33	140.33	128	250	250	64		79	-4	58
	52.5	0.10	0.90	141.73	141.73	128	250	250	64		79	-4	58
	55	0.10	0.90	143.13	143.15	127	250	249	64		79	-4	58
	57.5	0.10	0.90	144.55	144.54	127	250	250	64		79	-4	58
4	60	0.15	1.35	145.94	145.94	127	250	250	64		79	-4	58
	62.5	0.15	1.35	147.65	147.63	127	250	250	64		79	-4	58
	65	0.15	1.35	149.34	149.38	127	250	250	64		79	-4	58
	67.5	0.15	1.35	151.09	151.05	127	250	250	64		79	-4	58
	70	0.15	1.35	152.76	152.78	127	250	250	64		79	-4	58
	72.5	0.15	1.35	154.49	154.48	127	250	250	64		79	-4	58
	75	0.15	1.35	156.19	156.16	127	250	250	64		79	-4	58
	77.5	0.15	1.35	157.87	157.84	127	250	250	64		79	-4	58

Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol End —

Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol End —

Post-Pitot Check —

— Isokinetic Sampling Train Data Sheet —

Operator Signature: HE

Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 2/2

Test No.: T2-SVOC
Operators: HE
Traverse Dir.: M → out

Start Time: [redacted]
Finish Time: 16:16
Date: June 16, 2022

Stack D.: 24"
Pitot Check: —
Port length: 8"

Page: 4 of 4

Dn: 0.32 Cp: 0.849 Bws: 5% dH@: 1.8074 Y: 0.9814 Pbar: 29.85 Pstatic: 0.07 CO2: 6.4 O2: 12.2 Pitot ID: Calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter AVG Inlet (oF)	Meter AVG Outlet (oF)	Vac. Press. ("Hg)	Comments
5	80	0.30	2.70	159.55	159.54	127	249	251	62		82	-8	56
	82.5	0.30	2.70	161.96	161.92	127	250	250	62		82	-8	56
	85	0.30	2.70	164.34	164.35	127	250	250	62		82	-8	56
	87.5	0.30	2.70	166.77	166.77	129	250	250	62		82	-8	56
	90	0.30	2.70	169.19	169.18	129	250	250	62		82	-8	56
	92.5	0.30	2.70	171.60	171.57	129	250	250	62		82	-8	56
	95	0.30	2.70	173.99	173.99	129	250	250	62		82	-8	56
	97.5	0.30	2.70	176.41	176.40	129	250	250	62		82	-8	56
6	100	0.30	2.70	178.82	178.82	129	250	250	63		82	-8	56
	102.5	0.30	2.70	181.24	181.27	129	250	250	63		82	-8	57
	105	0.30	2.70	183.69	183.67	129	250	250	63		82	-8	57
	107.5	0.30	2.70	186.09	186.07	129	250	250	63		82	-8	57
	110	0.30	2.70	188.49	188.47	129	250	250	62		81	-8	57
	112.5	0.30	2.70	190.89	190.87	129	250	250	62		84	-8	57
	115	0.30	2.70	193.29	193.25	129	250	252	62		84	-8	57
	117.5	0.30	2.70	195.67	195.65	129	250	250	62		84	-8	57
7	120	0.30	2.70	198.07	198.05	125	250	251	62		84	-8	57
	122.5	0.30	2.70	200.47	200.43	125	250	250	62		84	-8	57
	125	0.30	2.70	202.85	202.80	125	250	250	62		84	-8	57
	127.5	0.30	2.70	205.22	205.21	125	250	250	62		84	-8	57
	130	0.30	2.70	207.63	207.63	123	250	250	61		84	-8	57
	132.5	0.30	2.70	210.08	210.08	123	250	250	61		84	-8	57
	135	0.30	2.70	212.53	212.53	123	250	250	61		84	-8	57
	137.5	0.30	2.70	214.98	214.95	124	250	250	61		84	-8	57
8	140	0.30	2.70	217.40	217.40	124	250	250	61		84	-8	57
	142.5	0.30	2.70	219.85	219.87	124	250	250	61		84	-8	57
	145	0.30	2.70	222.32	222.29	124	250	250	61		81	-8	57
	147.5	0.30	2.70	224.74	224.70	124	250	250	61		84	-8	57
	150	0.30	2.70	227.15	227.11	124	250	250	61		84	-8	57
	152.5	0.30	2.70	229.56	229.54	124	250	250	61		84	-8	57
	155	0.30	2.70	231.99	231.95	124	250	250	61		85	-8	57
	157.5	0.30	2.70	234.40	234.40	124	250	250	61		85	-8	57
	160			236.85	236.85								

Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —
Posttest Leak Check Rate (cfm) 0.02 at 15" vacuum ("Hg) Leak Vol Start 236.85 Leak Vol. End 237.02 Post-Pitot Check ✓

RWDI AIR Inc.
Consulting Engineers

Moisture Analysis Data Sheet

Project #: 2202865 Project: Stericycle

Date: June 17 2022 Test: SVOC-T3

Filter ID: —

Sample Loc. Incinerator XAD Trap ID: Trap # 2

Train ID: SVOC Clean MM5-F

Pre-weights By: MOS Post-weights By: HE

Impinger #	Impinger Contents	Final Weight (g)	Initial Weight (g)	Net Condensate (g)
1	KO	693.6	456.6	
2	IMP - EG	783.7	750.0	
3	IMP - MT	632.3	632.3	
4	Silica Gel	864.8	840.0	
5	Condenser	262.5	260.7	
6	XAD	378.4	375.1	
7				
8				
TOTAL				

Balance QA Check:

	Actual (g)	Measured (g)	Error ≤ 0.5 g	Initials
Pre-weights	1000.0	1000.1	✓	HE
Post-weights	1000.0	1000.1	✓	HE

Comments:

Nozzle Measurements:
1 Same as
2 T1
3
4

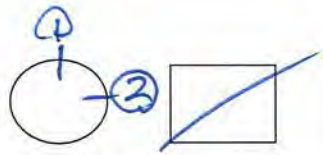
Avg

Signature

June 17, 2022
Date

— Isokinetic Sampling Train Data Sheet —

Operator Signature: QH



Job Name: Stericycle | Plant: Stericycle | Test No.: T3-SVOC | Start Time: 08:36 | Stack D.: 24"
Job Number: 2202865 | Source: Incinerator | Operators: HE | Finish Time: — | Pitot Check: ✓
Client: Stericycle | Traverse: 1/2 | Traverse Dir.: IN→OUT | Date: June 17, 2022 | Port length: 8" | Page: 1 of 4

Dn: 0.32 Cp: 0.849 Bws: 5% dH@: 1.8074 Y: 0.9814 Pbar: 29.06 Pstatic: 0.07 CO2: 6.4 O2: 12.2 Pitot ID: Calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter Avg Inlet (oF)	Meter Avg Outlet (oF)	Vac. Press. ("Hg)	Comments
													Condenser Temp
1	0	0.10	0.90	—	0.07	119	250	251	62		80	—	63
	2.5	0.10	0.90	1.50	1.47	119	250	248	62		78	-2	63
	5	0.10	0.90	2.90	2.89	119	250	250	62		78	-2	63
	7.5	0.10	0.90	4.32	4.32	120	250	251	62		78	-2	63
	10	0.10	0.90	5.75	5.75	120	250	248	62		78	-2	63
	12.5	0.10	0.90	7.18	7.12	120	250	250	62		78	-2	63
	15	0.10	0.90	8.55	8.55	120	250	250	62		78	-2	63
	17.5	0.10	0.90	9.98	9.95	120	250	250	62		77	-2	63
2	20	0.10	0.90	11.38	11.37	119	250	250	62		77	-2	62
	22.5	0.10	0.90	12.80	12.80	119	250	249	61		77	-2	61
	25	0.10	0.90	14.23	14.20	119	250	251	61		77	-2	61
	27.5	0.10	0.90	15.63	15.63	119	250	250	61		77	-2	61
	30	0.10	0.90	17.06	17.06	119	250	250	60		77	-2	58
	32.5	0.10	0.90	18.49	18.49	120	250	250	60		77	-2	58
	35	0.10	0.90	19.92	19.91	120	250	250	60		77	-2	58
	37.5	0.10	0.90	21.34	21.34	120	250	250	60		77	-2	58
3	40	0.10	0.90	22.77	22.78	120	250	252	60		77	-2	58
	42.5	0.10	0.90	24.21	24.18	121	250	249	60		77	-2	58
	45	0.10	0.90	25.61	25.61	120	250	249	60		77	-2	58
	47.5	0.10	0.90	27.04	27.02	120	250	249	59		77	-2	58
	50	0.10	0.90	28.45	28.43	120	250	249	59		77	-2	58
	52.5	0.10	0.90	29.86	29.85	120	250	251	59		78	-3	58
	55	0.10	0.90	31.27	31.25	120	250	250	59		78	-3	58
	57.5	0.10	0.90	32.67	32.65	120	250	250	59		78	-3	58
4	60	0.10	0.90	34.07	34.05	119	250	250	59		78	-3	58
	62.5	0.10	0.90	35.47	35.48	119	250	250	59		78	-3	58
	65	0.10	0.90	36.90	36.88	119	250	250	59		78	-3	58
	67.5	0.10	0.90	38.30	38.30	119	250	250	59		78	-3	58
	70	0.10	0.90	39.72	39.71	119	250	249	59		78	-3	58
	72.5	0.10	0.90	41.13	41.13	119	250	247	59		78	-3	58
	75	0.10	0.90	42.55	42.53	119	250	249	59		78	-3	58
	77.5	0.10	0.90	43.95	43.91	119	250	249	59		78	-3	58

Pretest Leak Check Rate (cfm) <0.02 at 10" vacuum ("Hg) Leak Vol Start 0.00 Leak Vol. End 0.07 —
Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End — Post-Pitot Check

— Isokinetic Sampling Train Data Sheet —

Operator Signature: [signature]

Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 1/2

Test No.: T3-SVOC
Operators: HE
Traverse Dir.: N→out

Start Time: —
Finish Time: —
Date: June 17, 2022

Stack D.: 24"
Pitot Check: —
Port length: 8"

Page: 2 of 4

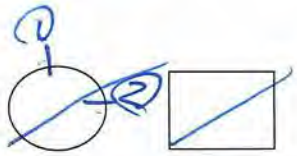
Dn: 0.32 Cp: 0.849 Bws: 5% dH@: 1.8074 Y: 0.9814 Pbar: 29.06 Pstatic: 0.02 CO2: 6.4 O2: 12.2 Pitot ID: Calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter Inlet (oF)	Meter Outlet (oF)	Vac. Press. ("Hg)	Comments
													Cardasel Temp
5	80	0.10	0.90	45.33	45.33	119	251	252	61		79	-3	59
	82.5	0.10	0.90	46.75	46.77	119	249	247	61		79	-3	59
	85	0.10	0.90	48.19	48.19	119	250	250	61		79	-3	59
	87.5	0.10	0.90	49.61	49.60	119	250	250	60		79	-3	59
	90	0.10	0.90	51.02	51.02	121	250	250	60		79	-3	59
	92.5	0.10	0.90	52.44	52.44	121	250	250	60		79	-3	59
	95	0.10	0.90	53.86	53.86	121	250	250	60		79	-3	59
	97.5	0.10	0.90	55.28	55.28	123	250	250	60		79	-3	59
6	100	0.40	3.65	56.70	56.68	124	250	250	60		79	-8	59
	102.5	0.40	3.65	59.53	59.49	124	250	250	60		80	-8	59
	105	0.40	3.65	62.34	62.30	125	250	250	60		80	-8	60
	107.5	0.40	3.65	65.15	65.10	127	250	250	60		80	-8	60
	110	0.40	3.65	67.94	67.91	127	250	250	60		80	-8	60
	112.5	0.40	3.65	70.75	70.73	124	250	250	60		80	-9	60
	115	0.40	3.65	73.57	73.53	124	250	250	60		80	-9	60
	117.5	0.40	3.65	76.37	76.35	124	250	250	60		80	-9	60
7	120	0.30	2.70	79.19	79.17	126	250	250	60		81	-7	60
	122.5	0.30	2.70	81.63	81.60	126	250	250	60		81	-7	60
	125	0.30	2.70	84.06	84.06	126	250	250	60		81	-7	60
	127.5	0.30	2.70	86.52	86.50	125	250	250	60		81	-7	60
	130	0.30	2.70	88.96	88.97	125	250	250	60		81	-7	60
	132.5	0.30	2.70	91.43	91.42	125	250	250	60		81	-7	61
	135	0.30	2.70	93.88	93.86	125	250	250	60		81	-7	61
	137.5	0.30	2.70	96.32	96.30	125	250	250	60		81	-7	61
8	140	0.30	2.70	98.76	98.73	125	250	250	60		81	-7	61
	142.5	0.30	2.70	101.19	101.19	125	250	250	60		82	-7	60
	145	0.30	2.70	103.65	103.65	125	250	250	60		82	-7	60
	147.5	0.30	2.70	106.11	106.11	127	250	250	60		82	-7	60
	150	0.30	2.70	108.57	108.56	127	250	250	60		82	-7	60
	152.5	0.30	2.70	111.02	111.02	123	250	250	60		82	-7	60
	155	0.30	2.70	113.48	113.48	123	250	250	61		82	-7	60
	157.5	0.30	2.70	115.94	115.95	120	250	250	61		82	-7	60 pause: 11:16
	160			118.41	118.41								

Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —
Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —
Post-Pitot Check —

— Isokinetic Sampling Train Data Sheet —

Operator Signature: [signature]



Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 2/2

Test No.: T3-SVOC
Operators: HE
Traverse Dir.: in → out

Start Time: —
Finish Time: —
Date: June 17, 2022

Stack D.: 24" ✓
Pitot Check: ____
Port length: 8"

Page: 3 of 4

Dn: 0.32 Cp: 0.849 Bws: 5% dH@: 1.874 Y: 0.98N Pbar: 29.06 Pstatic: - CO2: 6% O2: 12.2 Pitot ID: Calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter Inlet (oF)	Meter Outlet (oF)	Vac. Press. ("Hg)	Comments
											Avg		Condaser temp
1	0	0.20	1.80	118.00 -	118.46	126	250	250	62		80	-	60 resume: 11:31
	2.5	0.20	1.80	120.47	120.45	126	250	250	62		80	-6	60
	5	0.20	1.80	122.46	122.42	126	250	250	62		80	-6	60
	7.5	0.20	1.80	124.43	124.43	126	250	250	62		80	-6	60
	10	0.20	1.80	126.44	126.45	125	250	251	61		80	-6	60
	12.5	0.20	1.80	128.46	128.45	125	250	250	61		80	-6	60
	15	0.20	1.80	130.46	130.44	125	250	251	61		80	-6	60
	17.5	0.20	1.80	132.45	132.45	125	250	250	61		80	-6	60
2	20	0.15	1.40	134.46	134.47	125	250	250	61		80	-6	60
	22.5	0.15	1.40	136.21	136.24	125	250	250	61		80	-6	60
	25	0.15	1.40	137.98	137.98	125	250	250	61		80	-6	60
	27.5	0.15	1.40	139.72	139.70	125	250	250	61		80	-6	60
	30	0.15	1.40	141.44	141.42	125	250	250	60		80	-6	60
	32.5	0.15	1.40	143.16	143.19	125	250	249	60		80	-6	60
	35	0.15	1.40	144.93	144.93	125	250	249	60		80	-6	60
	37.5	0.15	1.40	146.67	146.68	125	250	252	60		81	-6	60
3	40	0.10	0.90	148.42	148.42	122	249	249	60		81	-4	60
	42.5	0.10	0.90	149.85	149.85	123	251	250	60		81	-4	60
	45	0.10	0.90	151.28	151.28	123	251	250	60		81	-4	60
	47.5	0.10	0.90	152.71	152.71	123	251	250	61		81	-4	60
	50	0.10	0.90	154.14	154.15	123	250	250	61		81	-4	60
	52.5	0.10	0.90	155.59	155.59	123	250	250	61		81	-4	60
	55	0.10	0.90	157.02	157.02	123	250	250	61		81	-4	60
	57.5	0.10	0.90	158.45	158.46	123	250	250	61		81	-4	60
4	60	0.15	1.40	159.89	159.89	123	250	250	61		81	-4	60
	62.5	0.15	1.40	161.64	161.60	123	250	250	61		81	-4	60
	65	0.15	1.40	163.35	163.36	123	250	250	61		81	-4	60
	67.5	0.15	1.40	165.06	165.08	123	250	250	61		81	-4	60
	70	0.15	1.40	166.83	166.88	123	250	250	61		81	-4	60 Actual: 166.83
	72.5	0.15	1.40	168.58	168.58	123	250	250	61		81	-4	60
	75	0.15	1.40	170.33	170.30	123	250	250	61		81	-4	60
	77.5	0.15	1.40	172.05	172.05	123	250	250	61		81	-4	60

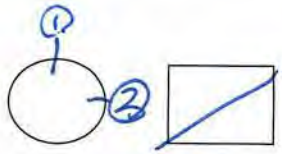
Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —

Posttest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —

Post-Pitot Check —

— Isokinetic Sampling Train Data Sheet —

Operator Signature: [signature]



Job Name: Stericycle
Job Number: 2202865
Client: Stericycle

Plant: Stericycle
Source: Incinerator
Traverse: 2/2

Test No.: T3-SVOC
Operators: HE
Traverse Dir.: N→out

Start Time: -
Finish Time: 14:11
Date: June 17, 2022

Stack D.: 24"
Pitot Check: ✓
Port length: 8"

Page: 4 of 4

Dn: 0.32 Cp: 0.849 Bws: 5% dH@: 1.8074 Y: 0.9814 Pbar: 29.06 Pstatic: 0.07 CO2: 6.4 O2: 12.2 Pitot ID: calgary 3' #2

Pt. (#)	Time (min)	Velocity Press. ("H20)	Orifice Press. ("H20)	Gas Meter Reading Desired (ft3)	Gas Meter Reading Actual (ft3)	Stack Temp. (oF)	Probe Temp. (oF)	Box Temp. (oF)	Imp. Temp. (oF)	Meter Inlet (oF)	Meter Outlet (oF)	Vac. Press. ("Hg)	Comments
													carbon tip.
5	80	0.25	2.30	173.80	173.80	125	250	250	63		80	-6	59
	82.5	0.25	2.30	176.06	176.06	125	250	250	63		80	-6	59
	85	0.25	2.30	178.32	178.30	125	250	250	63		80	-6	59
	87.5	0.25	2.30	180.56	180.58	125	250	250	63		80	-6	59
	90	0.25	2.30	182.84	182.82	125	250	250	63		80	-6	59
	92.5	0.25	2.30	185.08	185.05	125	250	250	63		80	-6	59
	95	0.25	2.30	187.31	187.31	125	250	250	61		80	-6	59
	97.5	0.25	2.30	189.57	189.57	125	250	250	61		80	-6	59
6	100	0.25	2.30	191.83	191.83	125	250	250	61		80	-6	59
	102.5	0.25	2.30	194.09	194.09	125	250	250	61		80	-6	59
	105	0.25	2.30	196.35	196.35	125	250	250	61		80	-6	59
	107.5	0.25	2.30	198.61	198.60	125	250	250	61		80	-6	59
	110	0.25	2.30	200.86	200.86	125	250	250	61		80	-6	59
	112.5	0.25	2.30	203.12	203.13	125	250	250	62		82	-6	59
	115	0.25	2.30	205.39	205.39	124	250	250	62		82	-6	59
	117.5	0.25	2.30	207.65	207.65	124	250	250	62		82	-6	59
7	120	0.10	0.90	209.91	209.91	123	250	250	62		82	-6	59
	122.5	0.10	0.90	211.34	211.37	123	250	251	62		82	-6	60
	125	0.10	0.90	212.80	212.78	123	250	248	62		82	-5	60
	127.5	0.10	0.90	214.21	214.21	123	250	249	62		82	-5	60
	130	0.10	0.90	215.64	215.64	123	250	250	62		82	-5	60
	132.5	0.10	0.90	217.07	217.05	124	250	251	62		82	-5	60
	135	0.10	0.90	218.48	218.46	124	250	249	62		82	-4	60
	137.5	0.10	0.90	219.89	219.88	124	250	250	62		82	-4	60
8	140	0.10	0.90	221.31	221.31	124	250	250	62		82	-4	60
	142.5	0.10	0.90	222.74	222.74	124	250	250	62		82	-4	60
	145	0.10	0.90	224.17	224.18	124	250	250	62		82	-4	60
	147.5	0.10	0.90	225.61	225.62	122	250	250	62		82	-4	60
	150	0.10	0.90	227.05	227.05	123	250	249	62		82	-4	60
	152.5	0.10	0.90	228.48	228.46	123	250	249	62		82	-4	60
	155	0.10	0.90	229.89	229.87	123	250	249	62		82	-4	60
	157.5	0.10	0.90	231.30	231.30	123	250	249	62		82	-4	60
	160			232.73	232.73								

Pretest Leak Check Rate (cfm) — at — vacuum ("Hg) Leak Vol Start — Leak Vol. End —

Posttest Leak Check Rate (cfm) 0.02 at -12 vacuum ("Hg) Leak Vol Start 232.74 Leak Vol. End 232.83 Post-Pitot Check ✓

M26 Sampling

Project #: 2202865	Client: Stericycle	Console ID : VOST B
Date: 06/15-17/2022	Test: 1→3	Console Y : 1.004
Sample Location: Incinerator	Filter I.D.: N/A	Operator : MOS

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp (°C) Inlet	Meter Temp (°C) Outlet	Vacuum (in Hg)	Filter Box Temp (°F)	Probe Temp (°F)	Condensor Temp (°C)	Sampling Rate (L/min)
Test 1 Start Time = 9:20 AM								Leak Check:	✓
0	2.0	0.00	25	25	-2	N/A	N/A	7	-
5	2.0	5.31	25	25	-2	N/A	N/A	7	1.1
10	2.0	9.89	25	25	-2	N/A	N/A	7	0.9
15	2.0	14.92	25	25	-2	N/A	N/A	7	1.0
20	2.0	20.11	25	25	-2	N/A	N/A	7	1.0
25	2.0	25.05	25	25	-2	N/A	N/A	7	1.0
30	2.0	30.06	25	25	-2	N/A	N/A	7	1.0
35	2.0	35.11	25	25	-2	N/A	N/A	7	1.0
40	2.0	40.13	25	25	-2	N/A	N/A	7	1.0
45	2.0	45.13	25	25	-2	N/A	N/A	7	1.0
50	2.0	50.09	25	25	-2	N/A	N/A	7	1.0
55	2.0	55.04	25	25	-2	N/A	N/A	7	1.0
60	2.0	60.05	25	25	-2	N/A	N/A	7	1.0
Test 1 End Time = 10:20 AM								Leak Check:	✓
Test 2 Start Time = 9:00 AM								Leak Check:	✓
0	2.0	0.00	30	30	-1	N/A	N/A	9	-
5	2.0	5.09	30	30	-1	N/A	N/A	9	1.0
10	2.0	10.11	30	30	-1	N/A	N/A	9	1.0
15	2.0	15.20	30	30	-1	N/A	N/A	9	1.0
20	2.0	19.99	30	30	-1	N/A	N/A	9	1.0
25	2.0	24.89	30	30	-1	N/A	N/A	9	1.0
30	2.0	30.08	30	30	-1	N/A	N/A	9	1.0
35	2.0	35.11	30	30	-1	N/A	N/A	9	1.0
40	2.0	40.12	30	30	-2	N/A	N/A	9	1.0
45	2.0	45.20	30	30	-2	N/A	N/A	9	1.0
50	2.0	50.13	30	30	-2	N/A	N/A	9	1.0
55	2.0	55.13	30	30	-2	N/A	N/A	9	1.0
60	2.0	60.13	30	30	-2	N/A	N/A	9	1.0
Test 2 End Time = 10:00 AM								Leak Check:	✓
Test 3 Start Time = 8:40 AM								Leak Check:	✓
0	2.5	0.00	25	25	-3	N/A	N/A	9	-
5	2.5	5.13	25	25	-3	N/A	N/A	9	1.0
10	2.5	10.18	25	25	-3	N/A	N/A	9	1.0
15	2.5	15.19	25	25	-3	N/A	N/A	9	1.0
20	2.5	20.04	25	25	-3	N/A	N/A	9	1.0
25	2.5	24.98	25	25	-3	N/A	N/A	9	1.0
30	2.5	30.09	25	25	-3	N/A	N/A	9	1.0
35	2.5	35.00	25	25	-3	N/A	N/A	9	1.0
40	2.5	40.08	25	25	-3	N/A	N/A	10	1.0
45	2.5	44.91	25	25	-3	N/A	N/A	10	1.0
50	2.5	49.93	25	25	-3	N/A	N/A	10	1.0
55	2.5	55.18	25	25	-3	N/A	N/A	10	1.1
60	2.5	60.096	25	25	-3	N/A	N/A	10	1.0
Test 3 End Time = 9:40 AM								Leak Check:	✓

VOST Sampling

Project #: 2202865	Client: Stericycle	Console ID : VOST B
Date: 06/15-17/2022	Test: T1 → T3	Console Y : 1.004
Sample Location: Incinerator	Filter I.D.: N/A	Operator : MOS/OO

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp °C Inlet	Meter Temp °C Outlet	Vacuum (in Hg)	Filter Box Temp (°F)	Probe Temp (°F)	Condensor Temp (°F)	Sampling Rate (L/min)
Test 1 Start Time = 10:30 AM								Leak Check: ✓	
0	0.60	Ø	25	25	—			43	0.33
5		1.66	25	25	-3			43	
10		3.30	25	25	-2			43	
15		5.00	25	25	-3			44	
20		6.54	25	25	-2			44	
25		8.19	25	25	-3			44	
30		10.02	25	25	-2			44	
35		11.58	25	25	-3			43	
40		13.23	25	25	-2			43	
45		14.85	25	25	-3			43	
50		16.52	25	25	-3			43	
55	↓	18.19	25	25	-2			43	↓
60		19.88							
Test 1 End Time = 11:30								Leak Check: ✓	
Test 2 Start Time = 10:05 AM								Leak Check: ✓	
0	0.60	Ø	30	30	-3			55	-
5		1.56			-3			55	0.317
10		3.24			-3			55	0.336
15		4.99			-3			55	0.350
20		6.50			-3			55	0.302
25		8.23			-3			55	0.346
30		10.05			-3			55	0.364
35		11.56			-3			55	0.302
40		13.25			-3			55	0.338
45		14.90			-3			55	0.330
50		16.50			-3			55	0.320
55	↓	18.18			-3			55	0.336
60		19.62			-3				0.288
Test 2 End Time = 11:05 AM								Leak Check: ✓	
Test 3 Start Time = 9:47 AM								Leak Check: ✓	
0	0.60	Ø	25	25	-2			54	0.318
5		1.59	25	25	-2			54	0.326
10		3.22	25	25	-2			54	0.364
15		5.04	25	25	-2			54	0.302
20		6.55	25	25	-2			54	0.348
25		8.29	25	25	-2			55	0.342
30		10.00	25	25	-2			55	0.320
35		11.60	25	25	-2			55	0.346
40		13.18	25	25	-2			55	0.344
45		14.90	25	25	-2			55	0.340
50		16.60	25	25	-2			57	0.322
55	↓	18.21	25	25	-2			57	0.329
60		19.75	25	25	-2			57	
Test 3 End Time = 10:49 AM								Leak Check: ✓	

" - "

CARB430 Sampling

Project #: 2202865	Client: Stericycle	Console ID : VOST B
Date: June 15, 2022	Test: 1	Console Y : 1.004
Sample Location: Incinerator	Filter I.D.: N/A	Operator : MOS

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp (°C) Inlet	Meter Temp (°C) Outlet	Vacuum (in Hg)	Filter Box Temp (°F)	Probe Temp (°F)	Condensor Temp (°F)	Sampling Rate (L/min)
Test Start Time = 11:43								Leak Check: ✓	
0	0.70	0.0	25	25	X			55	0.33
5		1.66	25	25	X			55	0.32
10		3.25	25	25	X			55	0.35
15		5.00	25	25	X			55	0.33
20		6.67	25	25	X			55	0.32
25		8.25	25	25	X			55	0.33
30		9.92	25	25	X			55	0.33
35		11.56	25	25	X			55	0.34
40		13.26	25	25	X			55	0.33
45		14.91	25	25	X			55	0.32
50		16.51	25	25	X			55	0.33
55		18.17	26	26	X			56	0.33
60		19.82	26	26	X			56	0.34
65		21.50	26	26	X			56	0.33
70		23.15	26	26	X			56	0.33
75		24.80	26	26	X			56	0.32
80		26.41	26	26	X			56	0.33
85		28.05	26	26	X			56	0.33
90		29.70	26	26	X			56	0.33
95		31.35	26	26	X			56	0.35
100		33.12	26	26	X			56	0.32
105		34.72	27	27	X			57	0.33
110		36.37	27	27	X			57	0.37
115		37.99	27	27	X			57	0.41
120	↓	40.04	27	27	X			57	
Test End Time = 13:43								Leak Check: ✓	

" - "

All shift 1 down

CARB430 Sampling

Project #: 2202865	Client: Stericycle	Console ID : VOST B
Date: June 16, 2022	Test: 2	Console Y : 1.004
Sample Location: Incinerator	Filter I.D.: N/A	Operator : MOS

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp (°C) Inlet	Meter Temp (°C) Outlet	Vacuum (in Hg)	Filter Box Temp (°F)	Probe Temp (°F)	Condensor Temp (°F)	Sampling Rate (L/min)
Test Start Time = 14:06								Leak Check: ✓	
0	0.70	0.00	30	30	X			60	—
5		1.59	30	30	X			60	0.37
10		3.25	30	30	X			60	0.33
15		4.86	30	30	X			60	0.35
20		6.67	30	30	X			60	0.34
25		8.21	30	30	X			60	0.31
30		9.85	30	30	X			60	0.33
35		11.55	30	30	X			60	0.34
40		13.21	30	30	X			60	0.33
45		14.82	30	30	X			60	0.32
50		16.40	30	30	X			60	0.32
55		18.11	30	30	X			60	0.31
60		19.79	30	30	X			60	0.34
65		21.46	29	29	X			61	0.33
70		23.15	29	29	X			61	0.31
75		24.78	29	29	X			61	0.33
80		26.43	29	29	X			61	0.33
85		28.03	29	29	X			61	0.32
90		29.77	29	29	X			61	0.35
95		31.35	29	29	X			61	0.32
100		33.10	29	29	X			61	0.35
105		34.65	29	29	X			61	0.31
110		36.32	30	30	X			62	0.33
115		37.95	30	30	X			62	0.33
120		40.57	30	30	X			62	0.32
Test End Time = 16:06								Leak Check: ✓	

CARB430 Sampling

Project #: 2202865	Client: Stericycle	Console ID : Vost B
Date: June 17, 2022	Test: 3	Console Y : 1.0004
Sample Location: Incinerator	Filter I.D.: N/A	Operator : MOS

Time (min)	Orifice Press ("H_2O)	Meter Volume (L)	Meter Temp (°C) Inlet	Meter Temp (°C) Outlet	Vacuum (in Hg)	Filter Box Temp (°F)	Probe Temp (°F)	Condensor Temp (°F)	Sampling Rate (L/min)
Test Start Time = 11:00								Leak Check: ✓	
0	0.70	0.0	25	25	X			58	-
5		1.59	25	25	X			58	0.32
10		3.35	25	25	X			58	0.35
15		5.00	25	25	X			58	0.33
20		6.67	25	25	X			59	0.33
25		8.33	25	25	X			58	0.33
30		9.95	25	25	X			58	0.32
35		11.56	25	25	X			58	0.32
40		13.25	25	25	X			58	0.34
45		14.89	25	25	X			58	0.33
50		16.59	25	25	X			58	0.34
55		18.26	25	25	X			59	0.33
60		19.85	25	25	X			59	0.32
65		21.46	25	25	X			59	0.32
70		23.11	25	25	X			59	0.33
75		24.75	26	26	X			59	0.33
80		26.45	26	26	X			59	0.34
85		28.06	26	26	X			59	0.32
90		29.76	26	26	X			59	0.34
95		31.40	26	26	X			59	0.33
100		33.08	26	26	X			59	0.34
105		34.66	26	26	X			60	0.32
110		36.30	27	27	X			60	0.33
115		37.99	27	27	X			60	0.34
120	↓	40.03	27	27	X			60	0.41
Test End Time = 13:00								Leak Check: ✓	

CONTINUOUS EMISSION MONITORING
SYSTEM CALIBRATION AND DRIFT CALIBRATION

RATA

Client:	Stonegate			Date:	6/15/2022	
Project Number:	2202805			Start Time:	8:11am	
Sample Location:	Incinerator			Finish Time:	16:45	
	15 2 O_2 7.52	CO_2	20 CO 10	240 NO_x 105	SO_2	THC
Range						
TIME						
Direct Zero	0.00		0.32	0.03		
Mid. Span	7.53		10.18	106.18		
High Span	14.97		20.07	212.43		
Pre T1 TIME	8:10am					
System Zero	0.04		0.53	0.03		
Span	7.49		10.27	105.62		
T1 TIME	9:15am - 9:44am					
Zero	0.09		0.27	0.09		
Span	7.48		10.28	105.47		
T2 TIME	9:49am - 10:18am					
Zero	0.08		0.24	0.08		
Span	7.47		10.21	105.32		
T3 TIME	10:23am - 10:52am					
Zero	0.20		0.18	0.29		
Span	7.47		10.24	104.17		
T4 TIME	11:05am - 11:33					
Zero	0.20		0.27	0.21		
Span	7.49		10.18	104.03		
T5 TIME	11:37 - 12:06					
Zero	0.19		0.21	0.27		
Span	7.52		10.13	105.18		
T6 TIME	12:10 - 12:39					
Zero	0.15		0.20	0.21		
Span	7.53		10.14	106.10		
T7 TIME	12:43 - 13:13					
Zero	0.11		0.21	0.23		
Span	7.53		10.17	106.79		
T8 TIME	13:24 - 13:50					
Zero	0.09		0.20	0.21		
Span	7.48		10.11	106.58		
T9 TIME	14:12 - 14:40					
Zero	0.12		0.18	-0.51		
Span	7.47		10.18	103.44		
T10 TIME	14:50 - 15:19					
Zero	0.11		0.17	-0.38		
Span	7.49		10.21	103.72		
T11 TIME	15:24 - 15:53					
Zero	0.12		0.19	-0.28		
Span	7.48		10.17	104.19		
T12 TIME	15:58 - 16:25					
Zero	0.11		0.2	-0.29		
Span	7.49		10.18	104.29		

Leak Check ~~2.50~~ ✓
Line Temp 250°F
Filter Temp ~~Line~~ 250°F
Chiller Temp <4°

Drift Criterion: <3% of Span

Bias Criterion: <5% of Span

Converter Check	NO_2 Value	NO reading	NO_2 Reading	NO_x reading	> 90%

Response Time (sec)	30

Notes: Side-Side Analyzer NO_x/SO_2 Combo

Line Temp 250°F
Filter Temp 250°F
Chiller Temp <4°

CONTINUOUS EMISSION MONITORING
SYSTEM CALIBRATION AND DRIFT CALIBRATION

Client: Stericycle	Date: 06/16/2022
Project Number: 2202865	Start Time: 8:34
Sample Location: Incinerator	Finish Time: 16:30

	O_2	CO_2	CO	NO_x	SO_2	THC
	15	17.97	20	210	212.32	50
	7.5	8.98	10	105	104.16	25 10
Range	25	30	60	1000	1000	100
TIME 8:34						
Direct Zero	0.08	0.04	0.12	0.29	0.97	0.30
Mid. Span	7.43	8.85	9.95	104.37	106.01	9.73
High Span	14.85	18.12	19.88	211.20	210.98	24.76
TIME						
System Zero	0.07	0.00	0.29	0.40	0.95	0.31
Span	15.14	17.90	20.09	104.95	106.09	25.13
T1 TIME 9:29 – 11:35						
Zero	0.11	0.00	0.46	0.38	1.00	0.40
Span	14.96	18.04	19.79	104.83	106.33	24.99
T2 TIME 14:10 – 16:09						
Zero	0.19	0.06	0.33	0.30	1.02	0.36
Span	14.79	18.10	19.85	104.72	104.42	24.81
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						

Leak Check ✓
Line Temp 250
Filter Temp 200
Chiller Temp <2°C

Drift Criterion: <3% of Span

Bias Criterion: <5% of Span

Converter Check	NO_2 Value	NO reading	NO_2 Reading	NO_x reading	>90%

Response Time (sec): 30

Notes: Ametek NO_x/SO_2 combo
Sick low CO

Line Temp 250
Filter Temp 250
Chiller Temp <4°C

CONTINUOUS EMISSION MONITORING
SYSTEM CALIBRATION AND DRIFT CALIBRATION

Client:	Stericycle			Date:	June 17	
Project Number:	220286S			Start Time:	8:30	
Sample Location:	Incinerator			Finish Time:	16:45	
	15.0	17.97	20	210	212.32	50
	O_2	CO_2	CO	NO_x	SO_2	THC
	7.5	8.98	10	105	106.16	25 10
Range	25	30	60	200	200	100
TIME 8:33						
Direct Zero	0.00	0.00	0.09	-0.28	-1.03	0.28
Mid. Span	7.64	8.84	9.97	104.21	105.24	9.56
High Span	15.17	17.87	20.05	208.69	212.2	25.20
TIME						49.81
System Zero	0.17	0.03	0.21	-0.32	-0.10	0.17
Span	15.07	17.23	20.39	104.27	104.89	~~25.37~~ 25.13
T3, TIME 9:05 - 10:30						
Zero	0.09	0.03	0.18	-0.49	-0.04	0.11
Span	15.02	17.49	19.94	104.56	104.73	~~25.24~~ 25.24
TIME						
Zero						
Span						
TIME						10:54am
Zero	0.09					0.04
Span	15.02					25.08
T1 TIME 11:50 (THC) - 14:50						
Zero	0.13					0.07
Span	15.14					25.11
T1 TIME 15:08 (O2 span) - 16:23						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						
TIME						
Zero						
Span						

Secondary Oxidizer

Leak Check ✓
Line Temp 220
Filter Temp 250
Chiller Temp < 2°C

Drift Criterion: <3% of Span			Bias Criterion: <5% of Span		
Converter Check	NO_2 Value	NO reading	NO_2 Reading	NO_x reading	> 90%

Response Time (sec)	305

Notes: Ametek NOx/SO2 Combo
Sees low CO

Line Temp 250
Filter Temp 250
Chiller Temp < 2°C

APPENDIX J

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#:	Method Blank
Field ID#:	Method Blank

Number of TICs found:_____0_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		1,3-Butadiene < 0.05ug			
2.		Cumene < 0.05ug			
3.		1,3,5-Trimethylbenzene < 0.05 ug			
4.		Trichlorotrifluoroethane < 0.05ug			

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#:	SYG207
Field ID#:	M0030-BLANK-#6A/B

Number of TICs found:_____0_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		1,3-Butadiene < 0.05ug			
2.		Cumene < 0.05ug			
3.		1,3,5-Trimethylbenzene < 0.05 ug			
4.		Trichlorotrifluoroethane < 0.05ug			

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#:	SYG208
Field ID#:	M0030-T1-#3A/B

Number of TICs found:_____1_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		1,3-Butadiene < 0.05ug			
2.		Cumene < 0.05ug			
3.		1,3,5-Trimethylbenzene < 0.05 ug			
4.		Trichlorotrifluoroethane < 0.05ug			

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#:	SYG209
Field ID#:	M0030-T2-#1A/B

Number of TICs found:_____1_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		1,3-Butadiene < 0.05ug			
2.		Cumene < 0.05ug			
3.		1,3,5-Trimethylbenzene < 0.05 ug			
4.		Trichlorotrifluoroethane < 0.05ug			

Volatile Organics Analysis Data Sheets
Tentatively Identified Compounds

SAMPLE#:	SYG210
Field ID#:	M0030-T3-#2A/B

Number of TICs found:_____1_____

Concentration Units
ug

	CAS #	Compound Name	RT	Est. Conc.	Match %
1.		1,3-Butadiene < 0.05ug			
2.		Cumene < 0.05ug			
3.		1,3,5-Trimethylbenzene < 0.05 ug			
4.		Trichlorotrifluoroethane < 0.05ug			

Your P.O. #: 2202865
Your Project #: 2202865
Site Location: STERICYCLE
Your C.O.C. #: 34346

Attention: Kirk Easto

RWDI Air Inc
600 Southgate Drive
Guelph, ON
CANADA N1G 4P6

Report Date: 2022/07/06
Report #: R7199081
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2G9381
Received: 2022/06/17, 17:55

Sample Matrix: Stack Sampling Train
Samples Received: 17

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Aldehydes + Ketones in Air	4	2022/06/23	2022/06/24	BRL SOP-00229	CARB 430 / Ashland
Halogens in Midget NaOH Imp.	4	2022/06/27	2022/06/27	BRL SOP-00108	EPA 26 m
Mercury 3C in HCl Rinse	4	2022/06/24	2022/06/28	BRL SOP-00104	EPA M29/M0060 m
Mercury 2B in HNO3/H2O2 Imp.	4	2022/06/22	2022/06/23	BRL SOP-00104	EPA M29/M0060 m
Mercury 3A in HNO3 Rinse	4	2022/06/22	2022/06/23	BRL SOP-00104	EPA M29/M0060 m
Mercury 3B in KMnO4/H2SO4 Imp.	4	2022/06/22	2002/06/23	BRL SOP-00104	EPA M29/M0060 m
Mercury 1B in Filter (Nitric Acid) (M29)	4	2022/06/29	2022/07/04	BRL SOP-00104	EPA Method 29 m
Mercury 1B in Filter (HF) (M29)	4	2022/06/30	2022/07/04	BRL SOP-00104	EPA Method 29 m
Hydrogen Halides -Midget H2SO4 Imp	5	2022/06/22	2022/06/22	BRL SOP-00108	EPA 26 m
Metals B.H. in H2O2/HNO3 Imp.(6010C)	4	2022/06/27	2022/06/29	CAM SOP-00408 / BRL SOP-00102	EPA 6010D/M29 m
Metals F.H. - Nitric Acid Extractable	4	2022/06/29	2022/07/06	CAM SOP-00408 / BRL SOP-00102	EPA 6010D/M29 m
Metals F.H. - HF Total	4	2022/06/30	2022/07/06	CAM SOP-00408 / BRL SOP-00102	EPA 6010D/M29 m
Metals B.H. in H2O2/HNO3 Imp.(6020B m)	4	2022/06/27	2022/06/29	BRL SOP-00103 / BRL SOP-00102	EPA M29/CARB 436 m
Metals on Filter - HNO3 Extractable	4	2022/06/29	2022/06/30	BRL SOP-00103 / BRL SOP-00102	EPA 6020B/M29 m
Metals on Filter - HF Total	4	2022/06/30	2022/06/30	BRL SOP-00103 / BRL SOP-00102	EPA 6020B/M29 m
Ammonium in Midget H2SO4 Imp(CTM-027mod)	5	2022/06/23	2022/06/23	BRL SOP-00107	EPA CTM-027 m
Particulates/Acetone Rinse (M5/315/M201)	4	2022/06/27	2022/06/24	BRL SOP-00109	EPA 5/315 m
Particulates/Filter (M5/315/NJATM1/M201)	4	N/A	2022/06/23	BRL SOP-00109	EPA 5/315/NJATM1 m
Final Volume of Acetone Probe Rinse	4	N/A	2022/06/22	BRL SOP-00109	
Volume of Sulfuric Acid Impinger	5	N/A	2022/06/22		
Volume of Sodium Hydroxide Impinger	4	N/A	2022/06/27		

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, MELCC, EPA, APHA.

Your P.O. #: 2202865
Your Project #: 2202865
Site Location: STERICYCLE
Your C.O.C. #: 34346

Attention: Kirk Easto

RWDI Air Inc
600 Southgate Drive
Guelph, ON
CANADA N1G 4P6

Report Date: 2022/07/06
Report #: R7199081
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2G9381
Received: 2022/06/17, 17:55

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.

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.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769
==========
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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865
Sampler Initials: JDF

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG273		SYH388		SYG274		
Sampling Date		2022/06/17		2022/06/17		2022/06/17		
COC Number		34346		34346		34346		
	UNITS	**M26 - H2SO4 BLANK**	**RDL**	**M26- H20 BLANK**	**RDL**	**M26 - T1 - H2SO4**	**RDL**	**QC Batch**
Sulfuric Acid Volume	ml	120	1	186	1	126	1	8067799
Ammonium (NH4)	ug	ND	6.0	ND	9.3	9.5	6.3	8070468
Hydrochloric Acid	ug	41	30	33	30	270	30	8067823
Hydrofluoric Acid	ug	ND	30	ND	30	ND	30	8067823

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

Bureau Veritas ID		SYG275		SYG276		
Sampling Date		2022/06/17		2022/06/17		
COC Number		34346		34346		
	UNITS	**M26 - T2 - H2SO4**	**RDL**	**M26 - T3 - H2SO4**	**RDL**	**QC Batch**
Sulfuric Acid Volume	ml	139	1	118	1	8067799
Ammonium (NH4)	ug	44	7.0	42	5.9	8070468
Hydrochloric Acid	ug	240	30	360	30	8067823
Hydrofluoric Acid	ug	ND	30	79	30	8067823

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

Bureau Veritas ID		SYG277		SYG278	SYG279		
Sampling Date		2022/06/17		2022/06/17	2022/06/17		
COC Number		34346		34346	34346		
	UNITS	**M26 - NAOH BLANK**	**RDL**	**M26 - T1 - NAOH**	**M26 - T2 - NAOH**	**RDL**	**QC Batch**
Sodium Hydroxide Volume	ml	118	1	103	110	1	8076962
Chlorine	ug	ND	180	ND	ND	360	8076971
Fluorine	ug	ND	120	ND	ND	240	8076971

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865
Sampler Initials: JDF

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG280			SYG281	SYG283		
Sampling Date		2022/06/17			2022/06/17	2022/06/17		
COC Number		34346			34346	34346		
	UNITS	**M26 - T3 - NAOH**	**RDL**	**QC Batch**	**M5/M29 - BLANK**	**M5/M29 - T1**	**RDL**	**QC Batch**
Acetone Rinse Particulate Weight in Acetone Rinse	mg				0.8	5.4	0.5	8077489
Front Half Particulate Weight on Filter	mg				0.80	10.9	0.30	8077483
Acetone Rinse Volume	ml				74	160	1	8077498
Sodium Hydroxide Volume	ml	104	1	8076962				
Chlorine	ug	ND	360	8076971				
Fluorine	ug	ND	240	8076971				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

Bureau Veritas ID		SYG284	SYG285		
Sampling Date		2022/06/17	2022/06/17		
COC Number		34346	34346		
	UNITS	**M5/M29 - T2**	**M5/M29 - T3**	**RDL**	**QC Batch**
Acetone Rinse Particulate Weight in Acetone Rinse	mg	5.5	8.0	0.5	8077489
Front Half Particulate Weight on Filter	mg	20.8	19.8	0.30	8077483
Acetone Rinse Volume	ml	140	120	1	8077498

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865
Sampler Initials: JDF

MERCURY BY COLD VAPOUR AA (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG281		SYG283		SYG284		SYG285		
Sampling Date		2022/06/17		2022/06/17		2022/06/17		2022/06/17		
COC Number		34346		34346		34346		34346		
	UNITS	**M5/M29 - BLANK**	**RDL**	**M5/M29 - T1**	**RDL**	**M5/M29 - T2**	**RDL**	**M5/M29 - T3**	**RDL**	**QC Batch**
1B (HF) Mercury (Hg)	ug	ND	0.03	0.09	0.03	0.12	0.03	0.25	0.03	8084197
1B (Nitric) Mercury (Hg)	ug	ND	0.015	5.55	0.15	13.7	0.3	23.9	0.3	8082544
2B Mercury (Hg)	ug	ND	0.15	23.8	0.22	35.0	0.32	14.2	0.28	8067839
3A Mercury (Hg)	ug	ND	0.005	0.189	0.0051	0.172	0.0045	0.0818	0.0053	8067831
3B Mercury (Hg)	ug	ND	0.02	0.059	0.028	0.59	0.03	0.527	0.028	8067614
3C Mercury (Hg)	ug	ND	0.13	10.6	0.13	14.8	0.13	5.18	0.13	8073000

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865
Sampler Initials: JDF

ELEMENTS BY ICP-AES (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG281	SYG283	SYG284	SYG285		
Sampling Date		2022/06/17	2022/06/17	2022/06/17	2022/06/17		
COC Number		34346	34346	34346	34346		
	UNITS	**M5/M29 - BLANK**	**M5/M29 - T1**	**M5/M29 - T2**	**M5/M29 - T3**	**RDL**	**QC Batch**
Front Half (HF) Aluminum (Al)	ug	119	175	141	158	30	8084198
Front Half (Nitric) Aluminum (Al)	ug	ND	36	73	71	15	8082548
Front Half (HF) Calcium (Ca)	ug	ND	ND	ND	ND	120	8084198
Front Half (Nitric) Calcium (Ca)	ug	67	842	335	480	30	8082548
Front Half (HF) Iron (Fe)	ug	22	62	41	69	12	8084198
Front Half (Nitric) Iron (Fe)	ug	7.4	84.5	110	172	6.0	8082548
Front Half (HF) Lithium (Li)	ug	ND	ND	ND	ND	6.0	8084198
Front Half (Nitric) Lithium (Li)	ug	ND	4.6	5.4	5.2	3.0	8082548
Front Half (HF) Magnesium (Mg)	ug	ND	ND	ND	ND	40	8084198
Front Half (Nitric) Magnesium (Mg)	ug	ND	61	43	67	20	8082548
Front Half (Nitric) Silicon (Si)	ug	67	212	169	295	30	8082548
Front Half (HF) Sodium (Na)	ug	ND	96	66	74	60	8084198
Front Half (Nitric) Sodium (Na)	ug	315	3860	4740	4650	30	8082548
Back Half Aluminum (Al)	ug	8.0	43.6	39.0	18.6	7.5	8077484
Back Half Calcium (Ca)	ug	82	1350	591	377	30	8077484
Back Half Iron (Fe)	ug	12.9	36.5	51.6	80.6	3.0	8077484
Back Half Lithium (Li)	ug	ND	ND	ND	ND	3.0	8077484
Back Half Magnesium (Mg)	ug	9.3	53.4	49.1	37.9	7.5	8077484
Back Half Silicon (Si)	ug	81	115	156	105	15	8077484
Back Half Sodium (Na)	ug	644	1070	1520	910	15	8077484

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Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
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Sampler Initials: JDF

ELEMENTS BY ICP/MS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG281	SYG283	SYG284	SYG285		
Sampling Date		2022/06/17	2022/06/17	2022/06/17	2022/06/17		
COC Number		34346	34346	34346	34346		
	UNITS	**M5/M29 - BLANK**	**M5/M29 - T1**	**M5/M29 - T2**	**M5/M29 - T3**	**RDL**	**QC Batch**
Front Half (HF) Antimony (Sb)	ug	ND	ND	ND	ND	6.0	8084207
Front Half (Nitric) Antimony (Sb)	ug	ND	ND	4.0	3.9	3.0	8082554
Front Half (HF) Arsenic (As)	ug	ND	ND	ND	ND	1.6	8084207
Front Half (Nitric) Arsenic (As)	ug	ND	ND	ND	ND	0.80	8082554
Front Half (HF) Barium (Ba)	ug	3.7	6.8	4.4	4.3	2.4	8084207
Front Half (Nitric) Barium (Ba)	ug	5.8	12.0	13.7	14.6	1.2	8082554
Front Half (HF) Beryllium (Be)	ug	ND	ND	ND	ND	0.36	8084207
Front Half (Nitric) Beryllium (Be)	ug	ND	ND	ND	ND	0.18	8082554
Front Half (HF) Boron (B)	ug	ND	ND	ND	ND	60	8084207
Front Half (Nitric) Boron (B)	ug	ND	ND	ND	ND	30	8082554
Front Half (HF) Cadmium (Cd)	ug	ND	ND	ND	ND	0.36	8084207
Front Half (Nitric) Cadmium (Cd)	ug	ND	0.64	4.31	0.37	0.18	8082554
Front Half (HF) Chromium (Cr)	ug	ND	ND	ND	ND	6.0	8084207
Front Half (Nitric) Chromium (Cr)	ug	ND	7.9	8.4	11.7	3.0	8082554
Front Half (HF) Cobalt (Co)	ug	ND	ND	ND	ND	0.36	8084207
Front Half (Nitric) Cobalt (Co)	ug	ND	ND	0.21	0.26	0.18	8082554
Front Half (HF) Copper (Cu)	ug	ND	ND	ND	ND	3.6	8084207
Front Half (Nitric) Copper (Cu)	ug	ND	25.1	26.9	23.9	1.8	8082554
Front Half (HF) Lead (Pb)	ug	ND	ND	ND	ND	1.2	8084207
Front Half (Nitric) Lead (Pb)	ug	ND	6.48	21.2	17.7	0.60	8082554
Front Half (HF) Manganese (Mn)	ug	ND	ND	ND	ND	2.4	8084207
Front Half (Nitric) Manganese (Mn)	ug	ND	4.2	3.7	4.1	1.2	8082554
Front Half (HF) Molybdenum (Mo)	ug	23.1	24.5	24.1	25.5	2.0	8084207
Front Half (Nitric) Molybdenum (Mo)	ug	ND	1.2	1.2	1.7	1.0	8082554
Front Half (HF) Nickel (Ni)	ug	2.5	3.2	2.9	2.9	2.0	8084207
Front Half (Nitric) Nickel (Ni)	ug	ND	3.4	4.9	6.0	1.0	8082554
Front Half (HF) Phosphorus (P)	ug	ND	ND	ND	ND	180	8084207
Front Half (Nitric) Phosphorus (P)	ug	ND	ND	ND	ND	90	8082554
Front Half (HF) Selenium (Se)	ug	ND	ND	ND	ND	4.0	8084207
Front Half (Nitric) Selenium (Se)	ug	ND	ND	ND	ND	2.0	8082554
Front Half (HF) Silver (Ag)	ug	ND	1.32	6.26	0.83	0.48	8084207
Front Half (Nitric) Silver (Ag)	ug	ND	4.28	4.90	4.33	0.24	8082554
Front Half (HF) Strontium (Sr)	ug	ND	ND	ND	ND	1.8	8084207

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RWDI Air Inc
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Sampler Initials: JDF

ELEMENTS BY ICP/MS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG281	SYG283	SYG284	SYG285		
Sampling Date		2022/06/17	2022/06/17	2022/06/17	2022/06/17		
COC Number		34346	34346	34346	34346		
	UNITS	**M5/M29 - BLANK**	**M5/M29 - T1**	**M5/M29 - T2**	**M5/M29 - T3**	**RDL**	**QC Batch**
Front Half (Nitric) Strontium (Sr)	ug	ND	2.50	1.90	2.44	0.90	8082554
Front Half (HF) Tin (Sn)	ug	ND	4.4	7.3	3.9	2.4	8084207
Front Half (Nitric) Tin (Sn)	ug	ND	16.0	16.6	19.0	1.2	8082554
Front Half (HF) Titanium (Ti)	ug	32.2	39.3	31.0	33.4	6.0	8084207
Front Half (Nitric) Titanium (Ti)	ug	ND	ND	ND	ND	3.0	8082554
Front Half (HF) Vanadium (V)	ug	ND	ND	ND	ND	1.2	8084207
Front Half (Nitric) Vanadium (V)	ug	ND	ND	ND	ND	0.60	8082554
Front Half (HF) Zinc (Zn)	ug	ND	26	ND	ND	20	8084207
Front Half (Nitric) Zinc (Zn)	ug	ND	1020	1040	775	10	8082554
Back Half Antimony (Sb)	ug	ND	ND	ND	ND	0.40	8077477
Back Half Arsenic (As)	ug	ND	ND	ND	ND	0.40	8077477
Back Half Barium (Ba)	ug	5.23	10.5	13.2	10.4	0.60	8077477
Back Half Beryllium (Be)	ug	ND	ND	ND	ND	0.090	8077477
Back Half Boron (B)	ug	ND	ND	ND	ND	100	8077477
Back Half Cadmium (Cd)	ug	ND	ND	ND	ND	0.090	8077477
Back Half Chromium (Cr)	ug	ND	ND	ND	ND	1.5	8077477
Back Half Cobalt (Co)	ug	ND	0.157	0.127	0.171	0.090	8077477
Back Half Copper (Cu)	ug	ND	17.0	3.67	6.97	0.75	8077477
Back Half Lead (Pb)	ug	ND	2.05	1.16	0.69	0.30	8077477
Back Half Manganese (Mn)	ug	ND	3.89	2.75	1.98	0.60	8077477
Back Half Molybdenum (Mo)	ug	ND	ND	ND	ND	0.50	8077477
Back Half Nickel (Ni)	ug	ND	0.78	1.39	0.95	0.50	8077477
Back Half Phosphorus (P)	ug	49	50	49	46	45	8077477
Back Half Selenium (Se)	ug	ND	ND	ND	ND	1.0	8077477
Back Half Silver (Ag)	ug	ND	ND	ND	ND	0.12	8077477
Back Half Strontium (Sr)	ug	ND	3.85	1.17	0.64	0.45	8077477
Back Half Tin (Sn)	ug	57.5	34.1	39.9	56.5	3.0	8077477
Back Half Titanium (Ti)	ug	ND	1.7	3.3	ND	1.5	8077477
Back Half Vanadium (V)	ug	ND	ND	ND	ND	0.30	8077477
Back Half Zinc (Zn)	ug	ND	16.8	10.9	7.2	5.0	8077477

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Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
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Sampler Initials: JDF

CARBONYL COMPOUNDS BY HPLC (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG286		SYG287		SYG288		SYG289		
Sampling Date		2022/06/17		2022/06/17		2022/06/17		2022/06/17		
COC Number		34346		34346		34346		34346		
	UNITS	**CARB430 - BLANK**	**RDL**	**CARB430 - T1**	**RDL**	**CARB430 - T2**	**RDL**	**CARB430 - T3**	**RDL**	**QC Batch**
Formaldehyde (Methanal)	ug/Tot.	47	12	27	8	55	20	32	12	8068727
Acetaldehyde (Ethanal)	ug/Tot.	ND	2	ND	2	3	2	ND	2	8068727
Acrolein	ug/Tot.	ND	2	ND	2	ND	2	ND	2	8068727

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QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865
Sampler Initials: JDF

TEST SUMMARY

Bureau Veritas ID: SYG273
Sample ID: M26 - H2SO4 BLANK
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hydrogen Halides -Midget H2SO4 Imp	IC/SPEC	8067823	2022/06/22	2022/06/22	Ann-Marie Stern
Ammonium in Midget H2SO4 Imp(CTM-027mod)	IC/SPEC	8070468	2022/06/23	2022/06/23	Rupinder Sihota
Volume of Sulfuric Acid Impinger		8067799	N/A	2022/06/22	Frank Mo

Bureau Veritas ID: SYG274
Sample ID: M26 - T1 - H2SO4
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hydrogen Halides -Midget H2SO4 Imp	IC/SPEC	8067823	2022/06/22	2022/06/22	Ann-Marie Stern
Ammonium in Midget H2SO4 Imp(CTM-027mod)	IC/SPEC	8070468	2022/06/23	2022/06/23	Rupinder Sihota
Volume of Sulfuric Acid Impinger		8067799	N/A	2022/06/22	Frank Mo

Bureau Veritas ID: SYG274 Dup
Sample ID: M26 - T1 - H2SO4
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hydrogen Halides -Midget H2SO4 Imp	IC/SPEC	8067823	2022/06/22	2022/06/22	Ann-Marie Stern

Bureau Veritas ID: SYG275
Sample ID: M26 - T2 - H2SO4
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hydrogen Halides -Midget H2SO4 Imp	IC/SPEC	8067823	2022/06/22	2022/06/22	Ann-Marie Stern
Ammonium in Midget H2SO4 Imp(CTM-027mod)	IC/SPEC	8070468	2022/06/23	2022/06/23	Rupinder Sihota
Volume of Sulfuric Acid Impinger		8067799	N/A	2022/06/22	Frank Mo

Bureau Veritas ID: SYG275 Dup
Sample ID: M26 - T2 - H2SO4
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Ammonium in Midget H2SO4 Imp(CTM-027mod)	IC/SPEC	8070468	2022/06/23	2022/06/23	Rupinder Sihota

Bureau Veritas ID: SYG276
Sample ID: M26 - T3 - H2SO4
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hydrogen Halides -Midget H2SO4 Imp	IC/SPEC	8067823	2022/06/22	2022/06/22	Ann-Marie Stern
Ammonium in Midget H2SO4 Imp(CTM-027mod)	IC/SPEC	8070468	2022/06/23	2022/06/23	Rupinder Sihota
Volume of Sulfuric Acid Impinger		8067799	N/A	2022/06/22	Frank Mo

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TEST SUMMARY

Bureau Veritas ID: SYG277 **Collected:** 2022/06/17
Sample ID: M26 - NAOH BLANK **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Halogens in Midget NaOH Imp.	IC/SPEC	8076971	2022/06/27	2022/06/27	Ann-Marie Stern
Volume of Sodium Hydroxide Impinger		8076962	N/A	2022/06/27	Lusine Khachatryan

Bureau Veritas ID: SYG278 **Collected:** 2022/06/17
Sample ID: M26 - T1 - NAOH **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Halogens in Midget NaOH Imp.	IC/SPEC	8076971	2022/06/27	2022/06/27	Ann-Marie Stern
Volume of Sodium Hydroxide Impinger		8076962	N/A	2022/06/27	Lusine Khachatryan

Bureau Veritas ID: SYG278 Dup **Collected:** 2022/06/17
Sample ID: M26 - T1 - NAOH **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Halogens in Midget NaOH Imp.	IC/SPEC	8076971	2022/06/27	2022/06/27	Ann-Marie Stern

Bureau Veritas ID: SYG279 **Collected:** 2022/06/17
Sample ID: M26 - T2 - NAOH **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Halogens in Midget NaOH Imp.	IC/SPEC	8076971	2022/06/27	2022/06/27	Ann-Marie Stern
Volume of Sodium Hydroxide Impinger		8076962	N/A	2022/06/27	Lusine Khachatryan

Bureau Veritas ID: SYG280 **Collected:** 2022/06/17
Sample ID: M26 - T3 - NAOH **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Halogens in Midget NaOH Imp.	IC/SPEC	8076971	2022/06/27	2022/06/27	Ann-Marie Stern
Volume of Sodium Hydroxide Impinger		8076962	N/A	2022/06/27	Lusine Khachatryan

Bureau Veritas ID: SYG281 **Collected:** 2022/06/17
Sample ID: M5/M29 - BLANK **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury 3C in HCl Rinse	CV/AA	8073000	2022/06/24	2022/06/28	Jaswinder Kaur
Mercury 2B in HNO3/H2O2 Imp.	CV/AA	8067839	2022/06/22	2022/06/23	Jaswinder Kaur
Mercury 3A in HNO3 Rinse	CV/AA	8067831	2022/06/22	2022/06/23	Jaswinder Kaur
Mercury 3B in KMnO4/H2SO4 Imp.	CV/AA	8067614	2022/06/22	2002/06/23	Jaswinder Kaur
Mercury 1B in Filter (Nitric Acid) (M29)	CV/AA	8082544	2022/06/29	2022/07/04	Jaswinder Kaur

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Sampler Initials: JDF

TEST SUMMARY

Bureau Veritas ID: SYG281
Sample ID: M5/M29 - BLANK
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury 1B in Filter (HF) (M29)	CV/AA	8084197	2022/06/30	2022/07/04	Jaswinder Kaur
Metals B.H. in H2O2/HNO3 Imp.(6010C)	ICP	8077484	2022/06/27	2022/06/29	Suban Kanapathippllai
Metals F.H. - Nitric Acid Extractable	ICP	8082548	2022/06/29	2022/07/06	Suban Kanapathippllai
Metals F.H. - HF Total	ICP	8084198	2022/06/30	2022/07/06	Suban Kanapathippllai
Metals B.H. in H2O2/HNO3 Imp.(6020B m)	ICP1/MS	8077477	2022/06/27	2022/06/29	Nan Raykha
Metals on Filter - HNO3 Extractable	ICP1/MS	8082554	2022/06/29	2022/06/30	Nan Raykha
Metals on Filter - HF Total	ICP1/MS	8084207	2022/06/30	2022/06/30	Nan Raykha
Particulates/Acetone Rinse (M5/315/M201)	BAL	8077489	2022/06/27	2022/06/24	Andrea Contreras Arenas
Particulates/Filter (M5/315/NJATM1/M201)	BAL	8077483	N/A	2022/06/23	Andrea Contreras Arenas
Final Volume of Acetone Probe Rinse		8077498	N/A	2022/06/22	Andrea Contreras Arenas

Bureau Veritas ID: SYG283
Sample ID: M5/M29 - T1
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury 3C in HCl Rinse	CV/AA	8073000	2022/06/24	2022/06/28	Jaswinder Kaur
Mercury 2B in HNO3/H2O2 Imp.	CV/AA	8067839	2022/06/22	2022/06/23	Jaswinder Kaur
Mercury 3A in HNO3 Rinse	CV/AA	8067831	2022/06/22	2022/06/23	Jaswinder Kaur
Mercury 3B in KMnO4/H2SO4 Imp.	CV/AA	8067614	2022/06/22	2002/06/23	Jaswinder Kaur
Mercury 1B in Filter (Nitric Acid) (M29)	CV/AA	8082544	2022/06/29	2022/07/04	Jaswinder Kaur
Mercury 1B in Filter (HF) (M29)	CV/AA	8084197	2022/06/30	2022/07/04	Jaswinder Kaur
Metals B.H. in H2O2/HNO3 Imp.(6010C)	ICP	8077484	2022/06/27	2022/06/29	Suban Kanapathippllai
Metals F.H. - Nitric Acid Extractable	ICP	8082548	2022/06/29	2022/07/06	Suban Kanapathippllai
Metals F.H. - HF Total	ICP	8084198	2022/06/30	2022/07/06	Suban Kanapathippllai
Metals B.H. in H2O2/HNO3 Imp.(6020B m)	ICP1/MS	8077477	2022/06/27	2022/06/29	Nan Raykha
Metals on Filter - HNO3 Extractable	ICP1/MS	8082554	2022/06/29	2022/06/30	Nan Raykha
Metals on Filter - HF Total	ICP1/MS	8084207	2022/06/30	2022/06/30	Nan Raykha
Particulates/Acetone Rinse (M5/315/M201)	BAL	8077489	2022/06/27	2022/06/24	Andrea Contreras Arenas
Particulates/Filter (M5/315/NJATM1/M201)	BAL	8077483	N/A	2022/06/23	Andrea Contreras Arenas
Final Volume of Acetone Probe Rinse		8077498	N/A	2022/06/22	Andrea Contreras Arenas

Bureau Veritas ID: SYG283 Dup
Sample ID: M5/M29 - T1
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury 3C in HCl Rinse	CV/AA	8073000	2022/06/24	2022/06/28	Jaswinder Kaur
Mercury 1B in Filter (Nitric Acid) (M29)	CV/AA	8082544	2022/06/29	2022/07/04	Jaswinder Kaur
Metals B.H. in H2O2/HNO3 Imp.(6010C)	ICP	8077484	2022/06/27	2022/06/29	Suban Kanapathippllai
Metals F.H. - Nitric Acid Extractable	ICP	8082548	2022/06/29	2022/07/06	Suban Kanapathippllai
Metals F.H. - HF Total	ICP	8084198	2022/06/30	2022/07/06	Suban Kanapathippllai
Metals B.H. in H2O2/HNO3 Imp.(6020B m)	ICP1/MS	8077477	2022/06/27	2022/06/29	Nan Raykha

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Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865
Sampler Initials: JDF

TEST SUMMARY

Bureau Veritas ID: SYG283 Dup
Sample ID: M5/M29 - T1
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals on Filter - HNO3 Extractable	ICP1/MS	8082554	2022/06/29	2022/06/30	Nan Raykha
Metals on Filter - HF Total	ICP1/MS	8084207	2022/06/30	2022/06/30	Nan Raykha

Bureau Veritas ID: SYG284
Sample ID: M5/M29 - T2
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury 3C in HCl Rinse	CV/AA	8073000	2022/06/24	2022/06/28	Jaswinder Kaur
Mercury 2B in HNO3/H2O2 Imp.	CV/AA	8067839	2022/06/22	2022/06/23	Jaswinder Kaur
Mercury 3A in HNO3 Rinse	CV/AA	8067831	2022/06/22	2022/06/23	Jaswinder Kaur
Mercury 3B in KMnO4/H2SO4 Imp.	CV/AA	8067614	2022/06/22	2002/06/23	Jaswinder Kaur
Mercury 1B in Filter (Nitric Acid) (M29)	CV/AA	8082544	2022/06/29	2022/07/04	Jaswinder Kaur
Mercury 1B in Filter (HF) (M29)	CV/AA	8084197	2022/06/30	2022/07/04	Jaswinder Kaur
Metals B.H. in H2O2/HNO3 Imp.(6010C)	ICP	8077484	2022/06/27	2022/06/29	Suban Kanapathippllai
Metals F.H. - Nitric Acid Extractable	ICP	8082548	2022/06/29	2022/07/06	Suban Kanapathippllai
Metals F.H. - HF Total	ICP	8084198	2022/06/30	2022/07/06	Suban Kanapathippllai
Metals B.H. in H2O2/HNO3 Imp.(6020B m)	ICP1/MS	8077477	2022/06/27	2022/06/29	Nan Raykha
Metals on Filter - HNO3 Extractable	ICP1/MS	8082554	2022/06/29	2022/06/30	Nan Raykha
Metals on Filter - HF Total	ICP1/MS	8084207	2022/06/30	2022/06/30	Nan Raykha
Particulates/Acetone Rinse (M5/315/M201)	BAL	8077489	2022/06/27	2022/06/24	Andrea Contreras Arenas
Particulates/Filter (M5/315/NJATM1/M201)	BAL	8077483	N/A	2022/06/23	Andrea Contreras Arenas
Final Volume of Acetone Probe Rinse		8077498	N/A	2022/06/22	Andrea Contreras Arenas

Bureau Veritas ID: SYG285
Sample ID: M5/M29 - T3
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury 3C in HCl Rinse	CV/AA	8073000	2022/06/24	2022/06/28	Jaswinder Kaur
Mercury 2B in HNO3/H2O2 Imp.	CV/AA	8067839	2022/06/22	2022/06/23	Jaswinder Kaur
Mercury 3A in HNO3 Rinse	CV/AA	8067831	2022/06/22	2022/06/23	Jaswinder Kaur
Mercury 3B in KMnO4/H2SO4 Imp.	CV/AA	8067614	2022/06/22	2002/06/23	Jaswinder Kaur
Mercury 1B in Filter (Nitric Acid) (M29)	CV/AA	8082544	2022/06/29	2022/07/04	Jaswinder Kaur
Mercury 1B in Filter (HF) (M29)	CV/AA	8084197	2022/06/30	2022/07/04	Jaswinder Kaur
Metals B.H. in H2O2/HNO3 Imp.(6010C)	ICP	8077484	2022/06/27	2022/06/29	Suban Kanapathippllai
Metals F.H. - Nitric Acid Extractable	ICP	8082548	2022/06/29	2022/07/06	Suban Kanapathippllai
Metals F.H. - HF Total	ICP	8084198	2022/06/30	2022/07/06	Suban Kanapathippllai
Metals B.H. in H2O2/HNO3 Imp.(6020B m)	ICP1/MS	8077477	2022/06/27	2022/06/29	Nan Raykha
Metals on Filter - HNO3 Extractable	ICP1/MS	8082554	2022/06/29	2022/06/30	Nan Raykha
Metals on Filter - HF Total	ICP1/MS	8084207	2022/06/30	2022/06/30	Nan Raykha
Particulates/Acetone Rinse (M5/315/M201)	BAL	8077489	2022/06/27	2022/06/24	Andrea Contreras Arenas
Particulates/Filter (M5/315/NJATM1/M201)	BAL	8077483	N/A	2022/06/23	Andrea Contreras Arenas

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Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865
Sampler Initials: JDF

TEST SUMMARY

Bureau Veritas ID: SYG285 **Collected:** 2022/06/17
Sample ID: M5/M29 - T3 **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Final Volume of Acetone Probe Rinse		8077498	N/A	2022/06/22	Andrea Contreras Arenas

Bureau Veritas ID: SYG285 Dup **Collected:** 2022/06/17
Sample ID: M5/M29 - T3 **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury 3A in HNO3 Rinse	CV/AA	8067831	2022/06/22	2022/06/23	Jaswinder Kaur
Mercury 1B in Filter (HF) (M29)	CV/AA	8084197	2022/06/30	2022/07/04	Jaswinder Kaur

Bureau Veritas ID: SYG286 **Collected:** 2022/06/17
Sample ID: CARB430 - BLANK **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Aldehydes + Ketones in Air	LC/UV	8068727	2022/06/23	2022/06/24	Dennis Boodram

Bureau Veritas ID: SYG287 **Collected:** 2022/06/17
Sample ID: CARB430 - T1 **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Aldehydes + Ketones in Air	LC/UV	8068727	2022/06/23	2022/06/24	Dennis Boodram

Bureau Veritas ID: SYG288 **Collected:** 2022/06/17
Sample ID: CARB430 - T2 **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Aldehydes + Ketones in Air	LC/UV	8068727	2022/06/23	2022/06/24	Dennis Boodram

Bureau Veritas ID: SYG289 **Collected:** 2022/06/17
Sample ID: CARB430 - T3 **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Aldehydes + Ketones in Air	LC/UV	8068727	2022/06/23	2022/06/24	Dennis Boodram

Bureau Veritas ID: SYH388 **Collected:** 2022/06/17
Sample ID: M26- H20 BLANK **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hydrogen Halides -Midget H2SO4 Imp	IC/SPEC	8067823	2022/06/22	2022/06/22	Ann-Marie Stern

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Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865
Sampler Initials: JDF

TEST SUMMARY

Bureau Veritas ID: SYH388
Sample ID: M26- H20 BLANK
Matrix: Stack Sampling Train

Collected: 2022/06/17
Shipped:
Received: 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Ammonium in Midget H2SO4 Imp(CTM-027mod)	IC/SPEC	8070468	2022/06/23	2022/06/23	Rupinder Sihota
Volume of Sulfuric Acid Impinger		8067799	N/A	2022/06/22	Frank Mo

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GENERAL COMMENTS

Sample SYG278 [M26 - T1 - NAOH] : Samples were diluted due to background interference

Sample SYG279 [M26 - T2 - NAOH] : Samples were diluted due to background interference

Sample SYG280 [M26 - T3 - NAOH] : Samples were diluted due to background interference

Sample SYG286 [CARB430 - BLANK] : Sample Volume received was 170 mL; 12 mL of sample was used for analysis.
FORMALDEHYDE required dilution. The DL was adjusted accordingly.

Sample SYG287 [CARB430 - T1] : FORMALDEHYDE required dilution. The DL was adjusted accordingly.

Sample SYG288 [CARB430 - T2] : FORMALDEHYDE required dilution. The DL was adjusted accordingly.

Sample SYG289 [CARB430 - T3] : FORMALDEHYDE required dilution. The DL was adjusted accordingly.

ELEMENTS BY ICP/MS (STACK SAMPLING TRAIN)

Metals on Filter - HF Total: Post digestion duplicate and spike were done on sample SYG283.

Metals on Filter - HNO3 Extractable: Post digestion duplicate and spike were done on sample SYG283.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
8067614	JWK	Reagent Blank	3B Mercury (Hg)	2002/06/23	ND, RDL=0.013		ug	
8067614	JWK	Matrix Spike	3B Mercury (Hg)	2002/06/23		91	%	75 - 125
8067614	JWK	MS/MSD RPD	3B Mercury (Hg)	2002/06/23	0.78		%	20
8067614	JWK	Spiked Blank	3B Mercury (Hg)	2002/06/23		94	%	90 - 110
8067614	JWK	RPD	3B Mercury (Hg)	2002/06/23	0.96		%	20
8067614	JWK	Method Blank	3B Mercury (Hg)	2002/06/23	ND, RDL=0.013		ug	
8067614	JWK	RPD - Sample/Sample Dup	3B Mercury (Hg)	2002/06/23	2.4		%	20
8067823	A_S	Matrix Spike(SYG274)	Hydrochloric Acid	2022/06/22		96	%	80 - 120
			Hydrofluoric Acid	2022/06/22		99	%	80 - 120
8067823	A_S	Spiked Blank	Hydrochloric Acid	2022/06/22		100	%	90 - 110
			Hydrofluoric Acid	2022/06/22		103	%	90 - 110
8067823	A_S	Method Blank	Hydrochloric Acid	2022/06/22	ND, RDL=30		ug	
			Hydrofluoric Acid	2022/06/22	ND, RDL=30		ug	
8067823	A_S	RPD - Sample/Sample Dup	Hydrochloric Acid	2022/06/22	2.2		%	20
			Hydrofluoric Acid	2022/06/22	NC		%	20
8067831	JWK	Matrix Spike(SYG285)	3A Mercury (Hg)	2022/06/23		88	%	75 - 125
8067831	JWK	MS/MSD RPD	3A Mercury (Hg)	2022/06/23	6.3		%	20
8067831	JWK	Spiked Blank	3A Mercury (Hg)	2022/06/23		97	%	90 - 110
8067831	JWK	RPD	3A Mercury (Hg)	2022/06/23	5.0		%	20
8067831	JWK	Method Blank	3A Mercury (Hg)	2022/06/23	ND, RDL=0.005		ug	
8067831	JWK	RPD - Sample/Sample Dup	3A Mercury (Hg)	2022/06/23	12		%	20
8067839	JWK	Matrix Spike	2B Mercury (Hg)	2022/06/23		88	%	75 - 125
8067839	JWK	MS/MSD RPD	2B Mercury (Hg)	2022/06/23	13		%	20
8067839	JWK	Spiked Blank	2B Mercury (Hg)	2022/06/23		93	%	90 - 110
8067839	JWK	RPD	2B Mercury (Hg)	2022/06/23	0.22		%	20
8067839	JWK	Method Blank	2B Mercury (Hg)	2022/06/23	ND, RDL=0.015		ug	
8067839	JWK	RPD - Sample/Sample Dup	2B Mercury (Hg)	2022/06/23	18		%	20
8068727	DEO	Spiked Blank	Formaldehyde (Methanal)	2022/06/24		102	%	5 - 200
			Acetaldehyde (Ethanal)	2022/06/24		95	%	5 - 200
			Acrolein	2022/06/24		15 (1)	%	5 - 200
8068727	DEO	RPD	Formaldehyde (Methanal)	2022/06/24	1.5		%	30
			Acetaldehyde (Ethanal)	2022/06/24	0.73		%	30
			Acrolein	2022/06/24	144 (2)		%	30
8068727	DEO	Method Blank	Formaldehyde (Methanal)	2022/06/24	ND,RDL=2		ug/Tot.	
			Acetaldehyde (Ethanal)	2022/06/24	ND,RDL=2		ug/Tot.	
			Acrolein	2022/06/24	ND,RDL=2		ug/Tot.	
8070468	RSU	Matrix Spike(SYG275)	Ammonium (NH4)	2022/06/23		97	%	75 - 125
8070468	RSU	Spiked Blank	Ammonium (NH4)	2022/06/23		101	%	90 - 110
8070468	RSU	Method Blank	Ammonium (NH4)	2022/06/23	ND, RDL=6.0		ug	
8070468	RSU	RPD - Sample/Sample Dup	Ammonium (NH4)	2022/06/23	2.5		%	20
8073000	JWK	Reagent Blank	3C Mercury (Hg)	2022/06/28	ND, RDL=0.013		ug	
8073000	JWK	Matrix Spike(SYG283)	3C Mercury (Hg)	2022/06/28		94	%	75 - 125

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
8073000	JWK	MS/MSD RPD	3C Mercury (Hg)	2022/06/28	2.4		%	20
8073000	JWK	Spiked Blank	3C Mercury (Hg)	2022/06/28		95	%	90 - 110
8073000	JWK	RPD	3C Mercury (Hg)	2022/06/28	1.5		%	20
8073000	JWK	Method Blank	3C Mercury (Hg)	2022/06/28	ND, RDL=0.013		ug	
8073000	JWK	RPD - Sample/Sample Dup	3C Mercury (Hg)	2022/06/28	0.57		%	20
8076971	A_S	Matrix Spike(SYG278)	Chlorine	2022/06/27		100	%	80 - 120
			Fluorine	2022/06/27		100	%	80 - 120
8076971	A_S	Spiked Blank	Chlorine	2022/06/27		100	%	90 - 110
			Fluorine	2022/06/27		100	%	90 - 110
8076971	A_S	Method Blank	Chlorine	2022/06/27	ND, RDL=180		ug	
			Fluorine	2022/06/27	ND, RDL=120		ug	
8076971	A_S	RPD - Sample/Sample Dup	Chlorine	2022/06/27	NC		%	20
			Fluorine	2022/06/27	NC		%	20
8077477	N_R	Matrix Spike(SYG283)	Back Half Antimony (Sb)	2022/06/29		98	%	75 - 125
			Back Half Arsenic (As)	2022/06/29		97	%	75 - 125
			Back Half Barium (Ba)	2022/06/29		97	%	75 - 125
			Back Half Beryllium (Be)	2022/06/29		94	%	75 - 125
			Back Half Boron (B)	2022/06/29		91	%	75 - 125
			Back Half Cadmium (Cd)	2022/06/29		94	%	75 - 125
			Back Half Chromium (Cr)	2022/06/29		102	%	75 - 125
			Back Half Cobalt (Co)	2022/06/29		104	%	75 - 125
			Back Half Copper (Cu)	2022/06/29		104	%	75 - 125
			Back Half Lead (Pb)	2022/06/29		99	%	75 - 125
			Back Half Manganese (Mn)	2022/06/29		101	%	75 - 125
			Back Half Molybdenum (Mo)	2022/06/29		101	%	75 - 125
			Back Half Nickel (Ni)	2022/06/29		101	%	75 - 125
			Back Half Phosphorus (P)	2022/06/29		97	%	75 - 125
			Back Half Selenium (Se)	2022/06/29		92	%	75 - 125
			Back Half Silver (Ag)	2022/06/29		100	%	75 - 125
			Back Half Strontium (Sr)	2022/06/29		99	%	75 - 125
			Back Half Tin (Sn)	2022/06/29		99	%	75 - 125
			Back Half Titanium (Ti)	2022/06/29		100	%	75 - 125
			Back Half Vanadium (V)	2022/06/29		103	%	75 - 125
			Back Half Zinc (Zn)	2022/06/29		91	%	75 - 125
8077477	N_R	MS/MSD RPD	Back Half Antimony (Sb)	2022/06/29	1.6		%	20
			Back Half Arsenic (As)	2022/06/29	0.93		%	20
			Back Half Barium (Ba)	2022/06/29	0.94		%	20
			Back Half Beryllium (Be)	2022/06/29	3.9		%	20
			Back Half Boron (B)	2022/06/29	1.3		%	20
			Back Half Cadmium (Cd)	2022/06/29	0.67		%	20
			Back Half Chromium (Cr)	2022/06/29	1.2		%	20
			Back Half Cobalt (Co)	2022/06/29	2.4		%	20
			Back Half Copper (Cu)	2022/06/29	0.54		%	20
			Back Half Lead (Pb)	2022/06/29	1.3		%	20
			Back Half Manganese (Mn)	2022/06/29	0.57		%	20
			Back Half Molybdenum (Mo)	2022/06/29	0.84		%	20
			Back Half Nickel (Ni)	2022/06/29	1.0		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Back Half Phosphorus (P)	2022/06/29	2.8		%	20
			Back Half Selenium (Se)	2022/06/29	0.16		%	20
			Back Half Silver (Ag)	2022/06/29	1.0		%	20
			Back Half Strontium (Sr)	2022/06/29	1.7		%	20
			Back Half Tin (Sn)	2022/06/29	0.74		%	20
			Back Half Titanium (Ti)	2022/06/29	1.5		%	20
			Back Half Vanadium (V)	2022/06/29	0.31		%	20
			Back Half Zinc (Zn)	2022/06/29	0.011		%	20
8077477	N_R	Spiked Blank	Back Half Antimony (Sb)	2022/06/29		99	%	85 - 115
			Back Half Arsenic (As)	2022/06/29		100	%	85 - 115
			Back Half Barium (Ba)	2022/06/29		98	%	85 - 115
			Back Half Beryllium (Be)	2022/06/29		101	%	85 - 115
			Back Half Boron (B)	2022/06/29		108	%	85 - 115
			Back Half Cadmium (Cd)	2022/06/29		97	%	85 - 115
			Back Half Chromium (Cr)	2022/06/29		102	%	85 - 115
			Back Half Cobalt (Co)	2022/06/29		104	%	85 - 115
			Back Half Copper (Cu)	2022/06/29		105	%	85 - 115
			Back Half Lead (Pb)	2022/06/29		103	%	85 - 115
			Back Half Manganese (Mn)	2022/06/29		103	%	85 - 115
			Back Half Molybdenum (Mo)	2022/06/29		100	%	85 - 115
			Back Half Nickel (Ni)	2022/06/29		103	%	85 - 115
			Back Half Phosphorus (P)	2022/06/29		113	%	85 - 115
			Back Half Selenium (Se)	2022/06/29		97	%	85 - 115
			Back Half Silver (Ag)	2022/06/29		100	%	85 - 115
			Back Half Strontium (Sr)	2022/06/29		98	%	85 - 115
			Back Half Tin (Sn)	2022/06/29		100	%	85 - 115
			Back Half Titanium (Ti)	2022/06/29		100	%	85 - 115
			Back Half Vanadium (V)	2022/06/29		104	%	85 - 115
			Back Half Zinc (Zn)	2022/06/29		98	%	85 - 115
8077477	N_R	RPD	Back Half Antimony (Sb)	2022/06/29	5.3		%	20
			Back Half Arsenic (As)	2022/06/29	0.54		%	20
			Back Half Barium (Ba)	2022/06/29	3.8		%	20
			Back Half Beryllium (Be)	2022/06/29	3.3		%	20
			Back Half Boron (B)	2022/06/29	3.1		%	20
			Back Half Cadmium (Cd)	2022/06/29	2.9		%	20
			Back Half Chromium (Cr)	2022/06/29	1.0		%	20
			Back Half Cobalt (Co)	2022/06/29	0.019		%	20
			Back Half Copper (Cu)	2022/06/29	3.1		%	20
			Back Half Lead (Pb)	2022/06/29	2.2		%	20
			Back Half Manganese (Mn)	2022/06/29	0.28		%	20
			Back Half Molybdenum (Mo)	2022/06/29	4.7		%	20
			Back Half Nickel (Ni)	2022/06/29	0.25		%	20
			Back Half Phosphorus (P)	2022/06/29	0.21		%	20
			Back Half Selenium (Se)	2022/06/29	1.7		%	20
			Back Half Silver (Ag)	2022/06/29	0.45		%	20
			Back Half Strontium (Sr)	2022/06/29	1.5		%	20
			Back Half Tin (Sn)	2022/06/29	3.2		%	20
			Back Half Titanium (Ti)	2022/06/29	3.1		%	20
			Back Half Vanadium (V)	2022/06/29	0.77		%	20
			Back Half Zinc (Zn)	2022/06/29	0.43		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
8077477	N_R	Method Blank	Back Half Antimony (Sb)	2022/06/29	ND, RDL=0.40		ug	
			Back Half Arsenic (As)	2022/06/29	ND, RDL=0.40		ug	
			Back Half Barium (Ba)	2022/06/29	ND, RDL=0.60		ug	
			Back Half Beryllium (Be)	2022/06/29	ND, RDL=0.090		ug	
			Back Half Boron (B)	2022/06/29	ND, RDL=100		ug	
			Back Half Cadmium (Cd)	2022/06/29	ND, RDL=0.090		ug	
			Back Half Chromium (Cr)	2022/06/29	ND, RDL=1.5		ug	
			Back Half Cobalt (Co)	2022/06/29	ND, RDL=0.090		ug	
			Back Half Copper (Cu)	2022/06/29	ND, RDL=0.75		ug	
			Back Half Lead (Pb)	2022/06/29	ND, RDL=0.30		ug	
			Back Half Manganese (Mn)	2022/06/29	ND, RDL=0.60		ug	
			Back Half Molybdenum (Mo)	2022/06/29	ND, RDL=0.50		ug	
			Back Half Nickel (Ni)	2022/06/29	ND, RDL=0.50		ug	
			Back Half Phosphorus (P)	2022/06/29	ND, RDL=45		ug	
			Back Half Selenium (Se)	2022/06/29	ND, RDL=1.0		ug	
			Back Half Silver (Ag)	2022/06/29	ND, RDL=0.12		ug	
			Back Half Strontium (Sr)	2022/06/29	ND, RDL=0.45		ug	
			Back Half Tin (Sn)	2022/06/29	ND, RDL=3.0		ug	
			Back Half Titanium (Ti)	2022/06/29	ND, RDL=1.5		ug	
			Back Half Vanadium (V)	2022/06/29	ND, RDL=0.30		ug	
			Back Half Zinc (Zn)	2022/06/29	ND, RDL=5.0		ug	
8077477	N_R	RPD - Sample/Sample Dup	Back Half Antimony (Sb)	2022/06/29	NC		%	20
			Back Half Arsenic (As)	2022/06/29	NC		%	20
			Back Half Barium (Ba)	2022/06/29	2.6		%	20
			Back Half Beryllium (Be)	2022/06/29	NC		%	20
			Back Half Boron (B)	2022/06/29	NC		%	20
			Back Half Cadmium (Cd)	2022/06/29	NC		%	20
			Back Half Chromium (Cr)	2022/06/29	NC		%	20
			Back Half Cobalt (Co)	2022/06/29	3.2		%	20
			Back Half Copper (Cu)	2022/06/29	0.48		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Back Half Lead (Pb)	2022/06/29	1.2		%	20
			Back Half Manganese (Mn)	2022/06/29	0.073		%	20
			Back Half Molybdenum (Mo)	2022/06/29	NC		%	20
			Back Half Nickel (Ni)	2022/06/29	0.36		%	20
			Back Half Phosphorus (P)	2022/06/29	0.92		%	20
			Back Half Selenium (Se)	2022/06/29	NC		%	20
			Back Half Silver (Ag)	2022/06/29	NC		%	20
			Back Half Strontium (Sr)	2022/06/29	4.2		%	20
			Back Half Tin (Sn)	2022/06/29	0.87		%	20
			Back Half Titanium (Ti)	2022/06/29	14		%	20
			Back Half Vanadium (V)	2022/06/29	NC		%	20
			Back Half Zinc (Zn)	2022/06/29	3.7		%	20
8077484	SUK	Matrix Spike(SYG283)	Back Half Aluminum (Al)	2022/06/29		99	%	80 - 120
			Back Half Calcium (Ca)	2022/06/29		103	%	80 - 120
			Back Half Iron (Fe)	2022/06/29		103	%	80 - 120
			Back Half Lithium (Li)	2022/06/29		96	%	N/A
			Back Half Magnesium (Mg)	2022/06/29		98	%	80 - 120
			Back Half Silicon (Si)	2022/06/29		104	%	80 - 120
			Back Half Sodium (Na)	2022/06/29		96	%	80 - 120
8077484	SUK	Spiked Blank	Back Half Aluminum (Al)	2022/06/29		112 (2)	%	90 - 110
			Back Half Calcium (Ca)	2022/06/29		113 (2)	%	90 - 110
			Back Half Iron (Fe)	2022/06/29		109	%	90 - 110
			Back Half Lithium (Li)	2022/06/29		104	%	90 - 110
			Back Half Magnesium (Mg)	2022/06/29		108	%	90 - 110
			Back Half Silicon (Si)	2022/06/29		346 (2)	%	70 - 190
			Back Half Sodium (Na)	2022/06/29		108	%	90 - 110
8077484	SUK	RPD	Back Half Aluminum (Al)	2022/06/29	3.1		%	20
			Back Half Calcium (Ca)	2022/06/29	1.3		%	20
			Back Half Iron (Fe)	2022/06/29	1.8		%	20
			Back Half Lithium (Li)	2022/06/29	1.1		%	20
			Back Half Magnesium (Mg)	2022/06/29	1.6		%	20
			Back Half Silicon (Si)	2022/06/29	69 (2)		%	20
			Back Half Sodium (Na)	2022/06/29	2.3		%	20
8077484	SUK	Method Blank	Back Half Aluminum (Al)	2022/06/29	ND, RDL=7.5		ug	
			Back Half Calcium (Ca)	2022/06/29	ND, RDL=30		ug	
			Back Half Iron (Fe)	2022/06/29	ND, RDL=3.0		ug	
			Back Half Lithium (Li)	2022/06/29	ND, RDL=3.0		ug	
			Back Half Magnesium (Mg)	2022/06/29	ND, RDL=7.5		ug	
			Back Half Silicon (Si)	2022/06/29	ND, RDL=15		ug	
			Back Half Sodium (Na)	2022/06/29	ND, RDL=15		ug	
8077484	SUK	RPD - Sample/Sample Dup	Back Half Aluminum (Al)	2022/06/29	0.83		%	20
			Back Half Calcium (Ca)	2022/06/29	1.0		%	20
			Back Half Iron (Fe)	2022/06/29	0.66		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Back Half Lithium (Li)	2022/06/29	NC		%	20
			Back Half Magnesium (Mg)	2022/06/29	0.76		%	20
			Back Half Silicon (Si)	2022/06/29	0.47		%	20
			Back Half Sodium (Na)	2022/06/29	0.59		%	20
8077489	ANC	Method Blank	Acetone Rinse Particulate Weight in Acetone Rinse	2022/06/24	ND, RDL=0.5		mg	
8082544	JWK	Reagent Blank	1B (Nitric) Mercury (Hg)	2022/07/04	ND, RDL=0.015		ug	
8082544	JWK	Matrix Spike(SYG283)	1B (Nitric) Mercury (Hg)	2022/07/04		89	%	75 - 125
8082544	JWK	MS/MSD RPD	1B (Nitric) Mercury (Hg)	2022/07/04	2.2		%	20
8082544	JWK	Spiked Blank	1B (Nitric) Mercury (Hg)	2022/07/04		98	%	90 - 110
8082544	JWK	RPD	1B (Nitric) Mercury (Hg)	2022/07/04	0.31		%	20
8082544	JWK	Method Blank	1B (Nitric) Mercury (Hg)	2022/07/04	ND, RDL=0.015		ug	
8082544	JWK	RPD - Sample/Sample Dup	1B (Nitric) Mercury (Hg)	2022/07/04	1.1		%	20
8082548	SUK	Matrix Spike(SYG283)	Front Half (Nitric) Aluminum (Al)	2022/07/06		98	%	80 - 120
			Front Half (Nitric) Calcium (Ca)	2022/07/06		99	%	80 - 120
			Front Half (Nitric) Iron (Fe)	2022/07/06		103	%	80 - 120
			Front Half (Nitric) Lithium (Li)	2022/07/06		102	%	N/A
			Front Half (Nitric) Magnesium (Mg)	2022/07/06		98	%	80 - 120
			Front Half (Nitric) Silicon (Si)	2022/07/06		101	%	80 - 120
			Front Half (Nitric) Sodium (Na)	2022/07/06		103	%	80 - 120
8082548	SUK	Spiked Blank	Front Half (Nitric) Aluminum (Al)	2022/07/06		93	%	90 - 110
			Front Half (Nitric) Calcium (Ca)	2022/07/06		95	%	90 - 110
			Front Half (Nitric) Iron (Fe)	2022/07/06		98	%	90 - 110
			Front Half (Nitric) Lithium (Li)	2022/07/06		96	%	90 - 110
			Front Half (Nitric) Magnesium (Mg)	2022/07/06		93	%	90 - 110
			Front Half (Nitric) Silicon (Si)	2022/07/06		96	%	70 - 190
			Front Half (Nitric) Sodium (Na)	2022/07/06		97	%	90 - 110
8082548	SUK	RPD	Front Half (Nitric) Aluminum (Al)	2022/07/06	0.32		%	20
			Front Half (Nitric) Calcium (Ca)	2022/07/06	0.63		%	20
			Front Half (Nitric) Iron (Fe)	2022/07/06	0.10		%	20
			Front Half (Nitric) Lithium (Li)	2022/07/06	0.52		%	20
			Front Half (Nitric) Magnesium (Mg)	2022/07/06	0.32		%	20
			Front Half (Nitric) Silicon (Si)	2022/07/06	0.41		%	20
			Front Half (Nitric) Sodium (Na)	2022/07/06	0.41		%	20
8082548	SUK	Method Blank	Front Half (Nitric) Aluminum (Al)	2022/07/06	ND, RDL=15		ug	
			Front Half (Nitric) Calcium (Ca)	2022/07/06	ND, RDL=30		ug	
			Front Half (Nitric) Iron (Fe)	2022/07/06	ND, RDL=6.0		ug	
			Front Half (Nitric) Lithium (Li)	2022/07/06	ND, RDL=3.0		ug	
			Front Half (Nitric) Magnesium (Mg)	2022/07/06	ND, RDL=20		ug	
			Front Half (Nitric) Silicon (Si)	2022/07/06	ND, RDL=30		ug	
			Front Half (Nitric) Sodium (Na)	2022/07/06	ND, RDL=30		ug	
8082548	SUK	RPD - Sample/Sample Dup	Front Half (Nitric) Aluminum (Al)	2022/07/06	2.6		%	20

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Front Half (Nitric) Calcium (Ca)	2022/07/06	0.67		%	20
			Front Half (Nitric) Iron (Fe)	2022/07/06	1.6		%	20
			Front Half (Nitric) Lithium (Li)	2022/07/06	0.66		%	20
			Front Half (Nitric) Magnesium (Mg)	2022/07/06	2.9		%	20
			Front Half (Nitric) Silicon (Si)	2022/07/06	1.7		%	20
			Front Half (Nitric) Sodium (Na)	2022/07/06	0.39		%	20
8082554	N_R	Matrix Spike(SYG283)	Front Half (Nitric) Antimony (Sb)	2022/06/30		101	%	75 - 125
			Front Half (Nitric) Arsenic (As)	2022/06/30		96	%	75 - 125
			Front Half (Nitric) Barium (Ba)	2022/06/30		101	%	75 - 125
			Front Half (Nitric) Beryllium (Be)	2022/06/30		100	%	75 - 125
			Front Half (Nitric) Boron (B)	2022/06/30		97	%	75 - 125
			Front Half (Nitric) Cadmium (Cd)	2022/06/30		98	%	75 - 125
			Front Half (Nitric) Chromium (Cr)	2022/06/30		96	%	75 - 125
			Front Half (Nitric) Cobalt (Co)	2022/06/30		98	%	75 - 125
			Front Half (Nitric) Copper (Cu)	2022/06/30		101	%	75 - 125
			Front Half (Nitric) Lead (Pb)	2022/06/30		96	%	75 - 125
			Front Half (Nitric) Manganese (Mn)	2022/06/30		99	%	75 - 125
			Front Half (Nitric) Molybdenum (Mo)	2022/06/30		102	%	75 - 125
			Front Half (Nitric) Nickel (Ni)	2022/06/30		98	%	75 - 125
			Front Half (Nitric) Phosphorus (P)	2022/06/30		95	%	75 - 125
			Front Half (Nitric) Selenium (Se)	2022/06/30		95	%	75 - 125
			Front Half (Nitric) Silver (Ag)	2022/06/30		102	%	75 - 125
			Front Half (Nitric) Strontium (Sr)	2022/06/30		100	%	75 - 125
			Front Half (Nitric) Tin (Sn)	2022/06/30		102	%	75 - 125
			Front Half (Nitric) Titanium (Ti)	2022/06/30		97	%	75 - 125
			Front Half (Nitric) Vanadium (V)	2022/06/30		98	%	75 - 125
			Front Half (Nitric) Zinc (Zn)	2022/06/30		93	%	75 - 125
8082554	N_R	MS/MSD RPD	Front Half (Nitric) Antimony (Sb)	2022/06/30	0.13		%	20
			Front Half (Nitric) Arsenic (As)	2022/06/30	0.45		%	20
			Front Half (Nitric) Barium (Ba)	2022/06/30	0.030		%	20
			Front Half (Nitric) Beryllium (Be)	2022/06/30	2.9		%	20
			Front Half (Nitric) Boron (B)	2022/06/30	3.9		%	20
			Front Half (Nitric) Cadmium (Cd)	2022/06/30	0.10		%	20
			Front Half (Nitric) Chromium (Cr)	2022/06/30	0.073		%	20
			Front Half (Nitric) Cobalt (Co)	2022/06/30	1.2		%	20
			Front Half (Nitric) Copper (Cu)	2022/06/30	1.4		%	20
			Front Half (Nitric) Lead (Pb)	2022/06/30	1.4		%	20
			Front Half (Nitric) Manganese (Mn)	2022/06/30	0.52		%	20
			Front Half (Nitric) Molybdenum (Mo)	2022/06/30	0.18		%	20
			Front Half (Nitric) Nickel (Ni)	2022/06/30	0.52		%	20
			Front Half (Nitric) Phosphorus (P)	2022/06/30	0.24		%	20
			Front Half (Nitric) Selenium (Se)	2022/06/30	1.5		%	20
			Front Half (Nitric) Silver (Ag)	2022/06/30	1.0		%	20
			Front Half (Nitric) Strontium (Sr)	2022/06/30	1.1		%	20
			Front Half (Nitric) Tin (Sn)	2022/06/30	0.34		%	20
			Front Half (Nitric) Titanium (Ti)	2022/06/30	0.70		%	20
			Front Half (Nitric) Vanadium (V)	2022/06/30	0.70		%	20
			Front Half (Nitric) Zinc (Zn)	2022/06/30	0.17		%	20
8082554	N_R	Spiked Blank	Front Half (Nitric) Antimony (Sb)	2022/06/30		103	%	85 - 115
			Front Half (Nitric) Arsenic (As)	2022/06/30		97	%	85 - 115

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Front Half (Nitric) Barium (Ba)	2022/06/30		103	%	85 - 115
			Front Half (Nitric) Beryllium (Be)	2022/06/30		104	%	85 - 115
			Front Half (Nitric) Boron (B)	2022/06/30		102	%	85 - 115
			Front Half (Nitric) Cadmium (Cd)	2022/06/30		100	%	85 - 115
			Front Half (Nitric) Chromium (Cr)	2022/06/30		96	%	85 - 115
			Front Half (Nitric) Cobalt (Co)	2022/06/30		98	%	85 - 115
			Front Half (Nitric) Copper (Cu)	2022/06/30		101	%	85 - 115
			Front Half (Nitric) Lead (Pb)	2022/06/30		96	%	85 - 115
			Front Half (Nitric) Manganese (Mn)	2022/06/30		99	%	85 - 115
			Front Half (Nitric) Molybdenum (Mo)	2022/06/30		104	%	85 - 115
			Front Half (Nitric) Nickel (Ni)	2022/06/30		97	%	85 - 115
			Front Half (Nitric) Phosphorus (P)	2022/06/30		97	%	85 - 115
			Front Half (Nitric) Selenium (Se)	2022/06/30		97	%	85 - 115
			Front Half (Nitric) Silver (Ag)	2022/06/30		101	%	85 - 115
			Front Half (Nitric) Strontium (Sr)	2022/06/30		100	%	85 - 115
			Front Half (Nitric) Tin (Sn)	2022/06/30		104	%	85 - 115
			Front Half (Nitric) Titanium (Ti)	2022/06/30		98	%	85 - 115
			Front Half (Nitric) Vanadium (V)	2022/06/30		98	%	85 - 115
			Front Half (Nitric) Zinc (Zn)	2022/06/30		96	%	85 - 115
8082554	N_R	RPD	Front Half (Nitric) Antimony (Sb)	2022/06/30	2.0		%	20
			Front Half (Nitric) Arsenic (As)	2022/06/30	0.18		%	20
			Front Half (Nitric) Barium (Ba)	2022/06/30	0.24		%	20
			Front Half (Nitric) Beryllium (Be)	2022/06/30	0.019		%	20
			Front Half (Nitric) Boron (B)	2022/06/30	0.38		%	20
			Front Half (Nitric) Cadmium (Cd)	2022/06/30	0.53		%	20
			Front Half (Nitric) Chromium (Cr)	2022/06/30	0.26		%	20
			Front Half (Nitric) Cobalt (Co)	2022/06/30	1.5		%	20
			Front Half (Nitric) Copper (Cu)	2022/06/30	0.24		%	20
			Front Half (Nitric) Lead (Pb)	2022/06/30	0.50		%	20
			Front Half (Nitric) Manganese (Mn)	2022/06/30	0.15		%	20
			Front Half (Nitric) Molybdenum (Mo)	2022/06/30	0.048		%	20
			Front Half (Nitric) Nickel (Ni)	2022/06/30	0.67		%	20
			Front Half (Nitric) Phosphorus (P)	2022/06/30	1.2		%	20
			Front Half (Nitric) Selenium (Se)	2022/06/30	0.46		%	20
			Front Half (Nitric) Silver (Ag)	2022/06/30	0.15		%	20
			Front Half (Nitric) Strontium (Sr)	2022/06/30	0.46		%	20
			Front Half (Nitric) Tin (Sn)	2022/06/30	0.26		%	20
			Front Half (Nitric) Titanium (Ti)	2022/06/30	1.9		%	20
			Front Half (Nitric) Vanadium (V)	2022/06/30	0.46		%	20
			Front Half (Nitric) Zinc (Zn)	2022/06/30	0.40		%	20
8082554	N_R	Method Blank	Front Half (Nitric) Antimony (Sb)	2022/06/30	ND, RDL=3.0		ug	
			Front Half (Nitric) Arsenic (As)	2022/06/30	ND, RDL=0.80		ug	
			Front Half (Nitric) Barium (Ba)	2022/06/30	ND, RDL=1.2		ug	
			Front Half (Nitric) Beryllium (Be)	2022/06/30	ND, RDL=0.18		ug	
			Front Half (Nitric) Boron (B)	2022/06/30	ND, RDL=30		ug	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Front Half (Nitric) Cadmium (Cd)	2022/06/30	ND, RDL=0.18		ug	
			Front Half (Nitric) Chromium (Cr)	2022/06/30	ND, RDL=3.0		ug	
			Front Half (Nitric) Cobalt (Co)	2022/06/30	ND, RDL=0.18		ug	
			Front Half (Nitric) Copper (Cu)	2022/06/30	ND, RDL=1.8		ug	
			Front Half (Nitric) Lead (Pb)	2022/06/30	ND, RDL=0.60		ug	
			Front Half (Nitric) Manganese (Mn)	2022/06/30	ND, RDL=1.2		ug	
			Front Half (Nitric) Molybdenum (Mo)	2022/06/30	ND, RDL=1.0		ug	
			Front Half (Nitric) Nickel (Ni)	2022/06/30	ND, RDL=1.0		ug	
			Front Half (Nitric) Phosphorus (P)	2022/06/30	ND, RDL=90		ug	
			Front Half (Nitric) Selenium (Se)	2022/06/30	ND, RDL=2.0		ug	
			Front Half (Nitric) Silver (Ag)	2022/06/30	ND, RDL=0.24		ug	
			Front Half (Nitric) Strontium (Sr)	2022/06/30	ND, RDL=0.90		ug	
			Front Half (Nitric) Tin (Sn)	2022/06/30	ND, RDL=1.2		ug	
			Front Half (Nitric) Titanium (Ti)	2022/06/30	ND, RDL=3.0		ug	
			Front Half (Nitric) Vanadium (V)	2022/06/30	ND, RDL=0.60		ug	
			Front Half (Nitric) Zinc (Zn)	2022/06/30	ND, RDL=10		ug	
8082554	N_R	RPD - Sample/Sample Dup	Front Half (Nitric) Antimony (Sb)	2022/06/30	NC		%	20
			Front Half (Nitric) Arsenic (As)	2022/06/30	NC		%	20
			Front Half (Nitric) Barium (Ba)	2022/06/30	1.6		%	20
			Front Half (Nitric) Beryllium (Be)	2022/06/30	NC		%	20
			Front Half (Nitric) Boron (B)	2022/06/30	NC		%	20
			Front Half (Nitric) Cadmium (Cd)	2022/06/30	2.2		%	20
			Front Half (Nitric) Chromium (Cr)	2022/06/30	0.19		%	20
			Front Half (Nitric) Cobalt (Co)	2022/06/30	NC		%	20
			Front Half (Nitric) Copper (Cu)	2022/06/30	0.79		%	20
			Front Half (Nitric) Lead (Pb)	2022/06/30	0.67		%	20
			Front Half (Nitric) Manganese (Mn)	2022/06/30	1.3		%	20
			Front Half (Nitric) Molybdenum (Mo)	2022/06/30	0.39		%	20
			Front Half (Nitric) Nickel (Ni)	2022/06/30	3.8		%	20
			Front Half (Nitric) Phosphorus (P)	2022/06/30	NC		%	20
			Front Half (Nitric) Selenium (Se)	2022/06/30	NC		%	20
			Front Half (Nitric) Silver (Ag)	2022/06/30	0.44		%	20
			Front Half (Nitric) Strontium (Sr)	2022/06/30	1.6		%	20
			Front Half (Nitric) Tin (Sn)	2022/06/30	1.0		%	20
			Front Half (Nitric) Titanium (Ti)	2022/06/30	NC		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Front Half (Nitric) Vanadium (V)	2022/06/30	NC		%	20
			Front Half (Nitric) Zinc (Zn)	2022/06/30	0.28		%	20
8084197	JWK	Reagent Blank	1B (HF) Mercury (Hg)	2022/07/04	ND, RDL=0.03		ug	
8084197	JWK	Matrix Spike(SYG285)	1B (HF) Mercury (Hg)	2022/07/04		91	%	75 - 125
8084197	JWK	MS/MSD RPD	1B (HF) Mercury (Hg)	2022/07/04	3.7		%	20
8084197	JWK	Spiked Blank	1B (HF) Mercury (Hg)	2022/07/04		98	%	90 - 110
8084197	JWK	RPD	1B (HF) Mercury (Hg)	2022/07/04	0.72		%	20
8084197	JWK	Method Blank	1B (HF) Mercury (Hg)	2022/07/04	ND, RDL=0.03		ug	
8084197	JWK	RPD - Sample/Sample Dup	1B (HF) Mercury (Hg)	2022/07/04	0.63		%	20
8084198	SUK	Matrix Spike(SYG283)	Front Half (HF) Aluminum (Al)	2022/07/06		91	%	80 - 120
			Front Half (HF) Calcium (Ca)	2022/07/06		91	%	80 - 120
			Front Half (HF) Iron (Fe)	2022/07/06		95	%	80 - 120
			Front Half (HF) Lithium (Li)	2022/07/06		97	%	N/A
			Front Half (HF) Magnesium (Mg)	2022/07/06		89	%	80 - 120
			Front Half (HF) Sodium (Na)	2022/07/06		96	%	80 - 120
8084198	SUK	Spiked Blank	Front Half (HF) Aluminum (Al)	2022/07/06		92	%	90 - 110
			Front Half (HF) Calcium (Ca)	2022/07/06		93	%	90 - 110
			Front Half (HF) Iron (Fe)	2022/07/06		101	%	90 - 110
			Front Half (HF) Lithium (Li)	2022/07/06		102	%	90 - 110
			Front Half (HF) Magnesium (Mg)	2022/07/06		91	%	90 - 110
			Front Half (HF) Sodium (Na)	2022/07/06		99	%	90 - 110
8084198	SUK	RPD	Front Half (HF) Aluminum (Al)	2022/07/06	2.2		%	20
			Front Half (HF) Calcium (Ca)	2022/07/06	0		%	20
			Front Half (HF) Iron (Fe)	2022/07/06	4.9		%	20
			Front Half (HF) Lithium (Li)	2022/07/06	4.0		%	20
			Front Half (HF) Magnesium (Mg)	2022/07/06	1.8		%	20
			Front Half (HF) Sodium (Na)	2022/07/06	1.9		%	20
8084198	SUK	Method Blank	Front Half (HF) Aluminum (Al)	2022/07/06	ND, RDL=30		ug	
			Front Half (HF) Calcium (Ca)	2022/07/06	ND, RDL=120		ug	
			Front Half (HF) Iron (Fe)	2022/07/06	ND, RDL=12		ug	
			Front Half (HF) Lithium (Li)	2022/07/06	ND, RDL=6.0		ug	
			Front Half (HF) Magnesium (Mg)	2022/07/06	ND, RDL=40		ug	
			Front Half (HF) Sodium (Na)	2022/07/06	ND, RDL=60		ug	
8084198	SUK	RPD - Sample/Sample Dup	Front Half (HF) Aluminum (Al)	2022/07/06	0.31		%	20
			Front Half (HF) Calcium (Ca)	2022/07/06	NC		%	20
			Front Half (HF) Iron (Fe)	2022/07/06	9.6		%	20
			Front Half (HF) Lithium (Li)	2022/07/06	NC		%	20
			Front Half (HF) Magnesium (Mg)	2022/07/06	NC		%	20
			Front Half (HF) Sodium (Na)	2022/07/06	2.3		%	20
8084207	N_R	Matrix Spike(SYG283)	Front Half (HF) Antimony (Sb)	2022/06/30		103	%	75 - 125
			Front Half (HF) Arsenic (As)	2022/06/30		96	%	75 - 125
			Front Half (HF) Barium (Ba)	2022/06/30		100	%	75 - 125

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Front Half (HF) Beryllium (Be)	2022/06/30		104	%	75 - 125
			Front Half (HF) Boron (B)	2022/06/30		98	%	75 - 125
			Front Half (HF) Cadmium (Cd)	2022/06/30		98	%	75 - 125
			Front Half (HF) Chromium (Cr)	2022/06/30		96	%	75 - 125
			Front Half (HF) Cobalt (Co)	2022/06/30		98	%	75 - 125
			Front Half (HF) Copper (Cu)	2022/06/30		97	%	75 - 125
			Front Half (HF) Lead (Pb)	2022/06/30		94	%	75 - 125
			Front Half (HF) Manganese (Mn)	2022/06/30		98	%	75 - 125
			Front Half (HF) Molybdenum (Mo)	2022/06/30		101	%	75 - 125
			Front Half (HF) Nickel (Ni)	2022/06/30		97	%	75 - 125
			Front Half (HF) Phosphorus (P)	2022/06/30		93	%	75 - 125
			Front Half (HF) Selenium (Se)	2022/06/30		94	%	75 - 125
			Front Half (HF) Silver (Ag)	2022/06/30		101	%	75 - 125
			Front Half (HF) Strontium (Sr)	2022/06/30		99	%	75 - 125
			Front Half (HF) Tin (Sn)	2022/06/30		102	%	75 - 125
			Front Half (HF) Titanium (Ti)	2022/06/30		92	%	75 - 125
			Front Half (HF) Vanadium (V)	2022/06/30		97	%	75 - 125
			Front Half (HF) Zinc (Zn)	2022/06/30		95	%	75 - 125
8084207	N_R	MS/MSD RPD	Front Half (HF) Antimony (Sb)	2022/06/30	1.2		%	20
			Front Half (HF) Arsenic (As)	2022/06/30	1.5		%	20
			Front Half (HF) Barium (Ba)	2022/06/30	0.080		%	20
			Front Half (HF) Beryllium (Be)	2022/06/30	0.64		%	20
			Front Half (HF) Boron (B)	2022/06/30	1.6		%	20
			Front Half (HF) Cadmium (Cd)	2022/06/30	0.11		%	20
			Front Half (HF) Chromium (Cr)	2022/06/30	1.2		%	20
			Front Half (HF) Cobalt (Co)	2022/06/30	1.6		%	20
			Front Half (HF) Copper (Cu)	2022/06/30	0.48		%	20
			Front Half (HF) Lead (Pb)	2022/06/30	1.9		%	20
			Front Half (HF) Manganese (Mn)	2022/06/30	1.4		%	20
			Front Half (HF) Molybdenum (Mo)	2022/06/30	0.56		%	20
			Front Half (HF) Nickel (Ni)	2022/06/30	0.59		%	20
			Front Half (HF) Phosphorus (P)	2022/06/30	0.19		%	20
			Front Half (HF) Selenium (Se)	2022/06/30	1.0		%	20
			Front Half (HF) Silver (Ag)	2022/06/30	0.069		%	20
			Front Half (HF) Strontium (Sr)	2022/06/30	1.4		%	20
			Front Half (HF) Tin (Sn)	2022/06/30	1.3		%	20
			Front Half (HF) Titanium (Ti)	2022/06/30	1.8		%	20
			Front Half (HF) Vanadium (V)	2022/06/30	0.74		%	20
			Front Half (HF) Zinc (Zn)	2022/06/30	1.2		%	20
8084207	N_R	Spiked Blank	Front Half (HF) Antimony (Sb)	2022/06/30		102	%	85 - 115
			Front Half (HF) Arsenic (As)	2022/06/30		97	%	85 - 115
			Front Half (HF) Barium (Ba)	2022/06/30		100	%	85 - 115
			Front Half (HF) Beryllium (Be)	2022/06/30		105	%	85 - 115
			Front Half (HF) Boron (B)	2022/06/30		103	%	85 - 115
			Front Half (HF) Cadmium (Cd)	2022/06/30		98	%	85 - 115
			Front Half (HF) Chromium (Cr)	2022/06/30		97	%	85 - 115
			Front Half (HF) Cobalt (Co)	2022/06/30		99	%	85 - 115
			Front Half (HF) Copper (Cu)	2022/06/30		99	%	85 - 115
			Front Half (HF) Lead (Pb)	2022/06/30		95	%	85 - 115
			Front Half (HF) Manganese (Mn)	2022/06/30		99	%	85 - 115

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Front Half (HF) Molybdenum (Mo)	2022/06/30		101	%	85 - 115
			Front Half (HF) Nickel (Ni)	2022/06/30		97	%	85 - 115
			Front Half (HF) Phosphorus (P)	2022/06/30		99	%	85 - 115
			Front Half (HF) Selenium (Se)	2022/06/30		96	%	85 - 115
			Front Half (HF) Silver (Ag)	2022/06/30		100	%	85 - 115
			Front Half (HF) Strontium (Sr)	2022/06/30		100	%	85 - 115
			Front Half (HF) Tin (Sn)	2022/06/30		101	%	85 - 115
			Front Half (HF) Titanium (Ti)	2022/06/30		94	%	85 - 115
			Front Half (HF) Vanadium (V)	2022/06/30		99	%	85 - 115
			Front Half (HF) Zinc (Zn)	2022/06/30		97	%	85 - 115
8084207	N_R	RPD	Front Half (HF) Antimony (Sb)	2022/06/30	0.27		%	20
			Front Half (HF) Arsenic (As)	2022/06/30	0.33		%	20
			Front Half (HF) Barium (Ba)	2022/06/30	0.35		%	20
			Front Half (HF) Beryllium (Be)	2022/06/30	0.60		%	20
			Front Half (HF) Boron (B)	2022/06/30	2.4		%	20
			Front Half (HF) Cadmium (Cd)	2022/06/30	0.42		%	20
			Front Half (HF) Chromium (Cr)	2022/06/30	0.24		%	20
			Front Half (HF) Cobalt (Co)	2022/06/30	1.4		%	20
			Front Half (HF) Copper (Cu)	2022/06/30	0.73		%	20
			Front Half (HF) Lead (Pb)	2022/06/30	1.4		%	20
			Front Half (HF) Manganese (Mn)	2022/06/30	0.16		%	20
			Front Half (HF) Molybdenum (Mo)	2022/06/30	0.46		%	20
			Front Half (HF) Nickel (Ni)	2022/06/30	0.38		%	20
			Front Half (HF) Phosphorus (P)	2022/06/30	0.40		%	20
			Front Half (HF) Selenium (Se)	2022/06/30	2.1		%	20
			Front Half (HF) Silver (Ag)	2022/06/30	1.4		%	20
			Front Half (HF) Strontium (Sr)	2022/06/30	0.77		%	20
			Front Half (HF) Tin (Sn)	2022/06/30	0.50		%	20
			Front Half (HF) Titanium (Ti)	2022/06/30	1.6		%	20
			Front Half (HF) Vanadium (V)	2022/06/30	0.60		%	20
			Front Half (HF) Zinc (Zn)	2022/06/30	0.41		%	20
8084207	N_R	Method Blank	Front Half (HF) Antimony (Sb)	2022/06/30	ND, RDL=6.0		ug	
			Front Half (HF) Arsenic (As)	2022/06/30	ND, RDL=1.6		ug	
			Front Half (HF) Barium (Ba)	2022/06/30	ND, RDL=2.4		ug	
			Front Half (HF) Beryllium (Be)	2022/06/30	ND, RDL=0.36		ug	
			Front Half (HF) Boron (B)	2022/06/30	ND, RDL=60		ug	
			Front Half (HF) Cadmium (Cd)	2022/06/30	ND, RDL=0.36		ug	
			Front Half (HF) Chromium (Cr)	2022/06/30	ND, RDL=6.0		ug	
			Front Half (HF) Cobalt (Co)	2022/06/30	ND, RDL=0.36		ug	
			Front Half (HF) Copper (Cu)	2022/06/30	ND, RDL=3.6		ug	
			Front Half (HF) Lead (Pb)	2022/06/30	ND, RDL=1.2		ug	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Front Half (HF) Manganese (Mn)	2022/06/30	ND, RDL=2.4		ug	
			Front Half (HF) Molybdenum (Mo)	2022/06/30	ND, RDL=2.0		ug	
			Front Half (HF) Nickel (Ni)	2022/06/30	ND, RDL=2.0		ug	
			Front Half (HF) Phosphorus (P)	2022/06/30	ND, RDL=180		ug	
			Front Half (HF) Selenium (Se)	2022/06/30	ND, RDL=4.0		ug	
			Front Half (HF) Silver (Ag)	2022/06/30	ND, RDL=0.48		ug	
			Front Half (HF) Strontium (Sr)	2022/06/30	ND, RDL=1.8		ug	
			Front Half (HF) Tin (Sn)	2022/06/30	ND, RDL=2.4		ug	
			Front Half (HF) Titanium (Ti)	2022/06/30	ND, RDL=6.0		ug	
			Front Half (HF) Vanadium (V)	2022/06/30	ND, RDL=1.2		ug	
			Front Half (HF) Zinc (Zn)	2022/06/30	ND, RDL=20		ug	
8084207	N_R	RPD - Sample/Sample Dup	Front Half (HF) Antimony (Sb)	2022/06/30	NC		%	20
			Front Half (HF) Arsenic (As)	2022/06/30	NC		%	20
			Front Half (HF) Barium (Ba)	2022/06/30	0.83		%	20
			Front Half (HF) Beryllium (Be)	2022/06/30	NC		%	20
			Front Half (HF) Boron (B)	2022/06/30	NC		%	20
			Front Half (HF) Cadmium (Cd)	2022/06/30	NC		%	20
			Front Half (HF) Chromium (Cr)	2022/06/30	NC		%	20
			Front Half (HF) Cobalt (Co)	2022/06/30	NC		%	20
			Front Half (HF) Copper (Cu)	2022/06/30	NC		%	20
			Front Half (HF) Lead (Pb)	2022/06/30	NC		%	20
			Front Half (HF) Manganese (Mn)	2022/06/30	NC		%	20
			Front Half (HF) Molybdenum (Mo)	2022/06/30	0.041		%	20
			Front Half (HF) Nickel (Ni)	2022/06/30	4.3		%	20
			Front Half (HF) Phosphorus (P)	2022/06/30	NC		%	20
			Front Half (HF) Selenium (Se)	2022/06/30	NC		%	20
			Front Half (HF) Silver (Ag)	2022/06/30	2.9		%	20
			Front Half (HF) Strontium (Sr)	2022/06/30	NC		%	20
			Front Half (HF) Tin (Sn)	2022/06/30	5.9		%	20
			Front Half (HF) Titanium (Ti)	2022/06/30	6.7		%	20
			Front Half (HF) Vanadium (V)	2022/06/30	NC		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Front Half (HF) Zinc (Zn)	2022/06/30	1.1		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

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.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Acrolein Recovery in the Spke was low due to nature of this analyte.This may represent a low bias for this analyte.

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Bureau Veritas Job #: C2G9381
Report Date: 2022/07/06

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865
Sampler Initials: JDF

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Kimberley Linde, Analyst 2

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 Signature Page.

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Chain of Custody Form - AIR

37311

BUREAU VERITAS

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Fax: (905) 817-5777

CAM FCD-01302 /3

Page ____ of ____

CLIENT INFORMATION

Company Name: RWDI
Project Manager: Kirk Easto
e-mail: kirk.easto@rwdi.com
Address: 600 Southgate Dr. Guelph ontario

Phone: 519-100-5221 Fax: ____

SECTION

Sampled by: Mos /00

ANALYSIS REQUESTED

Field Sample ID	Total Volume Sampled	# of samples	Collection Date	Sample Collection Time	USEPA Method 29	USEPA Method 5	Env Canada PM/2	USEPA Method 26	CARB 430 modified	USEPA Method 0030 (VOST)
Stericycle M29 T1→T3		23	06/15-17		✓	✓				
Stericycle M29 Blanks		7			✓	✓				
Stericycle SUOC T1→T3		18					✓			
Stericycle SUOC Blanks		6					✓			
Stericycle M26 T1→T3		6						✓		
" " Blanks		3						✓		
Stericycle CARB 430 T1→T3		3							✓	
" " Blanks		1							✓	
Stericycle VOST T1→T3		3								✓
" " Blank		1								✓

TAT Requirement

STD 10 Business day ☑
Rush 5 Business day * ☐
Rush 2 Business day * ☐
* need approval from Bureau Veritas

PROJECT INFORMATION

Project #: 2202865
Name: Stericycle
PO #: 2202865
BV Quote #:
BV Contact:

REPORTING REQUIREMENTS

Summary Report only ☑
EDD ☐

Regulation ____

Notes

Please note if these samples are "Industrial Hygiene" samples
If submitting dustfall samples, please indicate the diameter of the jar opening in cm.

PROJECT SPECIFIC COMMENTS

M26 - Ammonia, HCl, HF
send results also to Mos@rwdi.com

Client Signature: M Astwell
Affiliation: RWDI
Date/Time: June 17 2022

Received by: DIPIKASINGH
Affiliation: BVlabs
Date/Time: 2022/06/17 17:55

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COC-1031 (11/2019)

12.4 | 12.2 | 14.8

Your P.O. #: 2202865
Your Project #: 2202865
Site Location: STERICYCLE
Your C.O.C. #: 34346

Attention: Kirk Easto

RWDI Air Inc
600 Southgate Drive
Guelph, ON
CANADA N1G 4P6

Report Date: 2022/08/05
Report #: R7241858
Version: 1 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

BUREAU VERITAS JOB #: C2G9416
Received: 2022/06/17, 17:55

Sample Matrix: Stack Sampling Train
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Chlorobenzenes in MM5 Trains (EPA M0010) (1)	4	2022/07/06	2022/07/28	BRL SOP-00202	In house (M0010)
Chlorophenols in MM5 Trains (EPA M0010) (2)	4	2022/07/06	2022/07/15	BRL SOP-00204	In house (M0010)
Dioxins/Furans in Air (Method 23)	4	2022/07/06	2022/07/26	BRL SOP-00404	EPA M23/23A m
PCBs in a Sampling Train (1668Amod) (3)	4	2022/07/28	2022/07/27	BRL SOP-00408	EPA 1668A m

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, MELCC, EPA, APHA.

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.
(1) Analysis was conducted according to Bureau Veritas method BRL SOP-00202 and modified where applicable based on the sample matrix. This test is not Standards Council of Canada accredited for this matrix.
(2) Analysis was conducted according to Bureau Veritas method BRL SOP-00204 and modified where applicable based on the sample matrix. This test is not Standards Council of Canada accredited for this matrix.
(3) Analysis was conducted according to Bureau Veritas method BRL SOP-00408 and modified where applicable based on the sample matrix. This test is not Standards Council of Canada accredited for this matrix.

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Your P.O. #: 2202865
Your Project #: 2202865
Site Location: STERICYCLE
Your C.O.C. #: 34346

Attention: Kirk Easto

RWDI Air Inc
600 Southgate Drive
Guelph, ON
CANADA N1G 4P6

Report Date: 2022/08/05
Report #: R7241858
Version: 1 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

BUREAU VERITAS JOB #: C2G9416
Received: 2022/06/17, 17:55

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769
==========
This report has been generated and distributed using a secure automated process.
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For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG390						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- BLANK	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
NDMA/D/F/MIB/GEO								
33'44'-TetraCB-(77)	ng	ND	0.066	0.60	0.00010	0.0000066		8135911
344'5-TetraCB-(81)	ng	ND	0.062	0.60	0.00030	0.000019		8135911
233'44'-PentaCB-(105)	ng	ND	0.024	0.60	0.000030	0.00000072		8135911
2344'5-PentaCB-(114)	ng	ND	0.024	0.60	0.000030	0.00000072		8135911
23'44'5-PentaCB-(118)	ng	0.13	0.024	0.60	0.000030	0.0000039		8135911
23'44'5'-PentaCB-(123)	ng	ND	0.026	0.60	0.000030	0.00000078		8135911
33'44'5-PentaCB-(126)	ng	ND	0.023	0.60	0.10	0.0023		8135911
HexaCB-(156)+(157)	ng	ND	0.036	1.2	0.000030	0.0000011		8135911
23'44'55'-HexaCB-(167)	ng	ND	0.035	0.60	0.000030	0.0000011		8135911
33'44'55'-HexaCB-(169)	ng	ND	0.036	0.60	0.030	0.0011		8135911
233'44'55'-HeptaCB-(189)	ng	ND	0.048	0.60	0.000030	0.0000014		8135911
Monochlorobiphenyl	ng	ND	0.019	N/A			0	8135911
Dichlorobiphenyl	ng	ND	0.031	N/A			0	8135911
Trichlorobiphenyl	ng	ND	0.075	N/A			0	8135911
Tetrachlorobiphenyl	ng	0.12	0.076	N/A			1	8135911
Pentachlorobiphenyl	ng	0.24	0.036	N/A			2	8135911
Hexachlorobiphenyl	ng	0.40	0.086	N/A			2	8135911
Heptachlorobiphenyl	ng	ND	0.052	N/A			0	8135911
Octachlorobiphenyl	ng	ND	0.062	N/A			0	8135911
Nonachlorobiphenyl	ng	ND	0.063	N/A			0	8135911
Decachlorobiphenyl	ng	ND	0.056	N/A			0	8135911
Total PCB	ng	0.76	N/A	N/A				8135911
TOTAL TOXIC EQUIVALENCY	ng					0.0034		
Surrogate Recovery (%)								
C13-233'44'55'-HeptaCB-(189)	%	81						8135911
C13-233'44'5-HexaCB-(156)	%	82						8135911

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

N/A = Not Applicable

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RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG390						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- BLANK	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-233'44'5'-HexaCB-(157)	%	82						8135911
C13-233'44'-PentaCB-(105)	%	75						8135911
C13-23'44'55'-HexaCB-(167)	%	81						8135911
C13-2344'5-PentaCB-(114)	%	65						8135911
C13-23'44'5-PentaCB-(118)	%	71						8135911
C13-2'344'5-PentaCB-(123)	%	71						8135911
C13-33'44'55'-HexaCB-(169)	%	72						8135911
C13-33'44'5-PentaCB-(126)	%	70						8135911
C13-33'44'-TetraCB-(77)	%	63						8135911
C13-344'5-TetraCB-(81)	%	58						8135911

EDL = Estimated Detection Limit

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RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG391						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 1	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
NDMA/D/F/MIB/GEO								
33'44'-TetraCB-(77)	ng	6.4	0.070	0.60	0.00010	0.00064		8135911
344'5-TetraCB-(81)	ng	ND (1)	0.16	0.60	0.00030	0.000048		8135911
233'44'-PentaCB-(105)	ng	15	0.037	0.60	0.000030	0.00045		8135911
2344'5-PentaCB-(114)	ng	0.94	0.037	0.60	0.000030	0.000028		8135911
23'44'5-PentaCB-(118)	ng	40	0.036	0.60	0.000030	0.0012		8135911
23'44'5'-PentaCB-(123)	ng	0.47	0.040	0.60	0.000030	0.000014		8135911
33'44'5-PentaCB-(126)	ng	0.57	0.036	0.60	0.10	0.057		8135911
HexaCB-(156)+(157)	ng	3.2	0.041	1.2	0.000030	0.000096		8135911
23'44'55'-HexaCB-(167)	ng	1.3	0.040	0.60	0.000030	0.000039		8135911
33'44'55'-HexaCB-(169)	ng	ND	0.041	0.60	0.030	0.0012		8135911
233'44'55'-HeptaCB-(189)	ng	ND	0.076	0.60	0.000030	0.0000023		8135911
Monochlorobiphenyl	ng	0.51	0.028	N/A			2	8135911
Dichlorobiphenyl	ng	1.2	0.031	N/A			2	8135911
Trichlorobiphenyl	ng	1.9	0.064	N/A			7	8135911
Tetrachlorobiphenyl	ng	22	0.12	N/A			12	8135911
Pentachlorobiphenyl	ng	180	0.085	N/A			19	8135911
Hexachlorobiphenyl	ng	150	0.14	N/A			21	8135911
Heptachlorobiphenyl	ng	12	0.081	N/A			12	8135911
Octachlorobiphenyl	ng	0.35	0.086	N/A			1	8135911
Nonachlorobiphenyl	ng	ND	0.10	N/A			0	8135911
Decachlorobiphenyl	ng	ND	0.14	N/A			0	8135911
Total PCB	ng	370	N/A	N/A				8135911
TOTAL TOXIC EQUIVALENCY	ng					0.061		
Surrogate Recovery (%)								
C13-233'44'55'-HeptaCB-(189)	%	89						8135911

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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QC Batch = Quality Control Batch

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N/A = Not Applicable

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/05

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG391						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 1	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-233'44'5-HexaCB-(156)	%	69						8135911
C13-233'44'5'-HexaCB-(157)	%	69						8135911
C13-233'44'-PentaCB-(105)	%	69						8135911
C13-23'44'55'-HexaCB-(167)	%	72						8135911
C13-2344'5-PentaCB-(114)	%	64						8135911
C13-23'44'5-PentaCB-(118)	%	73						8135911
C13-2'344'5-PentaCB-(123)	%	73						8135911
C13-33'44'55'-HexaCB-(169)	%	54						8135911
C13-33'44'5-PentaCB-(126)	%	61						8135911
C13-33'44'-TetraCB-(77)	%	64						8135911
C13-344'5-TetraCB-(81)	%	64						8135911

EDL = Estimated Detection Limit

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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

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RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG392						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 2	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
NDMA/D/F/MIB/GEO								
33'44'-TetraCB-(77)	ng	75	0.062	0.60	0.00010	0.0075		8135911
344'5-TetraCB-(81)	ng	3.2	0.058	0.60	0.00030	0.00096		8135911
233'44'-PentaCB-(105)	ng	150	0.059	0.60	0.000030	0.0045		8135911
2344'5-PentaCB-(114)	ng	9.6	0.060	0.60	0.000030	0.00029		8135911
23'44'5-PentaCB-(118)	ng	440	0.058	0.60	0.000030	0.013		8135911
23'44'5'-PentaCB-(123)	ng	6.0	0.065	0.60	0.000030	0.00018		8135911
33'44'5-PentaCB-(126)	ng	3.3	0.058	0.60	0.10	0.33		8135911
HexaCB-(156)+(157)	ng	29	0.058	1.2	0.000030	0.00087		8135911
23'44'55'-HexaCB-(167)	ng	12	0.057	0.60	0.000030	0.00036		8135911
33'44'55'-HexaCB-(169)	ng	ND	0.058	0.60	0.030	0.0017		8135911
233'44'55'-HeptaCB-(189)	ng	0.39	0.053	0.60	0.000030	0.000012		8135911
Monochlorobiphenyl	ng	1.8	0.018	N/A			3	8135911
Dichlorobiphenyl	ng	22	0.058	N/A			3	8135911
Trichlorobiphenyl	ng	23	0.060	N/A			12	8135911
Tetrachlorobiphenyl	ng	330	0.083	N/A			20	8135911
Pentachlorobiphenyl	ng	2300	0.065	N/A			24	8135911
Hexachlorobiphenyl	ng	1500	0.54	N/A			24	8135911
Heptachlorobiphenyl	ng	110	0.056	N/A			18	8135911
Octachlorobiphenyl	ng	9.6	0.061	N/A			9	8135911
Nonachlorobiphenyl	ng	1.7	0.064	N/A			3	8135911
Decachlorobiphenyl	ng	0.25	0.061	N/A			1	8135911
Total PCB	ng	4300	N/A	N/A				8135911
TOTAL TOXIC EQUIVALENCY	ng					0.36		
Surrogate Recovery (%)								
C13-233'44'55'-HeptaCB-(189)	%	85						8135911
C13-233'44'5-HexaCB-(156)	%	84						8135911

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/05

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG392						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 2	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-233'44'5'-HexaCB-(157)	%	84						8135911
C13-233'44'-PentaCB-(105)	%	92						8135911
C13-23'44'55'-HexaCB-(167)	%	92						8135911
C13-2344'5-PentaCB-(114)	%	86						8135911
C13-23'44'5-PentaCB-(118)	%	97						8135911
C13-2'344'5-PentaCB-(123)	%	96						8135911
C13-33'44'55'-HexaCB-(169)	%	75						8135911
C13-33'44'5-PentaCB-(126)	%	86						8135911
C13-33'44'-TetraCB-(77)	%	82						8135911
C13-344'5-TetraCB-(81)	%	83						8135911

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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/05

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG393						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 3	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
NDMA/D/F/MIB/GEO								
33'44'-TetraCB-(77)	ng	74	0.038	0.60	0.00010	0.0074		8135911
344'5-TetraCB-(81)	ng	3.4	0.036	0.60	0.00030	0.0010		8135911
233'44'-PentaCB-(105)	ng	150	0.092	0.60	0.000030	0.0045		8135911
2344'5-PentaCB-(114)	ng	9.2	0.094	0.60	0.000030	0.00028		8135911
23'44'5-PentaCB-(118)	ng	430	0.091	0.60	0.000030	0.013		8135911
23'44'5'-PentaCB-(123)	ng	9.3	0.10	0.60	0.000030	0.00028		8135911
33'44'5-PentaCB-(126)	ng	3.6	0.090	0.60	0.10	0.36		8135911
HexaCB-(156)+(157)	ng	29	0.059	1.2	0.000030	0.00087		8135911
23'44'55'-HexaCB-(167)	ng	12	0.059	0.60	0.000030	0.00036		8135911
33'44'55'-HexaCB-(169)	ng	ND	0.060	0.60	0.030	0.0018		8135911
233'44'55'-HeptaCB-(189)	ng	0.33	0.051	0.60	0.000030	0.0000099		8135911
Monochlorobiphenyl	ng	3.7	0.021	N/A			3	8135911
Dichlorobiphenyl	ng	24	0.054	N/A			5	8135911
Trichlorobiphenyl	ng	26	0.072	N/A			15	8135911
Tetrachlorobiphenyl	ng	350	0.085	N/A			24	8135911
Pentachlorobiphenyl	ng	2300	0.10	N/A			25	8135911
Hexachlorobiphenyl	ng	1600	0.28	N/A			27	8135911
Heptachlorobiphenyl	ng	110	0.070	N/A			18	8135911
Octachlorobiphenyl	ng	9.6	0.092	N/A			9	8135911
Nonachlorobiphenyl	ng	2.0	0.077	N/A			3	8135911
Decachlorobiphenyl	ng	0.24	0.074	N/A			1	8135911
Total PCB	ng	4400	N/A	N/A				8135911
TOTAL TOXIC EQUIVALENCY	ng					0.39		
Surrogate Recovery (%)								
C13-233'44'55'-HeptaCB-(189)	%	91						8135911
C13-233'44'5-HexaCB-(156)	%	82						8135911

EDL = Estimated Detection Limit
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QC Batch = Quality Control Batch

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

N/A = Not Applicable

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Report Date: 2022/08/05

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG393						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 3	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-233'44'5'-HexaCB-(157)	%	82						8135911
C13-233'44'-PentaCB-(105)	%	89						8135911
C13-23'44'55'-HexaCB-(167)	%	88						8135911
C13-2344'5-PentaCB-(114)	%	88						8135911
C13-23'44'5-PentaCB-(118)	%	95						8135911
C13-2'344'5-PentaCB-(123)	%	94						8135911
C13-33'44'55'-HexaCB-(169)	%	62						8135911
C13-33'44'5-PentaCB-(126)	%	79						8135911
C13-33'44'-TetraCB-(77)	%	74						8135911
C13-344'5-TetraCB-(81)	%	78						8135911

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG390	SYG391	SYG392	SYG393		
Sampling Date		2022/06/17	2022/06/17	2022/06/17	2022/06/17		
COC Number		34346	34346	34346	34346		
	UNITS	**SVOC- BLANK**	**SVOC- TEST 1**	**SVOC- TEST 2**	**SVOC- TEST 3**	**RDL**	**QC Batch**
Chlorobenzenes							
1,2,3,4-Tetrachlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,2,3,5+1,2,4,5-Tetrachlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,2,3-Trichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,2,4-Trichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,2-Dichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,3,5-Trichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,3-Dichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,4-Dichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
Hexachlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
Pentachlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
Phenolics							
2,3,4,5-Tetrachlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3,4,6-Tetrachlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3,4-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3,5,6-Tetrachlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3,5-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3,6-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3-Dichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,4 + 2,5-Dichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,4,5-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,4,6-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,6-Dichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2-Chlorophenol	ug	ND	ND	ND	ND	0.30	8093102
3,4,5-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
3,4-Dichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
3,5-Dichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
3-Chlorophenol	ug	ND	ND	ND	ND	0.30	8093102
4-Chlorophenol	ug	ND	ND	ND	ND	0.30	8093102
Pentachlorophenol	ug	ND	ND	ND	ND	0.30	8093102
Surrogate Recovery (%)							
13C6-Hexachlorobenzene	%	89	83	84	85		8093092
2H3-1,2,3-Trichlorobenzene (FS)	%	88	83	80	79		8093092
2H3-1,2,4-Trichlorobenzene	%	76	68	68	67		8093092

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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SEMI-VOLATILE ORGANICS BY GC-MS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG390	SYG391	SYG392	SYG393		
Sampling Date		2022/06/17	2022/06/17	2022/06/17	2022/06/17		
COC Number		34346	34346	34346	34346		
	UNITS	**SVOC- BLANK**	**SVOC- TEST 1**	**SVOC- TEST 2**	**SVOC- TEST 3**	**RDL**	**QC Batch**
2H4-1,3-Dichlorobenzene	%	70	58	57	58		8093092
2H4-1,4-Dichlorobenzene (FS)	%	84	72	70	58		8093092
D3-2,4-Dichlorophenol	%	77	95	88	100		8093102
D6-Pentachlorophenol	%	78	105	93	108		8093102

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG390						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- BLANK	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Dioxins & Furans								
2,3,7,8-Tetra CDD *	pg	ND	8.6	60	1.00	8.60		8112252
1,2,3,7,8-Penta CDD *	pg	ND	10	60	1.00	10.0		8112252
1,2,3,4,7,8-Hexa CDD *	pg	ND	8.2	60	0.100	0.820		8112252
1,2,3,6,7,8-Hexa CDD *	pg	ND	7.1	60	0.100	0.710		8112252
1,2,3,7,8,9-Hexa CDD *	pg	ND	7.6	60	0.100	0.760		8112252
1,2,3,4,6,7,8-Hepta CDD *	pg	ND	7.5	60	0.0100	0.0750		8112252
1,2,3,4,6,7,8,9-Octa CDD *	pg	ND	8.8	600	0.000300	0.00264		8112252
Total Tetra CDD *	pg	ND	8.6	60			0	8112252
Total Penta CDD *	pg	ND	10	60			0	8112252
Total Hexa CDD *	pg	ND	7.6	60			0	8112252
Total Hepta CDD *	pg	ND	7.5	60			0	8112252
2,3,7,8-Tetra CDF **	pg	ND	9.7	60	0.100	0.970		8112252
1,2,3,7,8-Penta CDF **	pg	ND	9.1	60	0.0300	0.273		8112252
2,3,4,7,8-Penta CDF **	pg	ND	9.0	60	0.300	2.70		8112252
1,2,3,4,7,8-Hexa CDF **	pg	ND	7.1	60	0.100	0.710		8112252
1,2,3,6,7,8-Hexa CDF **	pg	ND	6.5	60	0.100	0.650		8112252
2,3,4,6,7,8-Hexa CDF **	pg	ND	7.4	60	0.100	0.740		8112252
1,2,3,7,8,9-Hexa CDF **	pg	ND	8.1	60	0.100	0.810		8112252
1,2,3,4,6,7,8-Hepta CDF **	pg	ND	6.5	60	0.0100	0.0650		8112252
1,2,3,4,7,8,9-Hepta CDF **	pg	ND	8.2	60	0.0100	0.0820		8112252
1,2,3,4,6,7,8,9-Octa CDF **	pg	ND	8.4	600	0.000300	0.00252		8112252
Total Tetra CDF **	pg	ND	9.7	60			0	8112252
Total Penta CDF **	pg	ND	9.0	60			0	8112252
Total Hexa CDF **	pg	ND	7.2	60			0	8112252
Total Hepta CDF **	pg	ND	7.3	60			0	8112252
TOTAL TOXIC EQUIVALENCY	pg					28.0		

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG390						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- BLANK	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)								
C13-1234678 HeptaCDD *	%	96						8112252
C13-1234678 HeptaCDF **	%	84						8112252
C13-123478 HexaCDD *	%	107						8112252
C13-123478 HexaCDF **	%	112						8112252
C13-1234789 HeptaCDF **	%	102						8112252
C13-123678 HexaCDD *	%	103						8112252
C13-123678 HexaCDF **	%	70						8112252
C13-12378 PentaCDD *	%	105						8112252
C13-12378 PentaCDF **	%	91						8112252
C13-123789 HexaCDF **	%	90						8112252
C13-23478 PentaCDF **	%	106						8112252
C13-2378 TetraCDD *	%	109						8112252
C13-2378 TetraCDF **	%	94						8112252
C13-Octachlorodibenzo-p-Dioxin	%	77						8112252
Cl37-2378 TetraCDD *	%	89						8112252

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG391						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 1	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Dioxins & Furans								
2,3,7,8-Tetra CDD *	pg	ND	11	60	1.00	11.0		8112252
1,2,3,7,8-Penta CDD *	pg	ND	9.1	60	1.00	9.10		8112252
1,2,3,4,7,8-Hexa CDD *	pg	ND	7.7	60	0.100	0.770		8112252
1,2,3,6,7,8-Hexa CDD *	pg	ND	6.8	60	0.100	0.680		8112252
1,2,3,7,8,9-Hexa CDD *	pg	ND	7.2	60	0.100	0.720		8112252
1,2,3,4,6,7,8-Hepta CDD *	pg	ND	9.0	60	0.0100	0.0900		8112252
1,2,3,4,6,7,8,9-Octa CDD *	pg	ND	12	600	0.000300	0.00360		8112252
Total Tetra CDD *	pg	ND	11	60			0	8112252
Total Penta CDD *	pg	ND	9.1	60			0	8112252
Total Hexa CDD *	pg	ND	7.2	60			0	8112252
Total Hepta CDD *	pg	ND	9.0	60			0	8112252
2,3,7,8-Tetra CDF **	pg	ND	9.7	60	0.100	0.970		8112252
1,2,3,7,8-Penta CDF **	pg	ND	9.7	60	0.0300	0.291		8112252
2,3,4,7,8-Penta CDF **	pg	ND	9.6	60	0.300	2.88		8112252
1,2,3,4,7,8-Hexa CDF **	pg	ND	6.8	60	0.100	0.680		8112252
1,2,3,6,7,8-Hexa CDF **	pg	ND	6.2	60	0.100	0.620		8112252
2,3,4,6,7,8-Hexa CDF **	pg	ND	7.1	60	0.100	0.710		8112252
1,2,3,7,8,9-Hexa CDF **	pg	ND	7.8	60	0.100	0.780		8112252
1,2,3,4,6,7,8-Hepta CDF **	pg	ND	9.2	60	0.0100	0.0920		8112252
1,2,3,4,7,8,9-Hepta CDF **	pg	ND	12	60	0.0100	0.120		8112252
1,2,3,4,6,7,8,9-Octa CDF **	pg	ND	12	600	0.000300	0.00360		8112252
Total Tetra CDF **	pg	ND	9.7	60			0	8112252
Total Penta CDF **	pg	ND	9.6	60			0	8112252
Total Hexa CDF **	pg	ND	6.9	60			0	8112252
Total Hepta CDF **	pg	ND	10	60			0	8112252
TOTAL TOXIC EQUIVALENCY	pg					29.5		

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.
** CDF = Chloro Dibenzo-p-Furan

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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/05

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG391						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 1	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)								
C13-1234678 HeptaCDD *	%	88						8112252
C13-1234678 HeptaCDF **	%	75						8112252
C13-123478 HexaCDD *	%	105						8112252
C13-123478 HexaCDF **	%	115						8112252
C13-1234789 HeptaCDF **	%	98						8112252
C13-123678 HexaCDD *	%	103						8112252
C13-123678 HexaCDF **	%	67						8112252
C13-12378 PentaCDD *	%	100						8112252
C13-12378 PentaCDF **	%	89						8112252
C13-123789 HexaCDF **	%	92						8112252
C13-23478 PentaCDF **	%	103						8112252
C13-2378 TetraCDD *	%	106						8112252
C13-2378 TetraCDF **	%	89						8112252
C13-Octachlorodibenzo-p-Dioxin	%	59						8112252
Cl37-2378 TetraCDD *	%	91						8112252

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG392						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 2	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Dioxins & Furans								
2,3,7,8-Tetra CDD *	pg	ND	11	60	1.00	11.0		8112252
1,2,3,7,8-Penta CDD *	pg	ND	8.2	60	1.00	8.20		8112252
1,2,3,4,7,8-Hexa CDD *	pg	ND	8.6	60	0.100	0.860		8112252
1,2,3,6,7,8-Hexa CDD *	pg	ND	7.5	60	0.100	0.750		8112252
1,2,3,7,8,9-Hexa CDD *	pg	ND	8.0	60	0.100	0.800		8112252
1,2,3,4,6,7,8-Hepta CDD *	pg	ND	6.9	60	0.0100	0.0690		8112252
1,2,3,4,6,7,8,9-Octa CDD *	pg	22	10	600	0.000300	0.00660		8112252
Total Tetra CDD *	pg	60	11	60			2	8112252
Total Penta CDD *	pg	ND (1)	27	60			0	8112252
Total Hexa CDD *	pg	20.7	8.0	60			1	8112252
Total Hepta CDD *	pg	ND (2)	12	60			0	8112252
2,3,7,8-Tetra CDF **	pg	17	11	60	0.100	1.70		8112252
1,2,3,7,8-Penta CDF **	pg	ND	9.9	60	0.0300	0.297		8112252
2,3,4,7,8-Penta CDF **	pg	ND	9.9	60	0.300	2.97		8112252
1,2,3,4,7,8-Hexa CDF **	pg	ND	11	60	0.100	1.10		8112252
1,2,3,6,7,8-Hexa CDF **	pg	ND	9.7	60	0.100	0.970		8112252
2,3,4,6,7,8-Hexa CDF **	pg	ND	11	60	0.100	1.10		8112252
1,2,3,7,8,9-Hexa CDF **	pg	ND	12	60	0.100	1.20		8112252
1,2,3,4,6,7,8-Hepta CDF **	pg	ND	8.8	60	0.0100	0.0880		8112252
1,2,3,4,7,8,9-Hepta CDF **	pg	ND	11	60	0.0100	0.110		8112252
1,2,3,4,6,7,8,9-Octa CDF **	pg	ND	12	600	0.000300	0.00360		8112252

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG392						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 2	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Total Tetra CDF **	pg	37	11	60			2	8112252
Total Penta CDF **	pg	ND (1)	17	60			0	8112252
Total Hexa CDF **	pg	ND	11	60			0	8112252
Total Hepta CDF **	pg	ND	9.8	60			0	8112252
TOTAL TOXIC EQUIVALENCY	pg					31.2		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD *	%	66						8112252
C13-1234678 HeptaCDF **	%	57						8112252
C13-123478 HexaCDD *	%	117						8112252
C13-123478 HexaCDF **	%	117						8112252
C13-1234789 HeptaCDF **	%	94						8112252
C13-123678 HexaCDD *	%	79						8112252
C13-123678 HexaCDF **	%	55						8112252
C13-12378 PentaCDD *	%	86						8112252
C13-12378 PentaCDF **	%	72						8112252
C13-123789 HexaCDF **	%	75						8112252
C13-23478 PentaCDF **	%	107						8112252
C13-2378 TetraCDD *	%	86						8112252
C13-2378 TetraCDF **	%	71						8112252
C13-Octachlorodibenzo-p-Dioxin	%	42						8112252
Cl37-2378 TetraCDD *	%	88						8112252

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

** CDF = Chloro Dibenzo-p-Furan

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

* CDD = Chloro Dibenzo-p-Dioxin

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG393						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 3	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Dioxins & Furans								
2,3,7,8-Tetra CDD *	pg	ND	9.4	60	1.00	9.40		8112252
1,2,3,7,8-Penta CDD *	pg	ND	16	60	1.00	16.0		8112252
1,2,3,4,7,8-Hexa CDD *	pg	ND	15	60	0.100	1.50		8112252
1,2,3,6,7,8-Hexa CDD *	pg	ND	13	60	0.100	1.30		8112252
1,2,3,7,8,9-Hexa CDD *	pg	ND	13	60	0.100	1.30		8112252
1,2,3,4,6,7,8-Hepta CDD *	pg	ND	10	60	0.0100	0.100		8112252
1,2,3,4,6,7,8,9-Octa CDD *	pg	ND	18	600	0.000300	0.00540		8112252
Total Tetra CDD *	pg	68.3	9.4	60			2	8112252
Total Penta CDD *	pg	ND (1)	35	60			0	8112252
Total Hexa CDD *	pg	ND	14	60			0	8112252
Total Hepta CDD *	pg	ND	10	60			0	8112252
2,3,7,8-Tetra CDF **	pg	ND	8.3	60	0.100	0.830		8112252
1,2,3,7,8-Penta CDF **	pg	ND	9.8	60	0.0300	0.294		8112252
2,3,4,7,8-Penta CDF **	pg	ND	9.7	60	0.300	2.91		8112252
1,2,3,4,7,8-Hexa CDF **	pg	ND	12	60	0.100	1.20		8112252
1,2,3,6,7,8-Hexa CDF **	pg	ND	11	60	0.100	1.10		8112252
2,3,4,6,7,8-Hexa CDF **	pg	ND	13	60	0.100	1.30		8112252
1,2,3,7,8,9-Hexa CDF **	pg	ND	14	60	0.100	1.40		8112252
1,2,3,4,6,7,8-Hepta CDF **	pg	ND	7.6	60	0.0100	0.0760		8112252
1,2,3,4,7,8,9-Hepta CDF **	pg	ND	9.5	60	0.0100	0.0950		8112252
1,2,3,4,6,7,8,9-Octa CDF **	pg	ND	19	600	0.000300	0.00570		8112252

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG393						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 3	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Total Tetra CDF **	pg	ND	8.3	60			0	8112252
Total Penta CDF **	pg	ND	9.8	60			0	8112252
Total Hexa CDF **	pg	ND	13	60			0	8112252
Total Hepta CDF **	pg	ND	8.5	60			0	8112252
TOTAL TOXIC EQUIVALENCY	pg					38.8		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD *	%	55						8112252
C13-1234678 HeptaCDF **	%	49						8112252
C13-123478 HexaCDD *	%	102						8112252
C13-123478 HexaCDF **	%	117						8112252
C13-1234789 HeptaCDF **	%	85						8112252
C13-123678 HexaCDD *	%	87						8112252
C13-123678 HexaCDF **	%	51						8112252
C13-12378 PentaCDD *	%	70						8112252
C13-12378 PentaCDF **	%	55						8112252
C13-123789 HexaCDF **	%	71						8112252
C13-23478 PentaCDF **	%	117						8112252
C13-2378 TetraCDD *	%	83						8112252
C13-2378 TetraCDF **	%	70						8112252
C13-Octachlorodibenzo-p-Dioxin	%	31						8112252
Cl37-2378 TetraCDD *	%	86						8112252

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

** CDF = Chloro Dibenzo-p-Furan

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

* CDD = Chloro Dibenzo-p-Dioxin

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8093092	13C6-Hexachlorobenzene	2022/07/28	86	30 - 130	88	%		
8093092	2H3-1,2,4-Trichlorobenzene	2022/07/28	64	30 - 130	69	%		
8093092	2H4-1,3-Dichlorobenzene	2022/07/28	67	30 - 130	67	%		
8093102	D3-2,4-Dichlorophenol	2022/07/15	96	20 - 130	125	%		
8112252	C13-1234678 HeptaCDD	2022/07/20	80	25 - 130	77	%		
8112252	C13-1234678 HeptaCDF	2022/07/20	76	25 - 130	71	%		
8112252	C13-123678 HexaCDD	2022/07/20	104	40 - 130	106	%		
8112252	C13-123678 HexaCDF	2022/07/20	80	40 - 130	74	%		
8112252	C13-12378 PentaCDD	2022/07/20	101	40 - 130	91	%		
8112252	C13-12378 PentaCDF	2022/07/20	81	40 - 130	74	%		
8112252	C13-123789 HexaCDF	2022/07/20	75	40 - 130	81	%		
8112252	C13-2378 TetraCDD	2022/07/20	104	40 - 130	99	%		
8112252	C13-2378 TetraCDF	2022/07/20	90	40 - 130	82	%		
8112252	C13-Octachlorodibenzo-p-Dioxin	2022/07/20	44	25 - 130	43	%		
8135911	C13-233'44'55'-HeptaCB-(189)	2022/07/27	86	30 - 140	90	%		
8135911	C13-233'44'5-HexaCB-(156)	2022/07/27	77	30 - 140	81	%		
8135911	C13-233'44'5'-HexaCB-(157)	2022/07/27	77	30 - 140	81	%		
8135911	C13-233'44'-PentaCB-(105)	2022/07/27	74	30 - 140	76	%		
8135911	C13-23'44'55'-HexaCB-(167)	2022/07/27	78	30 - 140	82	%		
8135911	C13-2344'5-PentaCB-(114)	2022/07/27	60	30 - 140	64	%		
8135911	C13-23'44'5-PentaCB-(118)	2022/07/27	70	30 - 140	72	%		
8135911	C13-2'344'5-PentaCB-(123)	2022/07/27	71	30 - 140	68	%		
8135911	C13-33'44'55'-HexaCB-(169)	2022/07/27	63	30 - 140	72	%		
8135911	C13-33'44'5-PentaCB-(126)	2022/07/27	69	30 - 140	67	%		
8135911	C13-33'44'-TetraCB-(77)	2022/07/27	61	30 - 140	60	%		
8135911	C13-344'5-TetraCB-(81)	2022/07/27	58	30 - 140	56	%		
8093092	1,2,3,4-Tetrachlorobenzene	2022/07/28	81	50 - 150	ND, RDL=0.30	ug	3.1	50
8093092	1,2,3,5+1,2,4,5-Tetrachlorobenzene	2022/07/28	78	50 - 150	ND, RDL=0.30	ug	5.2	50
8093092	1,2,3-Trichlorobenzene	2022/07/28	77	50 - 150	ND, RDL=0.30	ug	3.9	50
8093092	1,2,4-Trichlorobenzene	2022/07/28	65	50 - 150	ND, RDL=0.30	ug	2.4	50
8093092	1,2-Dichlorobenzene	2022/07/28	70	50 - 150	ND, RDL=0.30	ug	1.8	50

QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8093092	1,3,5-Trichlorobenzene	2022/07/28	71	50 - 150	ND, RDL=0.30	ug	3.1	50
8093092	1,3-Dichlorobenzene	2022/07/28	67	50 - 150	ND, RDL=0.30	ug	6.2	50
8093092	1,4-Dichlorobenzene	2022/07/28	93	50 - 150	ND, RDL=0.30	ug	0.36	50
8093092	Hexachlorobenzene	2022/07/28	77	50 - 150	ND, RDL=0.30	ug	2.4	50
8093092	Pentachlorobenzene	2022/07/28	79	50 - 150	ND, RDL=0.30	ug	6.7	50
8093102	2,3,4,5-Tetrachlorophenol	2022/07/15	107	22 - 134	ND, RDL=0.30	ug	5.5	50
8093102	2,3,4,6-Tetrachlorophenol	2022/07/15	114	22 - 134	ND, RDL=0.30	ug	7.7	50
8093102	2,3,4-Trichlorophenol	2022/07/15	115	22 - 134	ND, RDL=0.30	ug	8.6	50
8093102	2,3,5,6-Tetrachlorophenol	2022/07/15	125	22 - 134	ND, RDL=0.30	ug	8.1	50
8093102	2,3,5-Trichlorophenol	2022/07/15	107	22 - 134	ND, RDL=0.30	ug	8.9	50
8093102	2,3,6-Trichlorophenol	2022/07/15	108	22 - 134	ND, RDL=0.30	ug	8.5	50
8093102	2,3-Dichlorophenol	2022/07/15	102	22 - 134	ND, RDL=0.30	ug	9.2	50
8093102	2,4 + 2,5-Dichlorophenol	2022/07/15	102	22 - 134	ND, RDL=0.30	ug	9.9	50
8093102	2,4,5-Trichlorophenol	2022/07/15	112	22 - 134	ND, RDL=0.30	ug	9.3	50
8093102	2,4,6-Trichlorophenol	2022/07/15	110	22 - 134	ND, RDL=0.30	ug	10	50
8093102	2,6-Dichlorophenol	2022/07/15	105	22 - 134	ND, RDL=0.30	ug	9.9	50
8093102	2-Chlorophenol	2022/07/15	89	22 - 134	ND, RDL=0.30	ug	12	50
8093102	3,4,5-Trichlorophenol	2022/07/15	115	22 - 134	ND, RDL=0.30	ug	7.7	50
8093102	3,4-Dichlorophenol	2022/07/15	104	22 - 134	ND, RDL=0.30	ug	9.0	50
8093102	3,5-Dichlorophenol	2022/07/15	114	22 - 134	ND, RDL=0.30	ug	9.2	50
8093102	3-Chlorophenol	2022/07/15	82	22 - 134	ND, RDL=0.30	ug	8.7	50
8093102	4-Chlorophenol	2022/07/15	109	22 - 134	ND, RDL=0.30	ug	8.5	50
8093102	Pentachlorophenol	2022/07/15	138 (1)	22 - 134	ND, RDL=0.30	ug	6.7	50
8112252	1,2,3,4,6,7,8,9-Octa CDD	2022/07/20	104	80 - 140	ND, EDL=8.8	pg	0	20
8112252	1,2,3,4,6,7,8,9-Octa CDF	2022/07/20	100	80 - 140	ND, EDL=9.4	pg	0	20
8112252	1,2,3,4,6,7,8-Hepta CDD	2022/07/20	95	80 - 140	ND, EDL=11	pg	2.1	20
8112252	1,2,3,4,6,7,8-Hepta CDF	2022/07/20	101	80 - 140	ND, EDL=11	pg	13	20
8112252	1,2,3,4,7,8,9-Hepta CDF	2022/07/20	86	80 - 140	ND, EDL=13	pg	13	20
8112252	1,2,3,4,7,8-Hexa CDD	2022/07/20	100	80 - 140	ND, EDL=9.5	pg	2.0	20
8112252	1,2,3,4,7,8-Hexa CDF	2022/07/20	109	80 - 140	ND, EDL=8.5	pg	2.8	20
8112252	1,2,3,6,7,8-Hexa CDD	2022/07/20	119	80 - 140	ND, EDL=8.3	pg	2.6	20

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8112252	1,2,3,6,7,8-Hexa CDF	2022/07/20	119	80 - 140	ND, EDL=7.8	pg	6.1	20
8112252	1,2,3,7,8,9-Hexa CDD	2022/07/20	119	80 - 140	ND, EDL=8.8	pg	8.8	20
8112252	1,2,3,7,8,9-Hexa CDF	2022/07/20	116	80 - 140	ND, EDL=9.7	pg	1.7	20
8112252	1,2,3,7,8-Penta CDD	2022/07/20	101	80 - 140	ND, EDL=8.2	pg	4.8	20
8112252	1,2,3,7,8-Penta CDF	2022/07/20	107	80 - 140	ND, EDL=8.9	pg	0.93	20
8112252	2,3,4,6,7,8-Hexa CDF	2022/07/20	91	80 - 140	ND, EDL=8.9	pg	10	20
8112252	2,3,4,7,8-Penta CDF	2022/07/20	103	80 - 140	ND, EDL=8.8	pg	3.0	20
8112252	2,3,7,8-Tetra CDD	2022/07/20	96	80 - 140	ND, EDL=6.8	pg	1.0	20
8112252	2,3,7,8-Tetra CDF	2022/07/20	99	80 - 140	ND, EDL=9.1	pg	0	20
8112252	Total Hepta CDD	2022/07/20			ND, EDL=11	pg		
8112252	Total Hepta CDF	2022/07/20			ND, EDL=12	pg		
8112252	Total Hexa CDD	2022/07/20			ND, EDL=8.8	pg		
8112252	Total Hexa CDF	2022/07/20			ND, EDL=8.7	pg		
8112252	Total Penta CDD	2022/07/20			ND, EDL=8.2	pg		
8112252	Total Penta CDF	2022/07/20			ND, EDL=8.8	pg		
8112252	Total Tetra CDD	2022/07/20			ND, EDL=6.8	pg		
8112252	Total Tetra CDF	2022/07/20			ND, EDL=9.1	pg		
8135911	233'44'55'-HeptaCB-(189)	2022/07/27	98	50 - 150	ND, RDL=0.60	ng	0	30
8135911	233'44'-PentaCB-(105)	2022/07/27	106	50 - 150	ND, RDL=0.60	ng	1.9	30
8135911	23'44'55'-HexaCB-(167)	2022/07/27	103	50 - 150	ND, RDL=0.60	ng	1.9	30
8135911	2344'5-PentaCB-(114)	2022/07/27	108	50 - 150	ND, RDL=0.60	ng	0.93	30
8135911	23'44'5-PentaCB-(118)	2022/07/27	109	50 - 150	ND, RDL=0.60	ng	3.7	30
8135911	23'44'5'-PentaCB-(123)	2022/07/27	105	50 - 150	ND, RDL=0.60	ng	0.96	30
8135911	33'44'55'-HexaCB-(169)	2022/07/27	99	50 - 150	ND, RDL=0.60	ng	3.0	30
8135911	33'44'5-PentaCB-(126)	2022/07/27	98	50 - 150	ND, RDL=0.60	ng	6.9	30
8135911	33'44'-TetraCB-(77)	2022/07/27	103	50 - 150	ND, RDL=0.60	ng	2.9	30
8135911	344'5-TetraCB-(81)	2022/07/27	102	50 - 150	ND, RDL=0.60	ng	0.98	30
8135911	Decachlorobiphenyl	2022/07/27			ND	ng		
8135911	Dichlorobiphenyl	2022/07/27			ND	ng		
8135911	Heptachlorobiphenyl	2022/07/27			ND	ng		
8135911	HexaCB-(156)+(157)	2022/07/27	104	N/A	ND, RDL=1.2	ng	0	30

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8135911	Hexachlorobiphenyl	2022/07/27			ND	ng		
8135911	Monochlorobiphenyl	2022/07/27			ND	ng		
8135911	Nonachlorobiphenyl	2022/07/27			ND	ng		
8135911	Octachlorobiphenyl	2022/07/27			ND	ng		
8135911	Pentachlorobiphenyl	2022/07/27			ND	ng		
8135911	Tetrachlorobiphenyl	2022/07/27			ND	ng		
8135911	Total PCB	2022/07/27			0	ng		
8135911	Trichlorobiphenyl	2022/07/27			ND	ng		

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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.

(1) Spike recovery of pentachlorophenol was above spike criteria. Samples were ND for pentachlorophenol.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS

M Di Grazia

Melissa DiGrazia, Operations Manager, HRMS Department

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 Signature Page.

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Chain of Custody Form - AIR

37311

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CAM FCD-01302 /3

Page ____ of ____

CLIENT INFORMATION

Company Name: RWDI
Project Manager: Kirk Easto
e-mail: kirk.easto@rwdi.com
Address: 600 Southgate Dr. Guelph ontario

Phone: 519-100-5221 Fax: ____

SECTION

Sampled by: Mos /00

ANALYSIS REQUESTED

Field Sample ID	Total Volume Sampled	# of samples	Collection Date	Sample Collection Time	USEPA Method 29	USEPA Method 5	Env Canada PM/2	USEPA Method 26	CARB 430 modified	USEPA Method 0030 (VOST)
Stericycle M29 T1→T3		23	06/15-17		✓	✓				
Stericycle M29 Blanks		7			✓	✓				
Stericycle SUOC T1→T3		18					✓			
Stericycle SUOC Blanks		6					✓			
Stericycle M26 T1→T3		6						✓		
" " Blanks		3						✓		
Stericycle CARB 430 T1→T3		3							✓	
" " Blanks		1							✓	
Stericycle VOST T1→T3		3								✓
" " Blank		1								✓

TAT Requirement

STD 10 Business day ☑
Rush 5 Business day * ☐
Rush 2 Business day * ☐
* need approval from Bureau Veritas

PROJECT INFORMATION

Project #: 2202865
Name: Stericycle
PO #: 2202865
BV Quote #:
BV Contact:

REPORTING REQUIREMENTS

Summary Report only ☑
EDD ☐

Regulation ____

Notes

Please note if these samples are "Industrial Hygiene" samples
If submitting dustfall samples, please indicate the diameter of the jar opening in cm.

PROJECT SPECIFIC COMMENTS

M26 - Ammonia, HCl, HF
send results also to Mos@rwdi.com

Client Signature: M Astwell
Affiliation: RWDI
Date/Time: June 17 2022

Received by: DIPIKASINGH
Affiliation: BVlabs
Date/Time: 2022/06/17 17:55

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COC-1031 (11/2019)

12.4 | 12.2 | 14.8

Your P.O. #: 2202865
Your Project #: 2202865
Site Location: STERICYCLE
Your C.O.C. #: 34346

Attention: Kirk Easto

RWDI Air Inc
600 Southgate Drive
Guelph, ON
CANADA N1G 4P6

Report Date: 2022/08/10
Report #: R7246748
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2G9416
Received: 2022/06/17, 17:55

Sample Matrix: Stack Sampling Train
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Chlorobenzenes in MM5 Trains (EPA M0010) (1)	4	2022/07/06	2022/07/28	BRL SOP-00202	In house (M0010)
Chlorophenols in MM5 Trains (EPA M0010) (2)	4	2022/07/06	2022/07/15	BRL SOP-00204	In house (M0010)
Dioxins/Furans in Air (Method 23)	4	2022/07/06	2022/07/26	BRL SOP-00404	EPA M23/23A m
PAH's in MM5 SamplingTrains (CARB429mod) (3)	4	2022/07/06	2022/07/28	BRL SOP-00201	CARB429(ARBM1,M2)mod
PCBs in a Sampling Train (1668Amod) (4)	4	2022/07/28	2022/07/27	BRL SOP-00408	EPA 1668A m

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, MELCC, EPA, APHA.

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.

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.
(1) Analysis was conducted according to Bureau Veritas method BRL SOP-00202 and modified where applicable based on the sample matrix. This test is not Standards Council of Canada accredited for this matrix.
(2) Analysis was conducted according to Bureau Veritas method BRL SOP-00204 and modified where applicable based on the sample matrix. This test is not Standards Council of Canada accredited for this matrix.
(3) Analysis was conducted according to Bureau Veritas' method BRL SOP-00201 and modified where applicable based on the sample matrix. Only the following parameters are accredited: Napthalene, 2-Methylnapthalene, Acenapthylene, Acenapthene, Anthracene, Benzo (a) anthracene, Dibenzo (a,h) anthracene, Fluorene, Benzo (e) pyrene, Benzo (a) pyrene, Benzo (k) fluoranthene, Benzo (b) fluoranthene, Benzo (g,h,i) perylene, Chrysene, Fluoranthene, Indeno (1,2,3 cd) pyrene. Additional parameters are not Standards

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Your P.O. #: 2202865
Your Project #: 2202865
Site Location: STERICYCLE
Your C.O.C. #: 34346

Attention: Kirk Easto

RWDI Air Inc
600 Southgate Drive
Guelph, ON
CANADA N1G 4P6

Report Date: 2022/08/10
Report #: R7246748
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2G9416
Received: 2022/06/17, 17:55

Council of Canada accredited for this matrix.
(4) Analysis was conducted according to Bureau Veritas method BRL SOP-00408 and modified where applicable based on the sample matrix. This test is not Standards Council of Canada accredited for this matrix.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: 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 Signature Page.

Bureau Veritas Job #: C2G9416
Report Date: 2022/08/10

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG390						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	**SVOC- BLANK**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
33'44'-TetraCB-(77)	ng	ND	0.066	0.60	0.00010	0.0000066		8135911
344'5-TetraCB-(81)	ng	ND	0.062	0.60	0.00030	0.000019		8135911
233'44'-PentaCB-(105)	ng	ND	0.024	0.60	0.000030	0.00000072		8135911
2344'5-PentaCB-(114)	ng	ND	0.024	0.60	0.000030	0.00000072		8135911
23'44'5-PentaCB-(118)	ng	0.13	0.024	0.60	0.000030	0.0000039		8135911
23'44'5'-PentaCB-(123)	ng	ND	0.026	0.60	0.000030	0.00000078		8135911
33'44'5-PentaCB-(126)	ng	ND	0.023	0.60	0.10	0.0023		8135911
HexaCB-(156)+(157)	ng	ND	0.036	1.2	0.000030	0.0000011		8135911
23'44'55'-HexaCB-(167)	ng	ND	0.035	0.60	0.000030	0.0000011		8135911
33'44'55'-HexaCB-(169)	ng	ND	0.036	0.60	0.030	0.0011		8135911
233'44'55'-HeptaCB-(189)	ng	ND	0.048	0.60	0.000030	0.0000014		8135911
Monochlorobiphenyl	ng	ND	0.019	N/A			0	8135911
Dichlorobiphenyl	ng	ND	0.031	N/A			0	8135911
Trichlorobiphenyl	ng	ND	0.075	N/A			0	8135911
Tetrachlorobiphenyl	ng	0.12	0.076	N/A			1	8135911
Pentachlorobiphenyl	ng	0.24	0.036	N/A			2	8135911
Hexachlorobiphenyl	ng	0.40	0.086	N/A			2	8135911
Heptachlorobiphenyl	ng	ND	0.052	N/A			0	8135911
Octachlorobiphenyl	ng	ND	0.062	N/A			0	8135911
Nonachlorobiphenyl	ng	ND	0.063	N/A			0	8135911
Decachlorobiphenyl	ng	ND	0.056	N/A			0	8135911
Total PCB	ng	0.76	N/A	N/A				8135911
TOTAL TOXIC EQUIVALENCY	ng					0.0034		
Surrogate Recovery (%)								
C13-233'44'55'-HeptaCB-(189)	%	81						8135911
C13-233'44'5-HexaCB-(156)	%	82						8135911
C13-233'44'5'-HexaCB-(157)	%	82						8135911

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

N/A = Not Applicable

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RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG390						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	**SVOC- BLANK**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
C13-233'44'-PentaCB-(105)	%	75						8135911
C13-23'44'55'-HexaCB-(167)	%	81						8135911
C13-2344'5-PentaCB-(114)	%	65						8135911
C13-23'44'5-PentaCB-(118)	%	71						8135911
C13-2'344'5-PentaCB-(123)	%	71						8135911
C13-33'44'55'-HexaCB-(169)	%	72						8135911
C13-33'44'5-PentaCB-(126)	%	70						8135911
C13-33'44'-TetraCB-(77)	%	63						8135911
C13-344'5-TetraCB-(81)	%	58						8135911

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/10

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG391						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 1	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	ng	6.4	0.070	0.60	0.00010	0.00064		8135911
344'5-TetraCB-(81)	ng	ND (1)	0.16	0.60	0.00030	0.000048		8135911
233'44'-PentaCB-(105)	ng	15	0.037	0.60	0.000030	0.00045		8135911
2344'5-PentaCB-(114)	ng	0.94	0.037	0.60	0.000030	0.000028		8135911
23'44'5-PentaCB-(118)	ng	40	0.036	0.60	0.000030	0.0012		8135911
23'44'5'-PentaCB-(123)	ng	0.47	0.040	0.60	0.000030	0.000014		8135911
33'44'5-PentaCB-(126)	ng	0.57	0.036	0.60	0.10	0.057		8135911
HexaCB-(156)+(157)	ng	3.2	0.041	1.2	0.000030	0.000096		8135911
23'44'55'-HexaCB-(167)	ng	1.3	0.040	0.60	0.000030	0.000039		8135911
33'44'55'-HexaCB-(169)	ng	ND	0.041	0.60	0.030	0.0012		8135911
233'44'55'-HeptaCB-(189)	ng	ND	0.076	0.60	0.000030	0.0000023		8135911
Monochlorobiphenyl	ng	0.51	0.028	N/A			2	8135911
Dichlorobiphenyl	ng	1.2	0.031	N/A			2	8135911
Trichlorobiphenyl	ng	1.9	0.064	N/A			7	8135911
Tetrachlorobiphenyl	ng	22	0.12	N/A			12	8135911
Pentachlorobiphenyl	ng	180	0.085	N/A			19	8135911
Hexachlorobiphenyl	ng	150	0.14	N/A			21	8135911
Heptachlorobiphenyl	ng	12	0.081	N/A			12	8135911
Octachlorobiphenyl	ng	0.35	0.086	N/A			1	8135911
Nonachlorobiphenyl	ng	ND	0.10	N/A			0	8135911
Decachlorobiphenyl	ng	ND	0.14	N/A			0	8135911
Total PCB	ng	370	N/A	N/A				8135911
TOTAL TOXIC EQUIVALENCY	ng					0.061		
Surrogate Recovery (%)								
C13-233'44'55'-HeptaCB-(189)	%	89						8135911
C13-233'44'5-HexaCB-(156)	%	69						8135911

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

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N/A = Not Applicable

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/10

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG391						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 1	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-233'44'5'-HexaCB-(157)	%	69						8135911
C13-233'44'-PentaCB-(105)	%	69						8135911
C13-23'44'55'-HexaCB-(167)	%	72						8135911
C13-2344'5-PentaCB-(114)	%	64						8135911
C13-23'44'5-PentaCB-(118)	%	73						8135911
C13-2'344'5-PentaCB-(123)	%	73						8135911
C13-33'44'55'-HexaCB-(169)	%	54						8135911
C13-33'44'5-PentaCB-(126)	%	61						8135911
C13-33'44'-TetraCB-(77)	%	64						8135911
C13-344'5-TetraCB-(81)	%	64						8135911

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,

The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/10

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG392						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	**SVOC- TEST 2**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
33'44'-TetraCB-(77)	ng	75	0.062	0.60	0.00010	0.0075		8135911
344'5-TetraCB-(81)	ng	3.2	0.058	0.60	0.00030	0.00096		8135911
233'44'-PentaCB-(105)	ng	150	0.059	0.60	0.000030	0.0045		8135911
2344'5-PentaCB-(114)	ng	9.6	0.060	0.60	0.000030	0.00029		8135911
23'44'5-PentaCB-(118)	ng	440	0.058	0.60	0.000030	0.013		8135911
23'44'5'-PentaCB-(123)	ng	6.0	0.065	0.60	0.000030	0.00018		8135911
33'44'5-PentaCB-(126)	ng	3.3	0.058	0.60	0.10	0.33		8135911
HexaCB-(156)+(157)	ng	29	0.058	1.2	0.000030	0.00087		8135911
23'44'55'-HexaCB-(167)	ng	12	0.057	0.60	0.000030	0.00036		8135911
33'44'55'-HexaCB-(169)	ng	ND	0.058	0.60	0.030	0.0017		8135911
233'44'55'-HeptaCB-(189)	ng	0.39	0.053	0.60	0.000030	0.000012		8135911
Monochlorobiphenyl	ng	1.8	0.018	N/A			3	8135911
Dichlorobiphenyl	ng	22	0.058	N/A			3	8135911
Trichlorobiphenyl	ng	23	0.060	N/A			12	8135911
Tetrachlorobiphenyl	ng	330	0.083	N/A			20	8135911
Pentachlorobiphenyl	ng	2300	0.065	N/A			24	8135911
Hexachlorobiphenyl	ng	1500	0.54	N/A			24	8135911
Heptachlorobiphenyl	ng	110	0.056	N/A			18	8135911
Octachlorobiphenyl	ng	9.6	0.061	N/A			9	8135911
Nonachlorobiphenyl	ng	1.7	0.064	N/A			3	8135911
Decachlorobiphenyl	ng	0.25	0.061	N/A			1	8135911
Total PCB	ng	4300	N/A	N/A				8135911
TOTAL TOXIC EQUIVALENCY	ng					0.36		
Surrogate Recovery (%)								
C13-233'44'55'-HeptaCB-(189)	%	85						8135911
C13-233'44'5-HexaCB-(156)	%	84						8135911
C13-233'44'5'-HexaCB-(157)	%	84						8135911

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

N/A = Not Applicable

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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/10

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG392						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 2	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-233'44'-PentaCB-(105)	%	92						8135911
C13-23'44'55'-HexaCB-(167)	%	92						8135911
C13-2344'5-PentaCB-(114)	%	86						8135911
C13-23'44'5-PentaCB-(118)	%	97						8135911
C13-2'344'5-PentaCB-(123)	%	96						8135911
C13-33'44'55'-HexaCB-(169)	%	75						8135911
C13-33'44'5-PentaCB-(126)	%	86						8135911
C13-33'44'-TetraCB-(77)	%	82						8135911
C13-344'5-TetraCB-(81)	%	83						8135911

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/10

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG393						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 3	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'-TetraCB-(77)	ng	74	0.038	0.60	0.00010	0.0074		8135911
344'5-TetraCB-(81)	ng	3.4	0.036	0.60	0.00030	0.0010		8135911
233'44'-PentaCB-(105)	ng	150	0.092	0.60	0.000030	0.0045		8135911
2344'5-PentaCB-(114)	ng	9.2	0.094	0.60	0.000030	0.00028		8135911
23'44'5-PentaCB-(118)	ng	430	0.091	0.60	0.000030	0.013		8135911
23'44'5'-PentaCB-(123)	ng	9.3	0.10	0.60	0.000030	0.00028		8135911
33'44'5-PentaCB-(126)	ng	3.6	0.090	0.60	0.10	0.36		8135911
HexaCB-(156)+(157)	ng	29	0.059	1.2	0.000030	0.00087		8135911
23'44'55'-HexaCB-(167)	ng	12	0.059	0.60	0.000030	0.00036		8135911
33'44'55'-HexaCB-(169)	ng	ND	0.060	0.60	0.030	0.0018		8135911
233'44'55'-HeptaCB-(189)	ng	0.33	0.051	0.60	0.000030	0.0000099		8135911
Monochlorobiphenyl	ng	3.7	0.021	N/A			3	8135911
Dichlorobiphenyl	ng	24	0.054	N/A			5	8135911
Trichlorobiphenyl	ng	26	0.072	N/A			15	8135911
Tetrachlorobiphenyl	ng	350	0.085	N/A			24	8135911
Pentachlorobiphenyl	ng	2300	0.10	N/A			25	8135911
Hexachlorobiphenyl	ng	1600	0.28	N/A			27	8135911
Heptachlorobiphenyl	ng	110	0.070	N/A			18	8135911
Octachlorobiphenyl	ng	9.6	0.092	N/A			9	8135911
Nonachlorobiphenyl	ng	2.0	0.077	N/A			3	8135911
Decachlorobiphenyl	ng	0.24	0.074	N/A			1	8135911
Total PCB	ng	4400	N/A	N/A				8135911
TOTAL TOXIC EQUIVALENCY	ng					0.39		
Surrogate Recovery (%)								
C13-233'44'55'-HeptaCB-(189)	%	91						8135911
C13-233'44'5-HexaCB-(156)	%	82						8135911
C13-233'44'5'-HexaCB-(157)	%	82						8135911

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

N/A = Not Applicable

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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/10

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

RESULTS OF ANALYSES OF STACK SAMPLING TRAIN

Bureau Veritas ID		SYG393						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 3	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-233'44'-PentaCB-(105)	%	89						8135911
C13-23'44'55'-HexaCB-(167)	%	88						8135911
C13-2344'5-PentaCB-(114)	%	88						8135911
C13-23'44'5-PentaCB-(118)	%	95						8135911
C13-2'344'5-PentaCB-(123)	%	94						8135911
C13-33'44'55'-HexaCB-(169)	%	62						8135911
C13-33'44'5-PentaCB-(126)	%	79						8135911
C13-33'44'-TetraCB-(77)	%	74						8135911
C13-344'5-TetraCB-(81)	%	78						8135911

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG390	SYG391	SYG392	SYG393		
Sampling Date		2022/06/17	2022/06/17	2022/06/17	2022/06/17		
COC Number		34346	34346	34346	34346		
	UNITS	**SVOC- BLANK**	**SVOC- TEST 1**	**SVOC- TEST 2**	**SVOC- TEST 3**	**RDL**	**QC Batch**
1-Methylnaphthalene	ug	ND	ND	ND	0.30	0.30	8093063
1-Methylphenanthrene	ug	ND	ND	ND	ND	0.30	8093063
2-Chloronaphthalene	ug	ND	ND	ND	ND	0.30	8093063
2-Methylanthracene	ug	ND	ND	ND	ND	0.30	8093063
2-Methylnaphthalene	ug	ND	ND	ND	0.36	0.30	8093063
3-Methylcholanthrene	ug	ND	ND	ND	ND	0.30	8093063
7,12-Dimethylbenzo(a)anthracene	ug	ND	ND	ND	ND	1.2	8093063
9,10-Dimethylanthracene	ug	ND	ND	ND	ND	0.30	8093063
9-Methylphenanthrene	ug	ND	ND	ND	ND	0.30	8093063
Acenaphthene	ug	ND	ND	ND	ND	0.30	8093063
Acenaphthylene	ug	ND	ND	ND	ND	0.30	8093063
Anthracene	ug	ND	ND	ND	ND	0.30	8093063
Benzo(a)anthracene	ug	ND	ND	ND	ND	0.30	8093063
Benzo(a)fluorene	ug	ND	ND	ND	ND	0.30	8093063
Benzo(a)pyrene	ug	ND	ND	ND	ND	0.30	8093063
Benzo(b)Anthracene	ug	ND	ND	ND	ND	0.30	8093063
Benzo(b)fluoranthene	ug	ND	ND	ND	ND	0.30	8093063
Benzo(b)fluorene	ug	ND	ND	ND	ND	0.30	8093063
Benzo(e)pyrene	ug	ND	ND	ND	ND	0.30	8093063
Benzo(g,h,i)perylene	ug	ND	ND	ND	ND	0.30	8093063
Benzo(k)fluoranthene	ug	ND	ND	ND	ND	0.30	8093063
Biphenyl	ug	ND	ND	ND	0.72	0.30	8093063
Chrysene	ug	ND	ND	ND	ND	0.30	8093063
Coronene	ug	ND	ND	ND	ND	0.30	8093063
Dibenzo(a,h)anthracene	ug	ND	ND	ND	ND	0.30	8093063
Dibenzo(a,c)anthracene	ug	ND	ND	ND	ND	0.30	8093063
Dibenzo(a,e)pyrene	ug	ND	ND	ND	ND	0.30	8093063
Fluoranthene	ug	ND	ND	0.30	ND	0.30	8093063
Fluorene	ug	ND	ND	ND	ND	0.30	8093063
Indeno(1,2,3-cd)pyrene	ug	ND	ND	ND	ND	0.30	8093063
m-Terphenyl	ug	ND	ND	ND	ND	0.30	8093063
Naphthalene	ug	ND	1.02	5.58	10.4	0.30	8093063
o-Terphenyl	ug	ND	ND	ND	ND	0.30	8093063
Perylene	ug	ND	ND	ND	ND	0.30	8093063

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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SEMI-VOLATILE ORGANICS BY GC-MS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG390	SYG391	SYG392	SYG393		
Sampling Date		2022/06/17	2022/06/17	2022/06/17	2022/06/17		
COC Number		34346	34346	34346	34346		
	UNITS	**SVOC- BLANK**	**SVOC- TEST 1**	**SVOC- TEST 2**	**SVOC- TEST 3**	**RDL**	**QC Batch**
Phenanthrene	ug	ND	ND	0.96	1.08	0.30	8093063
Picene	ug	ND	ND	ND	ND	0.30	8093063
p-Terphenyl	ug	ND	ND	ND	ND	0.30	8093063
Pyrene	ug	ND	ND	ND	ND	0.30	8093063
Quinoline	ug	ND	ND	ND	ND	0.30	8093063
Tetralin	ug	ND	ND	ND	ND	0.30	8093063
Triphenylene	ug	ND	ND	ND	ND	0.30	8093063
1,2,3,4-Tetrachlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,2,3,5+1,2,4,5-Tetrachlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,2,3-Trichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,2,4-Trichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,2-Dichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,3,5-Trichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,3-Dichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
1,4-Dichlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
Hexachlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
Pentachlorobenzene	ug	ND	ND	ND	ND	0.30	8093092
2,3,4,5-Tetrachlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3,4,6-Tetrachlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3,4-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3,5,6-Tetrachlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3,5-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3,6-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,3-Dichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,4 + 2,5-Dichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,4,5-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,4,6-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2,6-Dichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
2-Chlorophenol	ug	ND	ND	ND	ND	0.30	8093102
3,4,5-Trichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
3,4-Dichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
3,5-Dichlorophenol	ug	ND	ND	ND	ND	0.30	8093102
3-Chlorophenol	ug	ND	ND	ND	ND	0.30	8093102
4-Chlorophenol	ug	ND	ND	ND	ND	0.30	8093102

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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SEMI-VOLATILE ORGANICS BY GC-MS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG390	SYG391	SYG392	SYG393		
Sampling Date		2022/06/17	2022/06/17	2022/06/17	2022/06/17		
COC Number		34346	34346	34346	34346		
	UNITS	**SVOC- BLANK**	**SVOC- TEST 1**	**SVOC- TEST 2**	**SVOC- TEST 3**	**RDL**	**QC Batch**
Pentachlorophenol	ug	ND	ND	ND	ND	0.30	8093102
Surrogate Recovery (%)							
13C6-Hexachlorobenzene	%	89	83	84	85		8093092
2H3-1,2,3-Trichlorobenzene (FS)	%	88	83	80	79		8093092
2H3-1,2,4-Trichlorobenzene	%	76	68	68	67		8093092
2H4-1,3-Dichlorobenzene	%	70	58	57	58		8093092
2H4-1,4-Dichlorobenzene (FS)	%	84	72	70	58		8093092
D3-2,4-Dichlorophenol	%	77	95	88	100		8093102
D6-Pentachlorophenol	%	78	105	93	108		8093102
D10-2-Methylnaphthalene	%	90	84	86	88		8093063
D10-Anthracene	%	82	88	84	82		8093063
D10-Fluoranthene	%	84	82	84	80		8093063
D10-Fluorene (FS)	%	86	82	86	88		8093063
D10-Phenanthrene	%	88	84	86	88		8093063
D12-Benzo(a)anthracene	%	88	78	72	58		8093063
D12-Benzo(a)pyrene	%	72	40 (1)	30 (1)	18 (1)		8093063
D12-Benzo(b)fluoranthene	%	80	68	50	32 (1)		8093063
D12-Benzo(ghi)perylene	%	88	36 (1)	18 (1)	8.0 (1)		8093063
D12-Benzo(k)fluoranthene	%	90	70	54	28 (1)		8093063
D12-Chrysene	%	92	84	74	60		8093063
D12-Indeno(1,2,3-cd)pyrene	%	84	38 (1)	18 (1)	8.0 (1)		8093063
D12-Perylene	%	82	56	40 (1)	24 (1)		8093063
D14-Dibenzo(a,h)anthracene	%	80	40 (1)	20 (1)	8.0 (1)		8093063
D14-Terphenyl (FS)	%	80	78	82	80		8093063
D8-Acenaphthylene	%	92	80	86	86		8093063
D8-Naphthalene	%	88	80	84	86		8093063

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG390						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	**SVOC- BLANK**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
2,3,7,8-Tetra CDD *	pg	ND	8.6	60	1.00	8.60		8112252
1,2,3,7,8-Penta CDD *	pg	ND	10	60	1.00	10.0		8112252
1,2,3,4,7,8-Hexa CDD *	pg	ND	8.2	60	0.100	0.820		8112252
1,2,3,6,7,8-Hexa CDD *	pg	ND	7.1	60	0.100	0.710		8112252
1,2,3,7,8,9-Hexa CDD *	pg	ND	7.6	60	0.100	0.760		8112252
1,2,3,4,6,7,8-Hepta CDD *	pg	ND	7.5	60	0.0100	0.0750		8112252
1,2,3,4,6,7,8,9-Octa CDD *	pg	ND	8.8	600	0.000300	0.00264		8112252
Total Tetra CDD *	pg	ND	8.6	60			0	8112252
Total Penta CDD *	pg	ND	10	60			0	8112252
Total Hexa CDD *	pg	ND	7.6	60			0	8112252
Total Hepta CDD *	pg	ND	7.5	60			0	8112252
2,3,7,8-Tetra CDF **	pg	ND	9.7	60	0.100	0.970		8112252
1,2,3,7,8-Penta CDF **	pg	ND	9.1	60	0.0300	0.273		8112252
2,3,4,7,8-Penta CDF **	pg	ND	9.0	60	0.300	2.70		8112252
1,2,3,4,7,8-Hexa CDF **	pg	ND	7.1	60	0.100	0.710		8112252
1,2,3,6,7,8-Hexa CDF **	pg	ND	6.5	60	0.100	0.650		8112252
2,3,4,6,7,8-Hexa CDF **	pg	ND	7.4	60	0.100	0.740		8112252
1,2,3,7,8,9-Hexa CDF **	pg	ND	8.1	60	0.100	0.810		8112252
1,2,3,4,6,7,8-Hepta CDF **	pg	ND	6.5	60	0.0100	0.0650		8112252
1,2,3,4,7,8,9-Hepta CDF **	pg	ND	8.2	60	0.0100	0.0820		8112252
1,2,3,4,6,7,8,9-Octa CDF **	pg	ND	8.4	600	0.000300	0.00252		8112252
Total Tetra CDF **	pg	ND	9.7	60			0	8112252
Total Penta CDF **	pg	ND	9.0	60			0	8112252
Total Hexa CDF **	pg	ND	7.2	60			0	8112252
Total Hepta CDF **	pg	ND	7.3	60			0	8112252
TOTAL TOXIC EQUIVALENCY	pg					28.0		

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG390						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	**SVOC- BLANK**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Surrogate Recovery (%)								
C13-1234678 HeptaCDD *	%	96						8112252
C13-1234678 HeptaCDF **	%	84						8112252
C13-123478 HexaCDD *	%	107						8112252
C13-123478 HexaCDF **	%	112						8112252
C13-1234789 HeptaCDF **	%	102						8112252
C13-123678 HexaCDD *	%	103						8112252
C13-123678 HexaCDF **	%	70						8112252
C13-12378 PentaCDD *	%	105						8112252
C13-12378 PentaCDF **	%	91						8112252
C13-123789 HexaCDF **	%	90						8112252
C13-23478 PentaCDF **	%	106						8112252
C13-2378 TetraCDD *	%	109						8112252
C13-2378 TetraCDF **	%	94						8112252
C13-Octachlorodibenzo-p-Dioxin	%	77						8112252
Cl37-2378 TetraCDD *	%	89						8112252

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG391						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 1	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	ND	11	60	1.00	11.0		8112252
1,2,3,7,8-Penta CDD *	pg	ND	9.1	60	1.00	9.10		8112252
1,2,3,4,7,8-Hexa CDD *	pg	ND	7.7	60	0.100	0.770		8112252
1,2,3,6,7,8-Hexa CDD *	pg	ND	6.8	60	0.100	0.680		8112252
1,2,3,7,8,9-Hexa CDD *	pg	ND	7.2	60	0.100	0.720		8112252
1,2,3,4,6,7,8-Hepta CDD *	pg	ND	9.0	60	0.0100	0.0900		8112252
1,2,3,4,6,7,8,9-Octa CDD *	pg	ND	12	600	0.000300	0.00360		8112252
Total Tetra CDD *	pg	ND	11	60			0	8112252
Total Penta CDD *	pg	ND	9.1	60			0	8112252
Total Hexa CDD *	pg	ND	7.2	60			0	8112252
Total Hepta CDD *	pg	ND	9.0	60			0	8112252
2,3,7,8-Tetra CDF **	pg	ND	9.7	60	0.100	0.970		8112252
1,2,3,7,8-Penta CDF **	pg	ND	9.7	60	0.0300	0.291		8112252
2,3,4,7,8-Penta CDF **	pg	ND	9.6	60	0.300	2.88		8112252
1,2,3,4,7,8-Hexa CDF **	pg	ND	6.8	60	0.100	0.680		8112252
1,2,3,6,7,8-Hexa CDF **	pg	ND	6.2	60	0.100	0.620		8112252
2,3,4,6,7,8-Hexa CDF **	pg	ND	7.1	60	0.100	0.710		8112252
1,2,3,7,8,9-Hexa CDF **	pg	ND	7.8	60	0.100	0.780		8112252
1,2,3,4,6,7,8-Hepta CDF **	pg	ND	9.2	60	0.0100	0.0920		8112252
1,2,3,4,7,8,9-Hepta CDF **	pg	ND	12	60	0.0100	0.120		8112252
1,2,3,4,6,7,8,9-Octa CDF **	pg	ND	12	600	0.000300	0.00360		8112252
Total Tetra CDF **	pg	ND	9.7	60			0	8112252
Total Penta CDF **	pg	ND	9.6	60			0	8112252
Total Hexa CDF **	pg	ND	6.9	60			0	8112252
Total Hepta CDF **	pg	ND	10	60			0	8112252
TOTAL TOXIC EQUIVALENCY	pg					29.5		

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG391						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 1	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)								
C13-1234678 HeptaCDD *	%	88						8112252
C13-1234678 HeptaCDF **	%	75						8112252
C13-123478 HexaCDD *	%	105						8112252
C13-123478 HexaCDF **	%	115						8112252
C13-1234789 HeptaCDF **	%	98						8112252
C13-123678 HexaCDD *	%	103						8112252
C13-123678 HexaCDF **	%	67						8112252
C13-12378 PentaCDD *	%	100						8112252
C13-12378 PentaCDF **	%	89						8112252
C13-123789 HexaCDF **	%	92						8112252
C13-23478 PentaCDF **	%	103						8112252
C13-2378 TetraCDD *	%	106						8112252
C13-2378 TetraCDF **	%	89						8112252
C13-Octachlorodibenzo-p-Dioxin	%	59						8112252
Cl37-2378 TetraCDD *	%	91						8112252

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG392						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 2	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	ND	11	60	1.00	11.0		8112252
1,2,3,7,8-Penta CDD *	pg	ND	8.2	60	1.00	8.20		8112252
1,2,3,4,7,8-Hexa CDD *	pg	ND	8.6	60	0.100	0.860		8112252
1,2,3,6,7,8-Hexa CDD *	pg	ND	7.5	60	0.100	0.750		8112252
1,2,3,7,8,9-Hexa CDD *	pg	ND	8.0	60	0.100	0.800		8112252
1,2,3,4,6,7,8-Hepta CDD *	pg	ND	6.9	60	0.0100	0.0690		8112252
1,2,3,4,6,7,8,9-Octa CDD *	pg	22	10	600	0.000300	0.00660		8112252
Total Tetra CDD *	pg	60	11	60			2	8112252
Total Penta CDD *	pg	ND (1)	27	60			0	8112252
Total Hexa CDD *	pg	20.7	8.0	60			1	8112252
Total Hepta CDD *	pg	ND (2)	12	60			0	8112252
2,3,7,8-Tetra CDF **	pg	17	11	60	0.100	1.70		8112252
1,2,3,7,8-Penta CDF **	pg	ND	9.9	60	0.0300	0.297		8112252
2,3,4,7,8-Penta CDF **	pg	ND	9.9	60	0.300	2.97		8112252
1,2,3,4,7,8-Hexa CDF **	pg	ND	11	60	0.100	1.10		8112252
1,2,3,6,7,8-Hexa CDF **	pg	ND	9.7	60	0.100	0.970		8112252
2,3,4,6,7,8-Hexa CDF **	pg	ND	11	60	0.100	1.10		8112252
1,2,3,7,8,9-Hexa CDF **	pg	ND	12	60	0.100	1.20		8112252
1,2,3,4,6,7,8-Hepta CDF **	pg	ND	8.8	60	0.0100	0.0880		8112252
1,2,3,4,7,8,9-Hepta CDF **	pg	ND	11	60	0.0100	0.110		8112252
1,2,3,4,6,7,8,9-Octa CDF **	pg	ND	12	600	0.000300	0.00360		8112252
Total Tetra CDF **	pg	37	11	60			2	8112252

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG392						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 2	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Total Penta CDF **	pg	ND (1)	17	60			0	8112252
Total Hexa CDF **	pg	ND	11	60			0	8112252
Total Hepta CDF **	pg	ND	9.8	60			0	8112252
TOTAL TOXIC EQUIVALENCY	pg					31.2		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD *	%	66						8112252
C13-1234678 HeptaCDF **	%	57						8112252
C13-123478 HexaCDD *	%	117						8112252
C13-123478 HexaCDF **	%	117						8112252
C13-1234789 HeptaCDF **	%	94						8112252
C13-123678 HexaCDD *	%	79						8112252
C13-123678 HexaCDF **	%	55						8112252
C13-12378 PentaCDD *	%	86						8112252
C13-12378 PentaCDF **	%	72						8112252
C13-123789 HexaCDF **	%	75						8112252
C13-23478 PentaCDF **	%	107						8112252
C13-2378 TetraCDD *	%	86						8112252
C13-2378 TetraCDF **	%	71						8112252
C13-Octachlorodibenzo-p-Dioxin	%	42						8112252
Cl37-2378 TetraCDD *	%	88						8112252

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

** CDF = Chloro Dibenzo-p-Furan

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

* CDD = Chloro Dibenzo-p-Dioxin

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG393						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 3	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg	ND	9.4	60	1.00	9.40		8112252
1,2,3,7,8-Penta CDD *	pg	ND	16	60	1.00	16.0		8112252
1,2,3,4,7,8-Hexa CDD *	pg	ND	15	60	0.100	1.50		8112252
1,2,3,6,7,8-Hexa CDD *	pg	ND	13	60	0.100	1.30		8112252
1,2,3,7,8,9-Hexa CDD *	pg	ND	13	60	0.100	1.30		8112252
1,2,3,4,6,7,8-Hepta CDD *	pg	ND	10	60	0.0100	0.100		8112252
1,2,3,4,6,7,8,9-Octa CDD *	pg	ND	18	600	0.000300	0.00540		8112252
Total Tetra CDD *	pg	68.3	9.4	60			2	8112252
Total Penta CDD *	pg	ND (1)	35	60			0	8112252
Total Hexa CDD *	pg	ND	14	60			0	8112252
Total Hepta CDD *	pg	ND	10	60			0	8112252
2,3,7,8-Tetra CDF **	pg	ND	8.3	60	0.100	0.830		8112252
1,2,3,7,8-Penta CDF **	pg	ND	9.8	60	0.0300	0.294		8112252
2,3,4,7,8-Penta CDF **	pg	ND	9.7	60	0.300	2.91		8112252
1,2,3,4,7,8-Hexa CDF **	pg	ND	12	60	0.100	1.20		8112252
1,2,3,6,7,8-Hexa CDF **	pg	ND	11	60	0.100	1.10		8112252
2,3,4,6,7,8-Hexa CDF **	pg	ND	13	60	0.100	1.30		8112252
1,2,3,7,8,9-Hexa CDF **	pg	ND	14	60	0.100	1.40		8112252
1,2,3,4,6,7,8-Hepta CDF **	pg	ND	7.6	60	0.0100	0.0760		8112252
1,2,3,4,7,8,9-Hepta CDF **	pg	ND	9.5	60	0.0100	0.0950		8112252
1,2,3,4,6,7,8,9-Octa CDF **	pg	ND	19	600	0.000300	0.00570		8112252
Total Tetra CDF **	pg	ND	8.3	60			0	8112252

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

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DIOXINS AND FURANS BY HRMS (STACK SAMPLING TRAIN)

Bureau Veritas ID		SYG393						
Sampling Date		2022/06/17						
COC Number		34346			TOXIC EQUIVALENCY		# of	
	UNITS	SVOC- TEST 3	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Total Penta CDF **	pg	ND	9.8	60			0	8112252
Total Hexa CDF **	pg	ND	13	60			0	8112252
Total Hepta CDF **	pg	ND	8.5	60			0	8112252
TOTAL TOXIC EQUIVALENCY	pg					38.8		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD *	%	55						8112252
C13-1234678 HeptaCDF **	%	49						8112252
C13-123478 HexaCDD *	%	102						8112252
C13-123478 HexaCDF **	%	117						8112252
C13-1234789 HeptaCDF **	%	85						8112252
C13-123678 HexaCDD *	%	87						8112252
C13-123678 HexaCDF **	%	51						8112252
C13-12378 PentaCDD *	%	70						8112252
C13-12378 PentaCDF **	%	55						8112252
C13-123789 HexaCDF **	%	71						8112252
C13-23478 PentaCDF **	%	117						8112252
C13-2378 TetraCDD *	%	83						8112252
C13-2378 TetraCDF **	%	70						8112252
C13-Octachlorodibenzo-p-Dioxin	%	31						8112252
Cl37-2378 TetraCDD *	%	86						8112252

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

** CDF = Chloro Dibenzo-p-Furan

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

* CDD = Chloro Dibenzo-p-Dioxin

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Bureau Veritas Job #: C2G9416
Report Date: 2022/08/10

RWDI Air Inc
Client Project #: 2202865
Site Location: STERICYCLE
Your P.O. #: 2202865

TEST SUMMARY

Bureau Veritas ID: SYG390 **Collected:** 2022/06/17
Sample ID: SVOC- BLANK **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chlorobenzenes in MM5 Trains (EPA M0010)	GC/MS	8093092	2022/07/06	2022/07/28	Wenhui (Susie) Shi
Chlorophenols in MM5 Trains (EPA M0010)	GC/MS	8093102	2022/07/06	2022/07/15	Wenhui (Susie) Shi
Dioxins/Furans in Air (Method 23)	HRMS/MS	8112252	2022/07/06	2022/07/26	Angel Guerrero
PAH's in MM5 SamplingTrains (CARB429mod)	GC/MS	8093063	2022/07/06	2022/07/28	Chau Ting (Ruth) Chan
PCBs in a Sampling Train (1668Amod)	HRMS/MS	8135911	2022/07/28	2022/07/27	Nishat Tasnim

Bureau Veritas ID: SYG391 **Collected:** 2022/06/17
Sample ID: SVOC- TEST 1 **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chlorobenzenes in MM5 Trains (EPA M0010)	GC/MS	8093092	2022/07/06	2022/07/28	Wenhui (Susie) Shi
Chlorophenols in MM5 Trains (EPA M0010)	GC/MS	8093102	2022/07/06	2022/07/15	Wenhui (Susie) Shi
Dioxins/Furans in Air (Method 23)	HRMS/MS	8112252	2022/07/06	2022/07/26	Angel Guerrero
PAH's in MM5 SamplingTrains (CARB429mod)	GC/MS	8093063	2022/07/06	2022/07/28	Chau Ting (Ruth) Chan
PCBs in a Sampling Train (1668Amod)	HRMS/MS	8135911	2022/07/28	2022/07/27	Nishat Tasnim

Bureau Veritas ID: SYG392 **Collected:** 2022/06/17
Sample ID: SVOC- TEST 2 **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chlorobenzenes in MM5 Trains (EPA M0010)	GC/MS	8093092	2022/07/06	2022/07/28	Wenhui (Susie) Shi
Chlorophenols in MM5 Trains (EPA M0010)	GC/MS	8093102	2022/07/06	2022/07/15	Wenhui (Susie) Shi
Dioxins/Furans in Air (Method 23)	HRMS/MS	8112252	2022/07/06	2022/07/26	Angel Guerrero
PAH's in MM5 SamplingTrains (CARB429mod)	GC/MS	8093063	2022/07/06	2022/07/28	Chau Ting (Ruth) Chan
PCBs in a Sampling Train (1668Amod)	HRMS/MS	8135911	2022/07/28	2022/07/27	Nishat Tasnim

Bureau Veritas ID: SYG393 **Collected:** 2022/06/17
Sample ID: SVOC- TEST 3 **Shipped:**
Matrix: Stack Sampling Train **Received:** 2022/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chlorobenzenes in MM5 Trains (EPA M0010)	GC/MS	8093092	2022/07/06	2022/07/28	Wenhui (Susie) Shi
Chlorophenols in MM5 Trains (EPA M0010)	GC/MS	8093102	2022/07/06	2022/07/15	Wenhui (Susie) Shi
Dioxins/Furans in Air (Method 23)	HRMS/MS	8112252	2022/07/06	2022/07/26	Angel Guerrero
PAH's in MM5 SamplingTrains (CARB429mod)	GC/MS	8093063	2022/07/06	2022/07/28	Chau Ting (Ruth) Chan
PCBs in a Sampling Train (1668Amod)	HRMS/MS	8135911	2022/07/28	2022/07/27	Nishat Tasnim

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GENERAL COMMENTS

Sample SYG391 [SVOC- TEST 1] : PAHMM5-TR Analysis: D12-Benzo(a)pyrene, D12-Benzo(ghi)perylene, D12-Indeno(1,2,3-cd)pyrene and D12-Dibenzo (a,h)anthracene were below surrogate criteria. Archive cleanup generated similar results. Please view results with caution.

Sample SYG392 [SVOC- TEST 2] : PAHMM5-TR Analysis: D12-Benzo(a)pyrene, D12-Benzo(ghi)perylene, D12-Indeno(1,2,3-cd)pyrene, D12-perylene and D12-Dibenzo(a,h)anthracene were below surrogate criteria. Archive cleanup generated similar results. Please view results with caution.

Sample SYG393 [SVOC- TEST 3] : PAHMM5-TR Analysis: D12-Benzo(a)pyrene, D12-Benzo(b)fluoranthene, D12-Benzo(ghi)perylene, D12-Benzo(k) fluoranthene, D12-Indeno(1,2,3-cd)pyrene, D12-perylene and D12-Dibenzo(a,h)anthracene were below surrogate criteria. Archive cleanup generated similar results. Please view results with caution.

SEMI-VOLATILE ORGANICS BY GC-MS (STACK SAMPLING TRAIN)

PAH's in MM5 SamplingTrains (CARB429mod): Benzo(b)fluoranthene and Benzo(j)fluoranthene coelute, data reported is the total of the two compounds if both are present.

Triphenylene co-elutes with Chrysene and Dibenzo(a,c)anthracene co-elutes with Dibenz(a,h)anthracene. The data reported is the total of the 2 compounds if both are present.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
8093063	CTC	Spiked Blank	D10-2-Methylnaphthalene	2022/07/28		90	%	50 - 150
			D10-Fluoranthene	2022/07/28		86	%	50 - 150
			D10-Phenanthrene	2022/07/28		88	%	50 - 150
			D12-Benzo(a)anthracene	2022/07/28		94	%	50 - 150
			D12-Benzo(a)pyrene	2022/07/28		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2022/07/28		82	%	50 - 150
			D12-Benzo(ghi)perylene	2022/07/28		92	%	50 - 150
			D12-Benzo(k)fluoranthene	2022/07/28		92	%	50 - 150
			D12-Chrysene	2022/07/28		94	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2022/07/28		90	%	50 - 150
			D12-Perylene	2022/07/28		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2022/07/28		86	%	50 - 150
			D8-Acenaphthylene	2022/07/28		90	%	50 - 150
			D8-Naphthalene	2022/07/28		86	%	50 - 150
			1-Methylnaphthalene	2022/07/28		98	%	50 - 150
			1-Methylphenanthrene	2022/07/28		93	%	50 - 150
			2-Chloronaphthalene	2022/07/28		125	%	50 - 150
			2-Methylanthracene	2022/07/28		83	%	50 - 150
			2-Methylnaphthalene	2022/07/28		93	%	50 - 150
			3-Methylcholanthrene	2022/07/28		58	%	50 - 150
			7,12-Dimethylbenzo(a)anthracene	2022/07/28		68	%	50 - 150
			9,10-Dimethylanthracene	2022/07/28		50	%	50 - 200
			9-Methylphenanthrene	2022/07/28		95	%	N/A
			Acenaphthene	2022/07/28		93	%	50 - 150
			Acenaphthylene	2022/07/28		90	%	50 - 150
			Anthracene	2022/07/28		85	%	50 - 150
			Benzo(a)anthracene	2022/07/28		93	%	50 - 150
			Benzo(a)fluorene	2022/07/28		93	%	50 - 150
			Benzo(a)pyrene	2022/07/28		90	%	50 - 150
			Benzo(b)fluoranthene	2022/07/28		98	%	50 - 150
			Benzo(b)fluorene	2022/07/28		93	%	50 - 150
			Benzo(e)pyrene	2022/07/28		103	%	50 - 150
			Benzo(g,h,i)perylene	2022/07/28		100	%	50 - 150
			Benzo(k)fluoranthene	2022/07/28		95	%	50 - 150
			Biphenyl	2022/07/28		95	%	50 - 150
			Chrysene	2022/07/28		98	%	50 - 150
			Coronene	2022/07/28		85	%	50 - 150
			Dibenzo(a,h)anthracene	2022/07/28		93	%	50 - 150
			Dibenzo(a,e)pyrene	2022/07/28		93	%	50 - 150
			Fluoranthene	2022/07/28		90	%	50 - 150
			Fluorene	2022/07/28		95	%	50 - 150
			Indeno(1,2,3-cd)pyrene	2022/07/28		93	%	50 - 150
			m-Terphenyl	2022/07/28		93	%	50 - 150
			Naphthalene	2022/07/28		93	%	50 - 150
			o-Terphenyl	2022/07/28		93	%	50 - 150
			Perylene	2022/07/28		98	%	50 - 150
			Phenanthrene	2022/07/28		93	%	50 - 150
			p-Terphenyl	2022/07/28		90	%	50 - 150
			Pyrene	2022/07/28		93	%	50 - 150
			Quinoline	2022/07/28		10 (2)	%	50 - 150
			Tetralin	2022/07/28		105	%	50 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
8093063	CTC	RPD	1-Methylnaphthalene	2022/07/28	2.6		%	50
			1-Methylphenanthrene	2022/07/28	2.7		%	50
			2-Chloronaphthalene	2022/07/28	0		%	50
			2-Methylanthracene	2022/07/28	6.3		%	50
			2-Methylnaphthalene	2022/07/28	2.7		%	50
			3-Methylcholanthrene	2022/07/28	30 (1)		%	50
			7,12-Dimethylbenzo(a)anthracene	2022/07/28	7.7		%	50
			9,10-Dimethylanthracene	2022/07/28	16 (1)		%	50
			9-Methylphenanthrene	2022/07/28	2.7		%	50
			Acenaphthene	2022/07/28	2.7		%	50
			Acenaphthylene	2022/07/28	0		%	50
			Anthracene	2022/07/28	6.1		%	50
			Benzo(a)anthracene	2022/07/28	5.6		%	50
			Benzo(a)fluorene	2022/07/28	5.6		%	50
			Benzo(a)pyrene	2022/07/28	5.7		%	50
			Benzo(b)fluoranthene	2022/07/28	2.6		%	50
			Benzo(b)fluorene	2022/07/28	5.6		%	50
			Benzo(e)pyrene	2022/07/28	5.0		%	50
			Benzo(g,h,i)perylene	2022/07/28	5.1		%	50
			Benzo(k)fluoranthene	2022/07/28	5.4		%	50
			Biphenyl	2022/07/28	2.7		%	50
			Chrysene	2022/07/28	5.3		%	50
			Coronene	2022/07/28	3.0		%	50
			Dibenzo(a,h)anthracene	2022/07/28	5.6		%	50
			Dibenzo(a,e)pyrene	2022/07/28	5.6		%	50
			Fluoranthene	2022/07/28	2.8		%	50
			Fluorene	2022/07/28	2.7		%	50
			Indeno(1,2,3-cd)pyrene	2022/07/28	5.6		%	50
			m-Terphenyl	2022/07/28	2.7		%	50
			Naphthalene	2022/07/28	2.7		%	50
			o-Terphenyl	2022/07/28	2.7		%	50
			Perylene	2022/07/28	5.3		%	50
			Phenanthrene	2022/07/28	5.6		%	50
			p-Terphenyl	2022/07/28	5.7		%	50
			Pyrene	2022/07/28	2.7		%	50
			Quinoline	2022/07/28	77 (3)		%	50
			Tetralin	2022/07/28	4.9		%	50
8093063	CTC	Method Blank	D10-2-Methylnaphthalene	2022/07/28		82	%	50 - 150
			D10-Fluoranthene	2022/07/28		78	%	50 - 150
			D10-Phenanthrene	2022/07/28		82	%	50 - 150
			D12-Benzo(a)anthracene	2022/07/28		82	%	50 - 150
			D12-Benzo(a)pyrene	2022/07/28		80	%	50 - 150
			D12-Benzo(b)fluoranthene	2022/07/28		80	%	50 - 150
			D12-Benzo(ghi)perylene	2022/07/28		84	%	50 - 150
			D12-Benzo(k)fluoranthene	2022/07/28		86	%	50 - 150
			D12-Chrysene	2022/07/28		86	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2022/07/28		80	%	50 - 150
			D12-Perylene	2022/07/28		82	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2022/07/28		76	%	50 - 150
			D8-Acenaphthylene	2022/07/28		84	%	50 - 150
			D8-Naphthalene	2022/07/28		80	%	50 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1-Methylnaphthalene	2022/07/28	ND, RDL=0.30		ug	
			1-Methylphenanthrene	2022/07/28	ND, RDL=0.30		ug	
			2-Chloronaphthalene	2022/07/28	ND, RDL=0.30		ug	
			2-Methylanthracene	2022/07/28	ND, RDL=0.30		ug	
			2-Methylnaphthalene	2022/07/28	ND, RDL=0.30		ug	
			3-Methylcholanthrene	2022/07/28	ND, RDL=0.30		ug	
			7,12-Dimethylbenzo(a)anthracene	2022/07/28	ND, RDL=1.2		ug	
			9,10-Dimethylanthracene	2022/07/28	ND, RDL=0.30		ug	
			9-Methylphenanthrene	2022/07/28	ND, RDL=0.30		ug	
			Acenaphthene	2022/07/28	ND, RDL=0.30		ug	
			Acenaphthylene	2022/07/28	ND, RDL=0.30		ug	
			Anthracene	2022/07/28	ND, RDL=0.30		ug	
			Benzo(a)anthracene	2022/07/28	ND, RDL=0.30		ug	
			Benzo(a)fluorene	2022/07/28	ND, RDL=0.30		ug	
			Benzo(a)pyrene	2022/07/28	ND, RDL=0.30		ug	
			Benzo(b)Anthracene	2022/07/28	ND, RDL=0.30		ug	
			Benzo(b)fluoranthene	2022/07/28	ND, RDL=0.30		ug	
			Benzo(b)fluorene	2022/07/28	ND, RDL=0.30		ug	
			Benzo(e)pyrene	2022/07/28	ND, RDL=0.30		ug	
			Benzo(g,h,i)perylene	2022/07/28	ND, RDL=0.30		ug	
			Benzo(k)fluoranthene	2022/07/28	ND, RDL=0.30		ug	
			Biphenyl	2022/07/28	ND, RDL=0.30		ug	
			Chrysene	2022/07/28	ND, RDL=0.30		ug	
			Coronene	2022/07/28	ND, RDL=0.30		ug	
			Dibenzo(a,h)anthracene	2022/07/28	ND, RDL=0.30		ug	
			Dibenzo(a,c)anthracene	2022/07/28	ND, RDL=0.30		ug	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Dibenzo(a,e)pyrene	2022/07/28	ND, RDL=0.30		ug	
			Fluoranthene	2022/07/28	ND, RDL=0.30		ug	
			Fluorene	2022/07/28	ND, RDL=0.30		ug	
			Indeno(1,2,3-cd)pyrene	2022/07/28	ND, RDL=0.30		ug	
			m-Terphenyl	2022/07/28	ND, RDL=0.30		ug	
			Naphthalene	2022/07/28	ND, RDL=0.30		ug	
			o-Terphenyl	2022/07/28	ND, RDL=0.30		ug	
			Perylene	2022/07/28	ND, RDL=0.30		ug	
			Phenanthrene	2022/07/28	ND, RDL=0.30		ug	
			Picene	2022/07/28	ND, RDL=0.30		ug	
			p-Terphenyl	2022/07/28	ND, RDL=0.30		ug	
			Pyrene	2022/07/28	ND, RDL=0.30		ug	
			Quinoline	2022/07/28	ND, RDL=0.30		ug	
			Tetralin	2022/07/28	ND, RDL=0.30		ug	
			Triphenylene	2022/07/28	ND, RDL=0.30		ug	
8093092	WSS	Spiked Blank	1,2,3,4-Tetrachlorobenzene	2022/07/27		81	%	50 - 150
			1,2,3,5+1,2,4,5-Tetrachlorobenzene	2022/07/27		78	%	50 - 150
			1,2,3-Trichlorobenzene	2022/07/27		77	%	50 - 150
			1,2,4-Trichlorobenzene	2022/07/27		65	%	50 - 150
			1,2-Dichlorobenzene	2022/07/27		70	%	50 - 150
			1,3,5-Trichlorobenzene	2022/07/27		71	%	50 - 150
			1,3-Dichlorobenzene	2022/07/27		67	%	50 - 150
			1,4-Dichlorobenzene	2022/07/27		93	%	50 - 150
			13C6-Hexachlorobenzene	2022/07/27		86	%	30 - 130
			2H3-1,2,4-Trichlorobenzene	2022/07/27		64	%	30 - 130
			2H4-1,3-Dichlorobenzene	2022/07/27		67	%	30 - 130
			Hexachlorobenzene	2022/07/27		77	%	50 - 150
			Pentachlorobenzene	2022/07/27		79	%	50 - 150
8093092	WSS	RPD	1,2,3,4-Tetrachlorobenzene	2022/07/27	3.1		%	50
			1,2,3,5+1,2,4,5-Tetrachlorobenzene	2022/07/27	5.2		%	50
			1,2,3-Trichlorobenzene	2022/07/27	3.9		%	50
			1,2,4-Trichlorobenzene	2022/07/27	2.4		%	50
			1,2-Dichlorobenzene	2022/07/27	1.8		%	50
			1,3,5-Trichlorobenzene	2022/07/27	3.1		%	50
			1,3-Dichlorobenzene	2022/07/27	6.2		%	50
			1,4-Dichlorobenzene	2022/07/27	0.36		%	50
			Hexachlorobenzene	2022/07/27	2.4		%	50

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Pentachlorobenzene	2022/07/27	6.7		%	50
8093092	WSS	Method Blank	1,2,3,4-Tetrachlorobenzene	2022/07/28	ND, RDL=0.30		ug	
			1,2,3,5+1,2,4,5-Tetrachlorobenzene	2022/07/28	ND, RDL=0.30		ug	
			1,2,3-Trichlorobenzene	2022/07/28	ND, RDL=0.30		ug	
			1,2,4-Trichlorobenzene	2022/07/28	ND, RDL=0.30		ug	
			1,2-Dichlorobenzene	2022/07/28	ND, RDL=0.30		ug	
			1,3,5-Trichlorobenzene	2022/07/28	ND, RDL=0.30		ug	
			1,3-Dichlorobenzene	2022/07/28	ND, RDL=0.30		ug	
			1,4-Dichlorobenzene	2022/07/28	ND, RDL=0.30		ug	
			13C6-Hexachlorobenzene	2022/07/28		88	%	30 - 130
			2H3-1,2,4-Trichlorobenzene	2022/07/28		69	%	30 - 130
			2H4-1,3-Dichlorobenzene	2022/07/28		67	%	30 - 130
			Hexachlorobenzene	2022/07/28	ND, RDL=0.30		ug	
			Pentachlorobenzene	2022/07/28	ND, RDL=0.30		ug	
8093102	WSS	Spiked Blank	2,3,4,5-Tetrachlorophenol	2022/07/15		107	%	22 - 134
			2,3,4-Trichlorophenol	2022/07/15		115	%	22 - 134
			2,3,5-Trichlorophenol	2022/07/15		107	%	22 - 134
			2,4 + 2,5-Dichlorophenol	2022/07/15		102	%	22 - 134
			2,4,6-Trichlorophenol	2022/07/15		110	%	22 - 134
			2,6-Dichlorophenol	2022/07/15		105	%	22 - 134
			2-Chlorophenol	2022/07/15		89	%	22 - 134
			3,4,5-Trichlorophenol	2022/07/15		115	%	22 - 134
			3,4-Dichlorophenol	2022/07/15		104	%	22 - 134
			3,5-Dichlorophenol	2022/07/15		114	%	22 - 134
			4-Chlorophenol	2022/07/15		109	%	22 - 134
			D3-2,4-Dichlorophenol	2022/07/15		96	%	20 - 130
			D6-Pentachlorophenol	2022/07/15		99	%	20 - 130
			Pentachlorophenol	2022/07/15		138 (4)	%	22 - 134
			2,3,4,6-Tetrachlorophenol	2022/07/15		114	%	22 - 134
			2,3,5,6-Tetrachlorophenol	2022/07/15		125	%	22 - 134
			2,3,6-Trichlorophenol	2022/07/15		108	%	22 - 134
			2,3-Dichlorophenol	2022/07/15		102	%	22 - 134
			2,4,5-Trichlorophenol	2022/07/15		112	%	22 - 134
			3-Chlorophenol	2022/07/15		82	%	22 - 134
8093102	WSS	RPD	2,3,4,5-Tetrachlorophenol	2022/07/15	5.5		%	50
			2,3,4-Trichlorophenol	2022/07/15	8.6		%	50
			2,3,5-Trichlorophenol	2022/07/15	8.9		%	50
			2,4 + 2,5-Dichlorophenol	2022/07/15	9.9		%	50
			2,4,6-Trichlorophenol	2022/07/15	10		%	50
			2,6-Dichlorophenol	2022/07/15	9.9		%	50
			2-Chlorophenol	2022/07/15	12		%	50
			3,4,5-Trichlorophenol	2022/07/15	7.7		%	50

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			3,4-Dichlorophenol	2022/07/15	9.0		%	50
			3,5-Dichlorophenol	2022/07/15	9.2		%	50
			4-Chlorophenol	2022/07/15	8.5		%	50
			Pentachlorophenol	2022/07/15	6.7		%	50
			2,3,4,6-Tetrachlorophenol	2022/07/15	7.7		%	50
			2,3,5,6-Tetrachlorophenol	2022/07/15	8.1		%	50
			2,3,6-Trichlorophenol	2022/07/15	8.5		%	50
			2,3-Dichlorophenol	2022/07/15	9.2		%	50
			2,4,5-Trichlorophenol	2022/07/15	9.3		%	50
			3-Chlorophenol	2022/07/15	8.7		%	50
8093102	WSS	Method Blank	2,3,4,5-Tetrachlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2,3,4-Trichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2,3,5-Trichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2,4 + 2,5-Dichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2,4,6-Trichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2,6-Dichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2-Chlorophenol	2022/07/15	ND, RDL=0.30		ug	
			3,4,5-Trichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			3,4-Dichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			3,5-Dichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			4-Chlorophenol	2022/07/15	ND, RDL=0.30		ug	
			D3-2,4-Dichlorophenol	2022/07/15		125	%	20 - 130
			D6-Pentachlorophenol	2022/07/15		121	%	20 - 130
			Pentachlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2,3,4,6-Tetrachlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2,3,5,6-Tetrachlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2,3,6-Trichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2,3-Dichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			2,4,5-Trichlorophenol	2022/07/15	ND, RDL=0.30		ug	
			3-Chlorophenol	2022/07/15	ND, RDL=0.30		ug	
8112252	AGU	Spiked Blank	C13-1234678 HeptaCDD	2022/07/20		80	%	25 - 130
			C13-1234678 HeptaCDF	2022/07/20		76	%	25 - 130
			C13-123678 HexaCDD	2022/07/20		104	%	40 - 130
			C13-123678 HexaCDF	2022/07/20		80	%	40 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-12378 PentaCDD	2022/07/20		101	%	40 - 130
			C13-12378 PentaCDF	2022/07/20		81	%	40 - 130
			C13-123789 HexaCDF	2022/07/20		75	%	40 - 130
			C13-2378 TetraCDD	2022/07/20		104	%	40 - 130
			C13-2378 TetraCDF	2022/07/20		90	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2022/07/20		44	%	25 - 130
			2,3,7,8-Tetra CDD	2022/07/20		96	%	80 - 140
			1,2,3,7,8-Penta CDD	2022/07/20		101	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2022/07/20		100	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2022/07/20		119	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2022/07/20		119	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2022/07/20		95	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDD	2022/07/20		104	%	80 - 140
			2,3,7,8-Tetra CDF	2022/07/20		99	%	80 - 140
			1,2,3,7,8-Penta CDF	2022/07/20		107	%	80 - 140
			2,3,4,7,8-Penta CDF	2022/07/20		103	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2022/07/20		109	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2022/07/20		119	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2022/07/20		91	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2022/07/20		116	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2022/07/20		101	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2022/07/20		86	%	80 - 140
			1,2,3,4,6,7,8,9-Octa CDF	2022/07/20		100	%	80 - 140
8112252	AGU	RPD	2,3,7,8-Tetra CDD	2022/07/20	1.0		%	20
			1,2,3,7,8-Penta CDD	2022/07/20	4.8		%	20
			1,2,3,4,7,8-Hexa CDD	2022/07/20	2.0		%	20
			1,2,3,6,7,8-Hexa CDD	2022/07/20	2.6		%	20
			1,2,3,7,8,9-Hexa CDD	2022/07/20	8.8		%	20
			1,2,3,4,6,7,8-Hepta CDD	2022/07/20	2.1		%	20
			1,2,3,4,6,7,8,9-Octa CDD	2022/07/20	0		%	20
			2,3,7,8-Tetra CDF	2022/07/20	0		%	20
			1,2,3,7,8-Penta CDF	2022/07/20	0.93		%	20
			2,3,4,7,8-Penta CDF	2022/07/20	3.0		%	20
			1,2,3,4,7,8-Hexa CDF	2022/07/20	2.8		%	20
			1,2,3,6,7,8-Hexa CDF	2022/07/20	6.1		%	20
			2,3,4,6,7,8-Hexa CDF	2022/07/20	10		%	20
			1,2,3,7,8,9-Hexa CDF	2022/07/20	1.7		%	20
			1,2,3,4,6,7,8-Hepta CDF	2022/07/20	13		%	20
			1,2,3,4,7,8,9-Hepta CDF	2022/07/20	13		%	20
			1,2,3,4,6,7,8,9-Octa CDF	2022/07/20	0		%	20
8112252	AGU	Method Blank	C13-1234678 HeptaCDD	2022/07/20		77	%	25 - 130
			C13-1234678 HeptaCDF	2022/07/20		71	%	25 - 130
			C13-123678 HexaCDD	2022/07/20		106	%	40 - 130
			C13-123678 HexaCDF	2022/07/20		74	%	40 - 130
			C13-12378 PentaCDD	2022/07/20		91	%	40 - 130
			C13-12378 PentaCDF	2022/07/20		74	%	40 - 130
			C13-123789 HexaCDF	2022/07/20		81	%	40 - 130
			C13-2378 TetraCDD	2022/07/20		99	%	40 - 130
			C13-2378 TetraCDF	2022/07/20		82	%	40 - 130
			C13-Octachlorodibenzo-p-Dioxin	2022/07/20		43	%	25 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			2,3,7,8-Tetra CDD	2022/07/20	ND, EDL=6.8		pg	
			1,2,3,7,8-Penta CDD	2022/07/20	ND, EDL=8.2		pg	
			1,2,3,4,7,8-Hexa CDD	2022/07/20	ND, EDL=9.5		pg	
			1,2,3,6,7,8-Hexa CDD	2022/07/20	ND, EDL=8.3		pg	
			1,2,3,7,8,9-Hexa CDD	2022/07/20	ND, EDL=8.8		pg	
			1,2,3,4,6,7,8-Hepta CDD	2022/07/20	ND, EDL=11		pg	
			1,2,3,4,6,7,8,9-Octa CDD	2022/07/20	ND, EDL=8.8		pg	
			Total Tetra CDD	2022/07/20	ND, EDL=6.8		pg	
			Total Penta CDD	2022/07/20	ND, EDL=8.2		pg	
			Total Hexa CDD	2022/07/20	ND, EDL=8.8		pg	
			Total Hepta CDD	2022/07/20	ND, EDL=11		pg	
			2,3,7,8-Tetra CDF	2022/07/20	ND, EDL=9.1		pg	
			1,2,3,7,8-Penta CDF	2022/07/20	ND, EDL=8.9		pg	
			2,3,4,7,8-Penta CDF	2022/07/20	ND, EDL=8.8		pg	
			1,2,3,4,7,8-Hexa CDF	2022/07/20	ND, EDL=8.5		pg	
			1,2,3,6,7,8-Hexa CDF	2022/07/20	ND, EDL=7.8		pg	
			2,3,4,6,7,8-Hexa CDF	2022/07/20	ND, EDL=8.9		pg	
			1,2,3,7,8,9-Hexa CDF	2022/07/20	ND, EDL=9.7		pg	
			1,2,3,4,6,7,8-Hepta CDF	2022/07/20	ND, EDL=11		pg	
			1,2,3,4,7,8,9-Hepta CDF	2022/07/20	ND, EDL=13		pg	
			1,2,3,4,6,7,8,9-Octa CDF	2022/07/20	ND, EDL=9.4		pg	
			Total Tetra CDF	2022/07/20	ND, EDL=9.1		pg	
			Total Penta CDF	2022/07/20	ND, EDL=8.8		pg	
			Total Hexa CDF	2022/07/20	ND, EDL=8.7		pg	
			Total Hepta CDF	2022/07/20	ND, EDL=12		pg	
8135911	NTS	Spiked Blank	C13-233'44'55'-HeptaCB-(189)	2022/07/27		86	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2022/07/27		77	%	30 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-233'44'5'-HexaCB-(157)	2022/07/27		77	%	30 - 140
			C13-233'44'-PentaCB-(105)	2022/07/27		74	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2022/07/27		78	%	30 - 140
			C13-2344'5-PentaCB-(114)	2022/07/27		60	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2022/07/27		70	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2022/07/27		71	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2022/07/27		63	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2022/07/27		69	%	30 - 140
			C13-33'44'-TetraCB-(77)	2022/07/27		61	%	30 - 140
			C13-344'5-TetraCB-(81)	2022/07/27		58	%	30 - 140
			33'44'-TetraCB-(77)	2022/07/27		103	%	50 - 150
			344'5-TetraCB-(81)	2022/07/27		102	%	50 - 150
			233'44'-PentaCB-(105)	2022/07/27		106	%	50 - 150
			2344'5-PentaCB-(114)	2022/07/27		108	%	50 - 150
			23'44'5-PentaCB-(118)	2022/07/27		109	%	50 - 150
			23'44'5'-PentaCB-(123)	2022/07/27		105	%	50 - 150
			33'44'5-PentaCB-(126)	2022/07/27		98	%	50 - 150
			HexaCB-(156)+(157)	2022/07/27		104	%	N/A
			23'44'55'-HexaCB-(167)	2022/07/27		103	%	50 - 150
			33'44'55'-HexaCB-(169)	2022/07/27		99	%	50 - 150
			233'44'55'-HeptaCB-(189)	2022/07/27		98	%	50 - 150
8135911	NTS	RPD	33'44'-TetraCB-(77)	2022/07/27	2.9		%	30
			344'5-TetraCB-(81)	2022/07/27	0.98		%	30
			233'44'-PentaCB-(105)	2022/07/27	1.9		%	30
			2344'5-PentaCB-(114)	2022/07/27	0.93		%	30
			23'44'5-PentaCB-(118)	2022/07/27	3.7		%	30
			23'44'5'-PentaCB-(123)	2022/07/27	0.96		%	30
			33'44'5-PentaCB-(126)	2022/07/27	6.9		%	30
			HexaCB-(156)+(157)	2022/07/27	0		%	30
			23'44'55'-HexaCB-(167)	2022/07/27	1.9		%	30
			33'44'55'-HexaCB-(169)	2022/07/27	3.0		%	30
			233'44'55'-HeptaCB-(189)	2022/07/27	0		%	30
8135911	NTS	Method Blank	C13-233'44'55'-HeptaCB-(189)	2022/07/27		90	%	30 - 140
			C13-233'44'5-HexaCB-(156)	2022/07/27		81	%	30 - 140
			C13-233'44'5'-HexaCB-(157)	2022/07/27		81	%	30 - 140
			C13-233'44'-PentaCB-(105)	2022/07/27		76	%	30 - 140
			C13-23'44'55'-HexaCB-(167)	2022/07/27		82	%	30 - 140
			C13-2344'5-PentaCB-(114)	2022/07/27		64	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2022/07/27		72	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2022/07/27		68	%	30 - 140
			C13-33'44'55'-HexaCB-(169)	2022/07/27		72	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2022/07/27		67	%	30 - 140
			C13-33'44'-TetraCB-(77)	2022/07/27		60	%	30 - 140
			C13-344'5-TetraCB-(81)	2022/07/27		56	%	30 - 140
			33'44'-TetraCB-(77)	2022/07/27	ND, RDL=0.60		ng	
			344'5-TetraCB-(81)	2022/07/27	ND, RDL=0.60		ng	
			233'44'-PentaCB-(105)	2022/07/27	ND, RDL=0.60		ng	

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			2344'5-PentaCB-(114)	2022/07/27	ND, RDL=0.60		ng	
			23'44'5-PentaCB-(118)	2022/07/27	ND, RDL=0.60		ng	
			23'44'5'-PentaCB-(123)	2022/07/27	ND, RDL=0.60		ng	
			33'44'5-PentaCB-(126)	2022/07/27	ND, RDL=0.60		ng	
			HexaCB-(156)+(157)	2022/07/27	ND, RDL=1.2		ng	
			23'44'55'-HexaCB-(167)	2022/07/27	ND, RDL=0.60		ng	
			33'44'55'-HexaCB-(169)	2022/07/27	ND, RDL=0.60		ng	
			233'44'55'-HeptaCB-(189)	2022/07/27	ND, RDL=0.60		ng	
			Monochlorobiphenyl	2022/07/27	ND		ng	
			Dichlorobiphenyl	2022/07/27	ND		ng	
			Trichlorobiphenyl	2022/07/27	ND		ng	
			Tetrachlorobiphenyl	2022/07/27	ND		ng	
			Pentachlorobiphenyl	2022/07/27	ND		ng	
			Hexachlorobiphenyl	2022/07/27	ND		ng	
			Heptachlorobiphenyl	2022/07/27	ND		ng	
			Octachlorobiphenyl	2022/07/27	ND		ng	
			Nonachlorobiphenyl	2022/07/27	ND		ng	
			Decachlorobiphenyl	2022/07/27	ND		ng	
			Total PCB	2022/07/27	0		ng	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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.

(1) Recovery below spike criteria. Archive clean up generated similar results. Please review results with caution.

(2) Recoveries for Quinoline in SPIKE and SPIKE:D1 were below spike criteria. Archive cleanup generated similar results. Please view results with caution.

(3) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

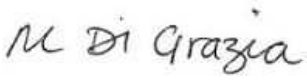
(4) Spike recovery of pentachlorophenol was above spike criteria. Samples were ND for pentachlorophenol.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS



Melissa DiGrazia, Operations Manager, HRMS Department

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 Signature Page.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Chain of Custody Form - AIR

37311

BUREAU VERITAS

6740 Campobello Rd
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CAM FCD-01302 /3

Page ____ of ____

CLIENT INFORMATION

Company Name: RWDI
Project Manager: Kirk Easto
e-mail: kirk.easto@rwdi.com
Address: 600 Southgate Dr. Guelph ontario

Phone: 519-100-5221 Fax: ____

SECTION

Sampled by: Mos /00

ANALYSIS REQUESTED

Field Sample ID	Total Volume Sampled	# of samples	Collection Date	Sample Collection Time	USEPA Method 29	USEPA Method 5	Env Canada PM/2	USEPA Method 26	CARB 430 modified	USEPA Method 0030 (VOST)
Stericycle M29 T1→T3		23	06/15-17		✓	✓				
Stericycle M29 Blanks		7			✓	✓				
Stericycle SUOC T1→T3		18					✓			
Stericycle SUOC Blanks		6					✓			
Stericycle M26 T1→T3		6						✓		
" " Blanks		3						✓		
Stericycle CARB 430 T1→T3		3							✓	
" " Blanks		1							✓	
Stericycle VOST T1→T3		3								✓
" " Blank		1								✓

TAT Requirement

STD 10 Business day ☑
Rush 5 Business day * ☐
Rush 2 Business day * ☐
* need approval from Bureau Veritas

PROJECT INFORMATION

Project #: 2202865
Name: Stericycle
PO #: 2202865
BV Quote #:
BV Contact:

REPORTING REQUIREMENTS

Summary Report only ☑
EDD ☐

Regulation ____

Notes

Please note if these samples are "Industrial Hygiene" samples
If submitting dustfall samples, please indicate the diameter of the jar opening in cm.

PROJECT SPECIFIC COMMENTS

M26 - Ammonia, HCl, HF
send results also to Mos@rwdi.com

Client Signature: M Astwell
Affiliation: RWDI
Date/Time: June 17 2022

Received by: DIPIKASINGH
Affiliation: BVlabs
Date/Time: 2022/06/17 17:55

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Bureau Veritas Laboratories' standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms available at http://www.bvlabs.com/terms-and-conditions

COC-1031 (11/2019)

12.4 | 12.2 | 14.8

RWDI Air Inc

Bureau Veritas Job Number: C2B5882
Report Date: 2022/05/09

Client Project #: 2202865

VOLATILE ORGANICS BY GC/MS (AIR SAMPLING MEDIA)

Bureau Veritas ID		SMQ710		
Sampling Date		2022/05/02 08:04		
	UNITS	**VOST PROOF #1-6**	**RDL**	**QC Batch**
Dichlorodifluoromethane (FREON 12)	ug	ND	0.050	7982576
Chloromethane	ug	ND	0.050	7982576
Vinyl Chloride	ug	ND	0.050	7982576
Bromomethane	ug	ND	0.050	7982576
Chloroethane	ug	ND	0.050	7982576
Trichlorofluoromethane (FREON 11)	ug	ND	0.050	7982576
Acetone (2-Propanone)	ug	ND	0.050	7982576
1,1-Dichloroethylene	ug	ND	0.050	7982576
Iodomethane	ug	ND	0.050	7982576
Carbon Disulfide	ug	ND	0.050	7982576
Methylene Chloride(Dichloromethane)	ug	ND	0.050	7982576
1,1-Dichloroethane	ug	ND	0.050	7982576
trans-1,2-Dichloroethylene	ug	ND	0.050	7982576
cis-1,2-Dichloroethylene	ug	ND	0.050	7982576
Chloroform	ug	ND	0.050	7982576
1,2-Dichloroethane	ug	ND	0.050	7982576
Methyl Ethyl Ketone (2-Butanone)	ug	ND	0.050	7982576
1,1,1-Trichloroethane	ug	ND	0.050	7982576
Carbon Tetrachloride	ug	ND	0.050	7982576
Benzene	ug	ND	0.050	7982576
1,1,2-Trichloroethane	ug	ND	0.050	7982576
1,2-Dichloropropane	ug	ND	0.050	7982576
Trichloroethylene	ug	ND	0.050	7982576
Dibromomethane	ug	ND	0.050	7982576
Bromodichloromethane	ug	ND	0.050	7982576
cis-1,3-Dichloropropene	ug	ND	0.050	7982576
trans-1,3-Dichloropropene	ug	ND	0.050	7982576
Dibromochloromethane	ug	ND	0.050	7982576
Methyl Isobutyl Ketone	ug	ND	0.050	7982576
Methyl Butyl Ketone (2-Hexanone)	ug	ND	0.050	7982576
Toluene	ug	ND	0.050	7982576
Ethylene Dibromide	ug	ND	0.050	7982576
Tetrachloroethylene	ug	ND	0.050	7982576
Chlorobenzene	ug	ND	0.050	7982576
1,1,1,2-Tetrachloroethane	ug	ND	0.050	7982576
Ethylbenzene	ug	ND	0.050	7982576
m / p-Xylene	ug	ND	0.10	7982576
Styrene	ug	ND	0.050	7982576
o-Xylene	ug	ND	0.050	7982576
Bromoform	ug	ND	0.050	7982576
1,1,2,2-Tetrachloroethane	ug	ND	0.050	7982576
1,2,3-Trichloropropane	ug	ND	0.050	7982576
1,3-Dichlorobenzene	ug	ND	0.050	7982576
1,4-Dichlorobenzene	ug	ND	0.050	7982576
1,2-Dichlorobenzene	ug	ND	0.050	7982576
Surrogate Recovery (%)				
Bromofluorobenzene	%	97		7982576
D10-Ethylbenzene (FS)	%	112		7982576
D4-1,2-Dichloroethane	%	101		7982576
D8-Toluene	%	100		7982576

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

Results relate only to the items tested.

APPENDIX K

PRAXAIR
Making our planet more productive

DocNumber: 311870

Praxair Distribution, Inc.
6055 Brent Drive
Toledo OH 43611
Tel: +1 (419) 729-7732
Fax: +1 (419) 729-2411
PGVP ID: F12020

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

PRAXAIR PKG PARIS P/H 80271
41 CONSOLIDATED DR
PARIS ON N3L 3G2

Certificate Issuance Date: 08/18/2020
Praxair Order Number: 22078024
Part Number: NI CD15O1E-AS
Customer PO Number: 71422796 Kitchener

Fill Date: 08/07/2020
Lot Number: 700010220D2
Cylinder Style & Outlet: AS CGA 590
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

Expiration Date:	08/18/2028	NIST Traceable
Cylinder Number:	DT0025920	Expanded Uncertainty
15.0 %	Carbon dioxide	± 0.1 %
14.9 %	Oxygen	± 0.1 %
Balance	Nitrogen	

ProSpec EZ Cert

Certification Information:

Certification Date: 08/18/2020 *Term:* 96 Months *Expiration Date:* 08/18/2028

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

O2 responses have been corrected for CO2 interference.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. *Component:* **Carbon dioxide**

Requested Concentration: 15.0 %
Certified Concentration: 15.0 %
Instrument Used: MKS 2030
Analytical Method: FTIR
Last Multipoint Calibration: 07/24/2020

First Analysis Data: **Date** 08/18/2020

Z:	0	**R:**	20.7	**C:**	15.3	**Conc:**	15
R:	20.5	**Z:**	0	**C:**	15.2	**Conc:**	15
Z:	0	**C:**	15.4	**R:**	20.5	**Conc:**	15.1

UOM: % **Mean Test Assay:** 15 %

Reference Standard: Type / Cylinder #: GMIS / CC110516
Concentration / Uncertainty: 20.23 % ±0.05 %
Expiration Date: 01/13/2026
Traceable to: SRM # / Sample # / Cylinder #: PRM / 3222577.01 / FF27613
SRM Concentration / Uncertainty: 20.008% / ±0.028%
SRM Expiration Date: 04/01/2020

Second Analysis Data: **Date**

Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0

UOM: % **Mean Test Assay:** %

2. *Component:* **Oxygen**

Requested Concentration: 15.0 %
Certified Concentration: 14.9 %
Instrument Used: Servomex 575
Analytical Method: Paramagnetic
Last Multipoint Calibration: 07/22/2020

First Analysis Data: **Date** 08/18/2020

Z:	0	**R:**	22.49	**C:**	14.9	**Conc:**	14.9
R:	22.49	**Z:**	0	**C:**	14.9	**Conc:**	14.9
Z:	0	**C:**	14.9	**R:**	22.49	**Conc:**	14.9

UOM: % **Mean Test Assay:** 14.9 %

Reference Standard: Type / Cylinder #: GMIS / SGAL2224
Concentration / Uncertainty: 22.49 % ±0.07 %
Expiration Date: 12/02/2027
Traceable to: SRM # / Sample # / Cylinder #: 2659a / 71-D-04 / CAL015785
SRM Concentration / Uncertainty: 20.72 / ±0.043%
SRM Expiration Date: 08/23/2021

Second Analysis Data: **Date**

Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0

UOM: % **Mean Test Assay:** %

Analyzed By **Mike Monnette**

Certified By **Edward E Zucal**

Making our world more productive

DocNumber: 476406

Linde Gas & Equipment Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

LINDE PKG PARIS P H 80271
41 CONSOLIDATED DR
PARIS ON N3L 3G2

Certificate Issuance Date: 06/08/2022
Linde Order Number: 63637000
Part Number: NI CD25CO7E-AS
Customer PO Number: 71976885 KIT

Fill Date: 05/03/2022
Lot Number: 70086212303
Cylinder Style & Outlet: AS CGA 590
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	**06/06/2030**	NIST Traceable
Cylinder Number:	**ALM-030572**	Expanded Uncertainty
24.85 %	**Carbon dioxide**	**± 0.07 %**
2031 ppm	**Carbon monoxide**	**± 7 ppm**
20.85 %	**Oxygen**	**± 0.03 %**
Balance	**Nitrogen**	

Certification Information:

Certification Date: 06/06/2022 *Term:* 96 Months *Expiration Date:* 06/06/2030

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

CO responses have been corrected for CO2 interference. CO responses have been corrected for O2 interference. CO2 responses have been corrected for Oxygen IR Broadening effect. O2 responses have been corrected for CO2 interference.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. *Component:* **Carbon dioxide**

Requested Concentration: 25 %
Certified Concentration: 24.85 %
Instrument Used: Horiba VIA-510 S/N 20C194WK
Analytical Method: NDIR
Last Multipoint Calibration: 06/06/2022

First Analysis Data: **Date** 06/06/2022

Z:	0	**R:**	25.01	**C:**	24.86	**Conc:**	24.85
R:	25.03	**Z:**	0	**C:**	24.87	**Conc:**	24.86
Z:	0	**C:**	24.85	**R:**	25.02	**Conc:**	24.84

UOM: % **Mean Test Assay:** 24.85 %

Reference Standard: Type / Cylinder #: GMIS / DT0011171
Concentration / Uncertainty: 25.01 % ±0.05 %
Expiration Date: 11/09/2025
Traceable to: SRM # / Sample # / Cylinder #: RGM / N/A / CC193512
SRM Concentration / Uncertainty: 26.99% / ±0.05%
SRM Expiration Date: 05/15/2023

Second Analysis Data: **Date**

Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0

UOM: % **Mean Test Assay:** %

2. *Component:* **Carbon monoxide**

Requested Concentration: 2000 ppm
Certified Concentration: 2031 ppm
Instrument Used: Horiba VIA-510 S/N 576876015
Analytical Method: NDIR
Last Multipoint Calibration: 06/06/2022

First Analysis Data: **Date** 06/06/2022

Z:	0	**R:**	2435	**C:**	2035	**Conc:**	2038
R:	2434	**Z:**	0	**C:**	2030	**Conc:**	2033
Z:	0	**C:**	2020	**R:**	2427	**Conc:**	2022

UOM: ppm **Mean Test Assay:** 2031 ppm

Reference Standard: Type / Cylinder #: GMIS / DT0017908
Concentration / Uncertainty: 2435 ppm ±7 ppm
Expiration Date: 07/12/2029
Traceable to: SRM # / Sample # / Cylinder #: SRM 2637a / 56-F-51 / CAL017069
SRM Concentration / Uncertainty: 2438.0 ppm / ±5.1 ppm
SRM Expiration Date: 07/07/2022

Second Analysis Data: **Date**

Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0

UOM: ppm **Mean Test Assay:** ppm

3. *Component:* **Oxygen**

Requested Concentration: 21 %
Certified Concentration: 20.85 %
Instrument Used: Siemens Oxymat 6E S/N 7MB20211AA000CA1
Analytical Method: Paramagnetic
Last Multipoint Calibration: 06/06/2022

First Analysis Data: **Date** 06/06/2022

Z:	0	**R:**	20.9	**C:**	20.85	**Conc:**	20.84
R:	20.91	**Z:**	0	**C:**	20.87	**Conc:**	20.86
Z:	0	**C:**	20.85	**R:**	20.91	**Conc:**	20.84

UOM: % **Mean Test Assay:** 20.85 %

Reference Standard: Type / Cylinder #: GMIS / ND29287
Concentration / Uncertainty: 20.90 % ±0.02 %
Expiration Date: 09/01/2028
Traceable to: SRM # / Sample # / Cylinder #: SRM 2659a / 71-E-19 / FF22331
SRM Concentration / Uncertainty: 20.863% / ±0.021%
SRM Expiration Date: 08/23/2021

Second Analysis Data: **Date**

Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0

UOM: % **Mean Test Assay:** %

Analyzed By **Courtney Zielke**

Certified By **Lissette Morales**

Making our world more productive

DocNumber: 444084

Linde Gas & Equipment Inc.
6055 Brent Drive
Toledo OH 43611
Tel: +1 (419) 729-7732
Fax: +1 (419) 729-2411
PGVP ID: F12021

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

LINDE PKG PARIS P H 80271
41 CONSOLIDATED DR
PARIS ON N3L 3G2

Certificate Issuance Date: 12/14/2021
Linde Order Number: 58252308
Part Number: NI ME87ME-AS
Customer PO Number: 71899099 KIT

Fill Date: 12/07/2021
Lot Number: 700011341UD
Cylinder Style & Outlet: AS CGA 350
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	**12/14/2029**	NIST Traceable
Cylinder Number:	**DT0032687**	Expanded Uncertainty
87.5 ppm	**Methane**	**± 0.6 ppm**
Balance	**Nitrogen**	

Certification Information:

Certification Date: 12/14/2021 *Term:* 96 Months *Expiration Date:* 12/14/2029

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. *Component:* **Methane**

Requested Concentration: 87.0 ppm
Certified Concentration: 87.5 ppm
Instrument Used: MKS 2030
Analytical Method: FTIR
Last Multipoint Calibration: 11/29/2021

Reference Standard: Type / Cylinder #: GMIS / EB0027439
Concentration / Uncertainty: 101.4 ppm ±0.5 ppm
Expiration Date: 05/25/2024
Traceable to: SRM # / Sample # / Cylinder #: 2751 / 212-C-04 / FF23181
SRM Concentration / Uncertainty: 98.28 ppm / ±0.52 ppm
SRM Expiration Date: 06/01/2016

First Analysis Data: **Date** 12/14/2021

Z:	0	**R:**	93.9	**C:**	81.5	**Conc:**	87.7
R:	94.4	**Z:**	0	**C:**	81.4	**Conc:**	87.6
Z:	0	**C:**	81.2	**R:**	94.5	**Conc:**	87.3

UOM: ppm **Mean Test Assay:** 87.5 ppm

Second Analysis Data: **Date**

Z:	0	**R:**	0	**C:**	0	**Conc:**	0
R:	0	**Z:**	0	**C:**	0	**Conc:**	0
Z:	0	**C:**	0	**R:**	0	**Conc:**	0

UOM: ppm **Mean Test Assay:** ppm

Analyzed By **Mike Monnette**

Certified By **Edward E Zucal**

Making our world more productive

DocNumber: 449122

Linde Gas & Equipment Inc.
6055 Brent Drive
Toledo OH 43611
Tel: +1 (419) 729-7732
Fax: +1 (419) 729-2411
PGVP ID: F12022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

LINDE PKG PARIS P H 80271
41 CONSOLIDATED DR
PARIS ON N3L 3G2

Certificate Issuance Date: 03/07/2022
Linde Order Number: 63637088
Part Number: NI NO2000S3E-AS
Customer PO Number: 71977226 KIT

Fill Date: 02/21/2022
Lot Number: 700012052WC
Cylinder Style & Outlet: AS CGA 660
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	**03/07/2030**	NIST Traceable
Cylinder Number:	**CC139358**	Expanded Uncertainty
1999 ppm	**Nitric oxide**	**± 8 ppm**
2014 ppm	**Sulfur dioxide**	**± 4 ppm**
Balance	**Nitrogen**	

For Reference Only: *NOx 2005 ppm*

Certification Information: *Certification Date:* 03/07/2022 *Term:* 96 Months *Expiration Date:* 03/07/2030

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. *Component:* **Nitric oxide**

Requested Concentration: 2000 ppm
Certified Concentration: 1999 ppm
Instrument Used: Thermo-42i HL
Analytical Method: Chemiluminescence
Last Multipoint Calibration: 02/21/2022

First Analysis Data: **Date** 02/28/2022

Z:	0	**R:**	2910	**C:**	1996	**Conc:**	1995
R:	2910	**Z:**	0	**C:**	2000	**Conc:**	1999
Z:	0	**C:**	1998	**R:**	2910	**Conc:**	1997

UOM: ppm **Mean Test Assay:** 1997 ppm

Reference Standard: Type / Cylinder #: GMIS / CC109020
Concentration / Uncertainty: 2908 ppm ±8 ppm
Expiration Date: 12/07/2027
Traceable to: SRM # / Sample # / Cylinder #: 2361a / 47-G-12 / FF22193
SRM Concentration / Uncertainty: 2989 / ±6.5 ppm
SRM Expiration Date: 02/20/2022

Second Analysis Data: **Date** 03/07/2022

Z:	0	**R:**	2910	**C:**	2002	**Conc:**	2001
R:	2910	**Z:**	0	**C:**	2002	**Conc:**	2001
Z:	0	**C:**	2002	**R:**	2910	**Conc:**	2001

UOM: ppm **Mean Test Assay:** 2001 ppm

2. *Component:* **Sulfur dioxide**

Requested Concentration: 2000 ppm
Certified Concentration: 2014 ppm
Instrument Used: AMETEK 921
Analytical Method: UV Spectrometry
Last Multipoint Calibration: 03/01/2022

First Analysis Data: **Date** 02/28/2022

Z:	0	**R:**	3381	**C:**	2013	**Conc:**	2013
R:	3381	**Z:**	0	**C:**	2016	**Conc:**	2016
Z:	0	**C:**	2017	**R:**	3381	**Conc:**	2017

UOM: ppm **Mean Test Assay:** 2015 ppm

Reference Standard: Type / Cylinder #: GMIS / EB0023342
Concentration / Uncertainty: 3381 ppm ±7 ppm
Expiration Date: 01/15/2027
Traceable to: SRM # / Sample # / Cylinder #: 1669a / 90-D-15 / CAL016298
SRM Concentration / Uncertainty: 3396 ppm / ±14 ppm
SRM Expiration Date: 01/05/2025

Second Analysis Data: **Date** 03/07/2022

Z:	0	**R:**	2449	**C:**	1456	**Conc:**	2010
R:	2449	**Z:**	0	**C:**	1456	**Conc:**	2010
Z:	0	**C:**	1456	**R:**	2449	**Conc:**	2010

UOM: ppm **Mean Test Assay:** 2010 ppm

Analyzed By **Kanykey Karabaeva**

Certified By **Edward E Zucal**

Environics

69 Industrial Park Rd E, Tolland CT 06084
https://www.environics.com/service-request
(860) 872-1111 info@environics.com

SERVICE REPORT

ATTN: Erich Hildebrandt, RWDI Air Inc.

DATE OF SERVICE: 3/31/2022
MODEL NUMBER: 4040
SERIAL NUMBER: 9110

SERVICE TYPE: **RECALIBRATION**
NEXT CALIBRATION DUE: **4/1/2023**

CONDITIONS AS OBSERVED AND WORK PERFORMED:

- Unit powers up properly.
- Unit cleaned and Purged, data verified.
- All valves checked, ok.
- Checked for any software updates
- Voltages checked – 5v, -15v, +15v, 24v.
- Battery voltage checked.
- Unit leak tested.
- Tested all MFC's with each port.
- Zeros on each MFC checked/adjusted.
- Spans checked/adjusted on all MFCs.
- As-found verification run for all MFCs.
- All MFCs recalibrated.
- Verified all MFCs @ 5 standard points, passed within 0.5%
- All cables and screw/nuts tightened, ok.

Service Technician

Environics

69 Industrial Park Rd E, Tolland CT 06084
https://www.environics.com/service-request
(860) 872-1111 info@environics.com

ENVIRONICS FLOW CONTROLLER CALIBRATION REPORT

Unit Summary		Std Conditions		MFC Summary	
Model #:	S4040	Temp:	32°F	MFC #:	1
Unit SN :	9110	Pressure:	29.92 in. Hg	MFC FS Flow:	10000
		Gas:	NITROGEN	MFC S/N:	0963707020

Flow Calibration Data is not performance data. This data is used by the system operating mode to improve the flow accuracy. The Flow Verification Data is performance data.

Flow Calibration Data

	Set Flow	True Flow
5%	500	510.775
10%	1000	1024.787
20%	2000	2057.788
30%	3000	3101.170
40%	4000	4139.185
50%	5000	5142.321
60%	6000	6188.481
70%	7000	7220.933
80%	8000	8206.634
90%	9000	9218.031
100%	10000	10237.355

All values in SCCM

Flow Verification Data

	Set Flow	True Flow	% dev
99%	9900	9908.610	0.09%
85%	8500	8504.098	0.05%
55%	5500	5519.099	0.35%
25%	2500	2501.400	0.06%
10%	1000	1003.675	0.37%

All values in SCCM

This calibration complies with ISO 17025-2005 [non-accredited] and is traceable to the National Institute of Standards and Technology (NIST). Calibration and verification are accomplished exclusively by qualified personnel following controlled procedures under ISO 9001:2015. For questions or concerns, contact Customer Service via our website, email or by phone, weekdays from 8AM - 4PM.

Verified by: [signature]

Date: 3/31/22

Environics
69 Industrial Park Rd E, Tolland CT 06084
https://www.environics.com/service-request
(860) 872-1111 info@environics.com

ENVIRONICS FLOW CONTROLLER CALIBRATION REPORT

Unit Summary		Std Conditions		MFC Summary	
Model #:	S4040	Temp:	32°F	MFC #:	2
Unit SN :	9110	Pressure:	29.92 in. Hg	MFC FS Flow:	10000
		Gas:	NITROGEN	MFC S/N:	0963707021

Flow Calibration Data is not performance data. This data is used by the system operating mode to improve the flow accuracy. The Flow Verification Data is performance data.

Flow Calibration Data

	Set Flow	True Flow
5%	500	522.572
10%	1000	1067.074
20%	2000	2129.179
30%	3000	3175.969
40%	4000	4223.639
50%	5000	5225.616
60%	6000	6232.556
70%	7000	7283.087
80%	8000	8242.227
90%	9000	9235.964
100%	10000	10206.802

All values in SCCM

Flow Verification Data

	Set Flow	True Flow	% dev
99%	9900	9920.267	0.20%
85%	8500	8504.729	0.06%
55%	5500	5512.261	0.22%
25%	2500	2499.342	-0.03%
10%	1000	997.693	-0.23%

All values in SCCM

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Verified by: Ashton Atwell Date: 3/31/23

Environics

69 Industrial Park Rd E, Tolland CT 06084
https://www.environics.com/service-request
(860) 872-1111 info@environics.com

ENVIRONICS FLOW CONTROLLER CALIBRATION REPORT

Unit Summary		Std Conditions		MFC Summary	
Model #:	S4040	Temp:	32°F	MFC #:	3
Unit SN :	9110	Pressure:	29.92 in. Hg	MFC FS Flow:	1000
		Gas:	NITROGEN	MFC S/N:	0963709009

Flow Calibration Data is not performance data. This data is used by the system operating mode to improve the flow accuracy. The Flow Verification Data is performance data.

Flow Calibration Data

	Set Flow	True Flow
5%	50	48.332
10%	100	99.235
20%	200	202.785
30%	300	305.759
40%	400	408.110
50%	500	510.653
60%	600	613.373
70%	700	716.590
80%	800	822.814
90%	900	920.441
100%	1000	1027.899

All values in SCCM

Flow Verification Data

	Set Flow	True Flow	% dev
99%	990	987.387	-0.26%
85%	850	851.654	0.19%
55%	550	549.734	-0.05%
25%	250	249.439	-0.22%
10%	100	100.400	0.40%

All values in SCCM

This calibration complies with ISO 17025-2005 [non-accredited] and is traceable to the National Institute of Standards and Technology (NIST). Calibration and verification are accomplished exclusively by qualified personnel following controlled procedures under ISO 9001:2015. For questions or concerns, contact Customer Service via our website, email or by phone, weekdays from 8AM - 4PM.

Verified by: Austin Atwood Date: 3/31/22

Environics

69 Industrial Park Rd E, Tolland CT 06084
https://www.environics.com/service-request
(860) 872-1111 info@environics.com

ENVIRONICS FLOW CONTROLLER CALIBRATION REPORT

Unit Summary		Std Conditions		MFC Summary	
Model #:	S4040	Temp:	32°F	MFC #:	4
Unit SN :	9110	Pressure:	29.92 in. Hg	MFC FS Flow:	100
		Gas:	NITROGEN	MFC S/N:	0963711002

Flow Calibration Data is not performance data. This data is used by the system operating mode to improve the flow accuracy. The Flow Verification Data is performance data.

Flow Calibration Data

	Set Flow	True Flow
5%	5	4.651
10%	10	9.820
20%	20	20.140
30%	30	30.385
40%	40	40.730
50%	50	50.868
60%	60	61.135
70%	70	71.499
80%	80	81.642
90%	90	92.380
100%	100	102.237

All values in SCCM

Flow Verification Data

	Set Flow	True Flow	% dev
99%	99	99.347	0.35%
85%	85	85.134	0.16%
55%	55	55.096	0.17%
25%	25	24.975	-0.10%
10%	10	9.956	-0.44%

All values in SCCM

This calibration complies with ISO 17025-2005 [non-accredited] and is traceable to the National Institute of Standards and Technology (NIST). Calibration and verification are accomplished exclusively by qualified personnel following controlled procedures under ISO 9001:2015. For questions or concerns, contact Customer Service via our website, email or by phone, weekdays from 8AM - 4PM.

Verified by: Ashton A Tunnell Date: 3/31/22

Dry Gas Meter Calibration Certificate

DGM Console ID: G
DGM Serial #: -
Calibration Date: 2022-02-16
Calibrated by KDR

Barometric Pressure	735.06	mmHg
	98.00	kPa
Ambient T	22.4	°C
%r.H	15.00%	
W	0.0025054	lb/lb
B_{wo}	0.0040	ft³/ft³

LEAK CHECK	DGM (ft³)	WGM (L)
intial value	437.85	988.84
final value	437.94	991.81
time (1 min)	1	1
Pass/Fail	PASS	PASS

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Dry Gas Meter Values									Wet Gas Meter Values										OSTC
Δ H	Δ H	Initial Vol.	Final Vol.	Volume (Vd)	Temp inlet	Temp outlet	Temp Avg (td)	Time	Δ M	Δ M	Initial Vol.	Final Vol.	Volume (Vw)	Temp inlet	Temp outlet	Temp (tw)	Calibration Factors		Tolerance
(in. H_2O)	(cm H_2O)	(ft³)	(ft³)	(m³)	(°F)	(°F)	(°C)	(min)	Pa	(cm H_2O)	(L)	(L)	(m³)	(°C)	(°C)	(°C)	Y	Δ $H_@$	Y (<±2%)
0.25	0.635	437.94	443.82	0.167	74	74	23.3	20	20	0.20	991.81	1160.54	0.169	25	25.0	25.00	1.003	1.692	1.9%
0.25	0.635	443.82	449.73	0.167	74	74	23.3	20	20	0.20	160.54	330.11	0.170	25	25.0	25.00	1.003	1.675	1.9%
0.25	0.635	449.73	455.61	0.167	74	74	23.3	20	20	0.20	330.11	498.18	0.168	25	25.0	25.00	0.999	1.705	1.5%
0.5	1.270	455.61	463.94	0.236	74	74	23.3	20	20	0.20	498.18	734.94	0.237	24.0	24.0	24	0.996	1.709	1.2%
0.5	1.270	463.94	472.30	0.237	74	74	23.3	20	20	0.20	734.94	971.35	0.236	24	24.0	24	0.991	1.714	0.7%
0.5	1.270	472.30	480.65	0.236	75	75	23.9	20	20	0.20	971.35	1206.70	0.235	24	24.0	24	0.990	1.726	0.6%
1	2.540	480.65	489.51	0.251	75	75	23.9	15	40	0.41	206.70	454.62	0.248	23.5	23.5	23.5	0.983	1.748	-0.1%
1	2.540	489.51	498.35	0.250	75	75	23.9	15	40	0.41	454.62	701.32	0.247	23	23.0	23	0.982	1.759	-0.2%
1	2.540	498.35	507.26	0.252	76	76	24.4	15	40	0.41	701.32	949.16	0.248	23	23.0	23	0.981	1.740	-0.3%
2	5.080	507.26	517.14	0.280	77	77	25.0	12	60	0.61	949.16	1222.52	0.273	23	23.0	23	0.975	1.836	-0.9%
2	5.080	517.14	527.06	0.281	77	77	25.0	12	60	0.61	222.52	495.99	0.273	23	23.0	23	0.972	1.834	-1.3%
2	5.080	527.06	537.00	0.281	77	77	25.0	12	60	0.61	495.99	769.52	0.274	23	23.0	23	0.970	1.833	-1.4%
4	10.160	537.01	548.36	0.321	70	70	21.1	10	80	0.82	769.52	1089.92	0.320	23	23.0	23	0.977	1.899	-0.7%
4	10.160	548.36	559.75	0.323	71	71	21.7	10	80	0.82	89.92	408.82	0.319	23	23.0	23	0.971	1.913	-1.3%
4	10.160	559.75	571.11	0.322	72	72	22.2	10	80	0.82	408.82	725.56	0.317	23	23.0	23	0.969	1.936	-1.6%
																AVERAGE =	**0.9843**	**1.7813**	

Psychrometric Calculator
http://www.sugartech.co.za/psychro/index.php

How to use Pschrometic Calcutor
1) Dry Buld Temp = Ambient Temp of room
2) Select Relat. Humidity
3) Enter Relat. Humidity value
4) Calculate
5) Select IP Unit
6) W= Humidity Ratio

Dry Gas Meter Calibration Certificate

DGM Console ID: H
DGM Serial #: -
Calibration Date: 2022-02-17
Calibrated by KDR

Barometric Pressure	728.31	mmHg
	97.10	kPa
Ambient T	22.7	°C
%r.H	27.00%	
W	0.00460814	lb/lb
B_{wo}	0.0074	ft³/ft³

LEAK CHECK	DGM (ft³)	WGM (L)
intial value	0.00	725.56
final value	0.08	727.80
time (1 min)	1	1
Pass/Fail	PASS	PASS

`

Dry Gas Meter Values									Wet Gas Meter Values										OSTC
Δ H	Δ H	Initial Vol.	Final Vol.	Volume (Vd)	Temp inlet	Temp outlet	Temp Avg (td)	Time	Δ M	Δ M	Initial Vol.	Final Vol.	Volume (Vw)	Temp inlet	Temp outlet	Temp (tw)	Calibration Factors		Tolerance
(in. H_2O)	(cm H_2O)	(ft³)	(ft³)	(m³)	(°F)	(°F)	(°C)	(min)	Pa	(cm H_2O)	(L)	(L)	(m³)	(°C)	(°C)	(°C)	Y	Δ $H_@$	Y (<±2%)
0.25	0.635	0.08	6.06	0.169	70	70	21.1	20	20	0.20	727.80	897.86	0.170	23	23.0	23.00	0.989	1.682	0.8%
0.25	0.635	6.06	12.02	0.169	72	72	22.2	20	20	0.20	897.86	1066.01	0.168	23	23.0	23.00	0.986	1.714	0.5%
0.25	0.635	12.02	18.05	0.171	72	72	22.2	20	20	0.20	66.01	235.47	0.169	23	23.0	23.00	0.983	1.688	0.1%
0.5	1.270	18.05	26.42	0.237	73	73	22.8	20	20	0.20	235.47	470.18	0.235	22.5	22.5	22.5	0.982	1.752	0.1%
0.5	1.270	26.42	34.79	0.237	72	72	22.2	20	20	0.20	470.18	706.34	0.236	23	23.0	23	0.985	1.740	0.4%
0.5	1.270	34.79	43.20	0.238	73	73	22.8	20	20	0.20	706.34	941.78	0.235	23	23.0	23	0.979	1.747	-0.2%
1	2.540	43.20	52.03	0.250	73	73	22.8	15	40	0.41	941.78	1189.07	0.247	23	23.0	23	0.979	1.786	-0.2%
1	2.540	52.03	60.85	0.250	74	74	23.3	15	40	0.41	189.07	435.53	0.246	22.5	22.5	22.5	0.981	1.788	-0.1%
1	2.540	60.85	69.66	0.250	74	74	23.3	15	40	0.41	435.53	681.74	0.246	22	22.0	22	0.982	1.786	0.0%
2	5.080	69.66	79.44	0.277	74	74	23.3	12	60	0.61	681.74	955.49	0.274	22	22.0	22	0.981	1.858	0.0%
2	5.080	79.44	89.26	0.278	74	74	23.3	12	60	0.61	955.49	1229.94	0.274	22	22.0	22	0.980	1.849	-0.2%
2	5.080	89.26	99.09	0.278	74	74	23.3	12	60	0.61	229.94	504.27	0.274	22	22.0	22	0.979	1.850	-0.3%
4	10.160	99.09	110.34	0.319	75	75	23.9	10	80	0.82	504.27	819.34	0.315	22	22.0	22	0.979	1.964	-0.3%
4	10.160	110.34	121.64	0.320	76	76	24.4	10	80	0.82	819.34	1135.04	0.316	22	22.0	22	0.978	1.952	-0.3%
4	10.160	121.64	132.94	0.320	77	77	25.0	10	80	0.82	135.04	450.20	0.315	22	22.0	22	0.978	1.955	-0.3%
																AVERAGE =	**0.9814**	**1.8074**	

Psychrometric Calculator
http://www.sugartech.co.za/psychro/index.php

How to use Pschrometic Calcutor
1) Dry Buld Temp = Ambient Temp of room
2) Select Relat. Humidity
3) Enter Relat. Humidity value
4) Calculate
5) Select IP Unit
6) W= Humidity Ratio

RWDI- EPA Method 205 Field Evaluation (as per Section 3.2)

High-Level Supply Gas Cylinder number: DT0025920

Concentration: 14.9 %

	Environics Condition #1					
	Time	Environics Concentration	Analyzer Response	Absolute Difference	Percentage Difference[1]	Response Variation[2]
1	7:00	10.00	9.98	0.02	-0.20%	0.00%
2	7:06	10.00	9.97	0.03	-0.30%	-0.10%
3	7:13	10.00	9.99	0.01	-0.10%	0.10%
		Average	9.98	0.02	-0.20%	

[1]Analyzer response can not average more than 2% from the Environics concentration: Pass

[2]No analyzer response can differ more than 2% from the average of the analyzer responses: Pass

	Environics Condition #2					
	Time	Environics Concentration	Analyzer Response	Absolute Difference	Percentage Difference[1]	Response Variation[2]
1	7:03	14.90	14.86	0.04	-0.27%	0.04%
2	7:10	14.90	14.82	0.08	-0.54%	-0.22%
3	7:16	14.90	14.88	0.02	-0.13%	0.18%
		Average	14.85	0.05	-0.31%	

[1]Analyzer response can not average more than 2% from the Environics concentration: Pass

[2]No analyzer response can differ more than 2% from the average of the analyzer responses: Pass

Direct Gas Cylinder number: _____

Concentration: 10.0 %

	Direct Gas Cylinder					
	Time	Cylinder Concentration	Analyzer Response	Absolute Difference	Percentage Difference[1]	Response Variation[2]
1	7:20	10.00	9.97	0.03	-0.30%	-0.10%
2	7:23	10.00	9.99	0.01	-0.10%	0.10%
3	7:26	10.00	9.98	0.02	-0.20%	0.00%
		Average	9.98	0.02	-0.20%	

[1]Analyzer response can not average more than 2% from the Environics concentration: Pass

[2]No analyzer response can differ more than 2% from the average of the analyzer responses: Pass

S-Type Pitot Tube Calibration

Pitot ID: RWDI 3' #2 (Calgary) **Date:** February 10, 2022

Calibrated By: KDR **$C_{p\ (std)}$:** 0.998

Temperature (°F): 73.6 **Static Pressure ("H_2O):** 0.55

Barometric Pressure ("Hg): 28.6 **Average C_p:** 0.836

			Side A			Side B		
Fan Speed (Hz)	**Velocity (FPM)**	**$\Delta P_{(std)}$**	**$\Delta P_{(s)}$**	**$C_{p(s)}$**	**Devation $C_{p(s)} - C_{p(avg)}$**	**$\Delta P_{(s)}$**	**$C_{p(s)}$**	**Devation $C_{p(s)} - C_{p(avg)}$**
20	1328	0.11	0.16	0.827	-0.005	0.16	0.827	-0.003
33	2501	0.39	0.56	0.833	0.007	0.57	0.826	0.000
45	3468	0.75	1.05	0.843	0.011	1.05	0.843	0.013
60	4566	1.30	1.90	0.826	-0.007	1.90	0.826	-0.005
			Average	**0.832**		Average	**0.830**	

Difference between $C_{p(A)}$ and $C_{p(B)}$ = **0.0018** **PASS**

Nozzle Diameter (in.)	**Fan Speed (Hz)**	**Velocity (FPM)**	**$\Delta P_{(std)}$**	**$\Delta P_{(s)}$**	**$C_{p(s)}$**	**Average $C_{P(s)}$**
.125"	52	3903	0.95	1.40	0.822	0.824
	60	4566	1.30	1.90	0.826	
.187"	33	2501	0.39	0.57	0.826	0.825
	45	3468	0.75	1.10	0.824	
	60	4566	1.30	1.90	0.826	
.250"	20	1266	0.10	0.14	0.843	0.849
	27	2193	0.30	0.41	0.854	
	33	2533	0.40	0.55	0.851	
.375"	20	1328	0.11	0.15	0.855	0.849
	27	2002	0.25	0.35	0.843	
.500"	16	1059	0.07	0.10	0.835	0.839
	20	1266	0.10	0.14	0.843	

S-Type Pitot tube calibration

Pitot ID	RWDI 4' #4	Date	2022-02-04
Calibrated By	KDR	$C_{p\ (std)}$	0.998
Temperature F^{o}	72.6	Static	0.55
Barometric $_{inHG}$	29.06	AVG	0.828

Fan Speed (Htz)	FPM	Nozzle Size	$\Delta P_{(STD)}$	$\Delta P_{(S\text{-}Type)}$	$C_{p\ (S\text{-}TYPE)}$	Pitot Factor C_P
35	2686.233	-	0.45	0.63	0.843464	0.837
42	3326.304		0.69	0.98	0.837418	
49	3882.41		0.94	1.35	0.832775	
55	4386.6		1.2	1.7	0.838488	
60	4738.07		1.4	2	0.834987	
35	2686.233	.125"	0.45	0.63	0.843464	0.837
42	3302.113		0.68	0.98	0.831327	
49	3861.704		0.93	1.35	0.828333	
55	4294.241		1.15	1.6	0.846096	
60	4738.07		1.4	2	0.834987	
35	2715.916	.187"	0.46	0.65	0.839562	0.833
42	3350.321		0.7	1	0.834987	
49	3903.006		0.95	1.35	0.837193	
55	4386.6		1.2	1.75	0.826423	
60	4738.07		1.4	2.05	0.824741	
35	2803.080	.250"	0.49	0.69	0.841016	0.833
42	3397.846		0.72	1.05	0.826423	
49	3943.877		0.97	1.4	0.830716	
55	4386.600		1.2	1.75	0.826423	
60	4821.936		1.45	2.05	0.839339	
35	2686.233	.325"	0.45	0.64	0.836848	0.827
42	3350.321		0.7	1.05	0.814864	
49	3903.006		0.95	1.4	0.822107	
55	4477.055		1.25	1.8	0.831667	
60	4821.936		1.45	2.1	0.829287	
35	2686.233	.375"	0.45	0.64	0.836848	0.827
42	3374.167		0.71	1.05	0.820663	
49	3903.006		0.95	1.4	0.822107	
55	4386.6		1.2	1.75	0.826423	
60	4821.936		1.45	2.1	0.829287	
35	2686.233	0.435"	0.45	0.65	0.830386	0.822
42	3302.113		0.68	0.98	0.831327	
49	3903.006		0.95	1.4	0.822107	
55	4294.241		1.15	1.75	0.809022	
60	4738.07		1.4	2.1	0.814864	

35	2686.233	.500"	0.45	0.67	0.817898	0.820
42	3277.743		0.67	0.98	0.825192	
49	3903.006		0.95	1.4	0.822107	
55	4294.241		1.15	1.75	0.809022	
60	4738.07		1.4	2.05	0.824741	

VOST Calibration Certificate

Calibration Date: 18-Feb-22
DGM Console ID: RWDI - VOST - Clean Air
DGM Serial #: RWDI No. 1107
Barometric Pressure: 97.90 kPa 979 mbar
W (lb/lb) 0.001835
%r.H 11.00% **B_{wo} (ft^3/ft^3)** 0.0029 Ambient T 28 C

leak check	VOST	WGM
intial value	0	600.50
final value	6.7	609.85
time (1 min)	1 min	1 min
Pass/Fail	PASS	PASS

Calibration Done By: KDR

Dry Gas Meter Values													Wet Gas Meter Values						Calibration		US EPA	
	Rotameter	Volume (Vd)					Temperature				Time	Δ M	Volume (Vw)			Temp (t_w)			Factor	Tolerance	Tolerance A	Tolerance B
Δ H	(Middle of Ball)	Initial	Final	Total	inlet	outlet	inlet	outlet	Avg (t_d)				Initial	Final	Total	inlet	outlet	Avg (t_w)				
(" H_2O)	(L/min)	(L)	(L)	(L)	©	©	(°F)	(°F)	(°F)	(°C)	(min)	(hPa H_2O)	(L)	(L)	(L)	(°C)	(°C)	(°C)	Y	± 2%	Y (>0.95, <1.05)	Y (0.03)
0.7	0.5	6.679	18.79	12.11	24.00	23.00	75.2	73.4	74.3	23.5	20	5	609.85	622.28	12.430	22	22	22	1.032	0.4%	VALID	VALID
0.7	0.5	18.789	31.09	12.30	26.00	25.00	78.8	77	77.9	25.5	20	5	622.28	634.76	12.48	22	22	22	1.027	-0.1%	VALID	VALID
0.7	0.5	31.092	43.37	12.28	27.00	26.00	80.6	78.8	79.7	26.5	20	5	634.76	647.08	12.32	22	22	22	1.019	-0.9%	VALID	VALID
Average				12.23					77.3						12.41			22.0	1.026			
1.2	1.0	54.414	65.10	10.69	28.00	27.00	82.4	80.6	81.5	27.5	10	10	658.22	668.94	10.72	22.5	23	22.5	1.024	-0.3%	VALID	VALID
1.2	1.0	65.101	75.78	10.68	29.00	28.00	84.2	82.4	83.3	28.5	10	10	668.94	679.60	10.66	22.5	23	22.5	1.023	-0.5%	VALID	VALID
1.2	1.0	75.778	86.61	10.83	29.00	28.00	84.2	82.4	83.3	28.5	10	10	679.60	690.38	10.78	22.5	23	22.5	1.020	-0.8%	VALID	VALID
Average				10.73					82.7						10.72			22.5	1.022			
2.2	1.9	86.609	106.615	20.01	29.00	28.00	84.2	82.4	83.3	28.5	10	20	690.38	710.35	19.97	22.5	23	22.5	1.030	0.2%	VALID	VALID
2.2	1.9	106.615	126.775	20.16	29.00	28.00	84.2	82.4	83.3	28.5	10	20	710.35	730.45	20.1	22.5	23	22.5	1.029	0.1%	VALID	VALID
2.2	1.9	126.775	147.026	20.25	30.00	28.00	86	82.4	84.2	29.0	10	20	730.45	750.79	20.34	22.5	23	22.5	1.038	1.0%	VALID	VALID
Average				20.14					83.6						20.14			22.5	1.032			
3	2.4	147.026	162.366	15.60	30.00	29.00	86	84.2	85.1	29.5	6	40	750.79	765.98	15.19	23	23	23	1.024	-0.4%	VALID	VALID
3	2.4	162.366	177.690	15.32	25.00	24.00	77	75.2	76.1	24.5	6	40	765.98	781.30	15.32	23	23	23	1.034	0.6%	VALID	VALID
3	2.4	177.690	192.964	15.27	25.00	24.00	77	75.2	76.1	24.5	6	40	781.30	796.56	15.26	23	23	23	1.033	0.6%	VALID	VALID
Average				15.40					79.1						15.25667			23.0	1.031			
																		AVERAGE =	1.028			

For Calculating W(lb/lb)
http://www.sugartech.co.za/psychro/index.php

How to use Pschrometic Calcutor
1) Dry Buld Temp = Ambient Temp of room
2) Select Relat. Humidity
3) Enter Relat. Humidity value
4) Calculate
5) Select IP Unit
6) W= Humidity Ratio

APPENDIX L

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/15/2022 9:18	12.01	1.03	39.42	1024.3	1065.1	6.76	32.2	54.4	22.2	47.7	7.98	7.47	7.26	39.78	40.05823	0.00	NORMAL
6/15/2022 9:19	11.90	1.20	41.40	1024.2	1066.7	6.76	32.2	54.4	22.2	47.7	7.98	7.47	7.26	39.78	40.05939	0.00	NORMAL
6/15/2022 9:20	11.74	0.39	49.01	1024.0	1067.8	6.76	32.2	54.4	22.2	47.7	7.98	7.47	7.27	39.78	40.06356	0.00	NORMAL
6/15/2022 9:21	11.95	0.25	48.55	1023.9	1067.5	6.76	32.2	54.4	22.2	47.7	7.99	7.47	7.27	39.79	40.06451	0.00	NORMAL
6/15/2022 9:22	11.99	0.53	36.16	1023.8	1068.2	6.76	32.2	54.4	22.2	47.7	7.99	7.46	7.26	39.79	40.06678	0.00	NORMAL
6/15/2022 9:23	11.86	0.21	46.53	1023.7	1069.6	6.77	32.3	54.4	22.2	47.7	7.99	7.46	7.26	39.79	40.06839	0.00	NORMAL
6/15/2022 9:24	11.75	0.53	44.07	1023.5	1068.7	6.77	32.3	54.4	22.2	47.7	7.99	7.46	7.26	39.79	40.07333	0.00	NORMAL
6/15/2022 9:25	11.90	0.36	40.87	1023.4	1064.6	6.77	32.3	54.4	22.2	47.7	7.99	7.46	7.26	39.79	40.0765	0.00	NORMAL
6/15/2022 9:26	12.22	0.24	38.26	1023.2	1063.3	6.77	32.3	54.4	22.2	47.7	7.99	7.46	7.26	39.79	40.07828	0.00	NORMAL
6/15/2022 9:27	12.04	0.33	39.84	1023.1	1065.0	6.77	32.3	54.4	22.2	47.7	7.99	7.46	7.26	39.79	40.07973	0.00	NORMAL
6/15/2022 9:28	11.90	0.29	40.07	1023.0	1067.0	6.77	32.3	54.4	22.2	47.7	7.99	7.47	7.26	39.79	40.08189	0.00	NORMAL
6/15/2022 9:29	11.93	0.22	50.21	1022.8	1067.2	6.77	32.3	54.4	22.2	47.7	7.99	7.48	7.26	39.79	40.08395	0.00	NORMAL
6/15/2022 9:30	12.18	0.76	44.11	1022.7	1066.9	6.77	32.3	54.4	22.1	47.7	7.98	7.49	7.26	39.79	40.08623	0.00	NORMAL
6/15/2022 9:31	12.22	0.99	39.65	1022.5	1066.7	6.77	32.3	54.4	22.1	47.7	7.97	7.49	7.26	39.79	40.08906	0.00	NORMAL
6/15/2022 9:32	12.08	0.66	37.10	1022.4	1066.2	6.77	32.3	54.4	22.1	47.7	7.96	7.50	7.26	39.79	40.08895	0.00	NORMAL
6/15/2022 9:33	12.10	0.45	39.71	1022.2	1064.2	6.77	32.3	54.4	22.1	47.7	7.96	7.50	7.26	39.79	40.08818	0.00	NORMAL
6/15/2022 9:34	12.32	0.34	39.40	1022.0	1064.2	6.78	32.3	54.4	22.1	47.7	7.96	7.50	7.26	39.79	40.0904	0.00	NORMAL
6/15/2022 9:35	12.41	0.35	37.93	1021.9	1066.3	6.78	32.3	54.4	22.1	47.7	7.96	7.50	7.26	39.79	40.09351	0.00	NORMAL
6/15/2022 9:36	12.42	0.64	38.07	1021.8	1066.5	6.78	32.3	54.4	22.1	47.8	7.96	7.50	7.26	39.79	40.0939	0.00	NORMAL
6/15/2022 9:37	12.39	0.36	36.51	1021.6	1064.8	6.78	32.3	54.4	22.1	47.8	7.97	7.50	7.26	39.79	40.09562	0.00	NORMAL
6/15/2022 9:38	12.46	0.35	36.22	1021.5	1062.7	6.78	32.3	54.4	22.1	47.8	7.97	7.50	7.25	39.79	40.09679	0.00	NORMAL
6/15/2022 9:39	12.52	0.12	38.36	1021.4	1060.6	6.78	32.3	54.4	22.1	47.8	7.97	7.50	7.25	39.79	40.09795	0.00	NORMAL
6/15/2022 9:40	12.58	0.82	36.09	1021.2	1059.6	6.78	32.3	54.4	22.1	47.8	7.97	7.50	7.25	39.79	40.09768	0.00	NORMAL
6/15/2022 9:41	12.47	0.54	33.97	1021.1	1061.5	6.78	32.4	54.4	22.1	47.8	7.97	7.51	7.26	39.79	40.09557	0.00	NORMAL
6/15/2022 9:42	12.24	0.32	42.89	1021.0	1064.1	6.78	32.4	54.4	22.0	47.8	7.98	7.51	7.26	39.79	40.09328	0.00	NORMAL
6/15/2022 9:43	12.17	0.46	38.84	1020.9	1066.0	6.78	32.4	54.4	22.0	47.8	7.98	7.50	7.26	39.79	40.09196	0.00	NORMAL
6/15/2022 9:44	12.15	0.57	39.14	1020.7	1068.0	6.78	32.5	54.4	22.0	47.8	7.97	7.50	7.25	39.79	40.09096	0.00	NORMAL
6/15/2022 9:45	11.90	0.79	36.57	1020.6	1072.1	6.79	32.5	54.4	22.0	47.8	7.95	7.51	7.25	39.79	40.08912	0.00	NORMAL
6/15/2022 9:46	11.87	0.57	47.43	1020.4	1073.3	6.79	32.5	54.4	21.9	47.8	7.94	7.52	7.25	39.79	40.08834	0.00	NORMAL
6/15/2022 9:47	11.78	0.81	39.56	1020.3	1072.4	6.79	32.5	54.4	21.9	47.8	7.93	7.52	7.25	39.79	40.08817	0.00	NORMAL
6/15/2022 9:48	11.61	1.76	44.51	1020.1	1070.8	6.79	32.5	54.4	21.9	47.8	7.93	7.53	7.25	39.79	40.09217	0.00	NORMAL
6/15/2022 9:49	11.66	0.24	44.78	1019.9	1068.4	6.79	32.5	54.4	21.9	47.9	7.94	7.53	7.26	39.79	40.09473	0.00	NORMAL
6/15/2022 9:50	11.54	0.11	40.11	1019.7	1066.6	6.79	32.5	54.4	21.9	47.9	7.94	7.53	7.26	39.79	40.09695	0.00	NORMAL
6/15/2022 9:51	11.45	0.38	44.05	1019.5	1068.2	6.79	32.5	54.4	21.9	47.9	7.94	7.53	7.25	39.79	40.09962	0.00	NORMAL
6/15/2022 9:52	11.43	0.23	50.24	1019.3	1069.2	6.79	32.6	54.4	21.9	47.9	7.94	7.53	7.25	39.79	40.10145	0.00	NORMAL
6/15/2022 9:53	11.43	0.51	41.16	1019.1	1070.2	6.79	32.6	54.4	21.9	47.9	7.94	7.53	7.25	39.79	40.10562	0.00	NORMAL
6/15/2022 9:54	11.60	0.65	46.83	1018.9	1070.3	6.79	32.5	54.4	21.9	47.9	7.94	7.53	7.25	39.79	40.10812	0.00	NORMAL
6/15/2022 9:55	11.61	0.12	48.54	1018.7	1067.7	6.79	32.5	54.4	21.9	47.9	7.94	7.53	7.25	39.79	40.11007	0.00	NORMAL
6/15/2022 9:56	11.63	0.32	41.08	1018.4	1066.4	6.80	32.5	54.4	21.9	47.9	7.94	7.53	7.25	39.79	40.11273	0.00	NORMAL
6/15/2022 9:57	11.75	0.30	38.71	1018.2	1067.6	6.80	32.5	54.4	21.9	47.9	7.94	7.54	7.25	39.79	40.11751	0.00	NORMAL
6/15/2022 9:58	11.65	0.42	46.43	1017.9	1068.4	6.80	32.5	54.5	21.9	47.9	7.94	7.55	7.25	39.79	40.11895	0.00	NORMAL
6/15/2022 9:59	11.62	0.40	46.68	1017.6	1070.4	6.80	32.5	54.5	21.9	47.9	7.94	7.55	7.25	39.79	40.12128	0.00	NORMAL
6/15/2022 10:00	11.45	0.59	45.62	1017.3	1072.1	6.80	32.5	54.4	21.9	48.0	7.94	7.55	7.24	39.79	40.12478	0.00	NORMAL
6/15/2022 10:01	11.31	0.33	49.12	1017.1	1070.7	6.80	32.5	54.4	21.9	48.0	7.95	7.55	7.24	39.79	40.12951	0.00	NORMAL
6/15/2022 10:02	11.31	0.11	46.01	1016.8	1068.1	6.80	32.5	54.4	22.0	48.0	7.95	7.55	7.24	39.79	40.13251	0.00	NORMAL
6/15/2022 10:03	11.35	0.10	41.23	1016.4	1067.0	6.80	32.5	54.4	22.0	48.0	7.96	7.55	7.24	39.79	40.13595	0.00	NORMAL
6/15/2022 10:04	11.33	0.21	43.95	1016.1	1066.3	6.80	32.4	54.4	22.0	48.0	7.97	7.55	7.24	39.79	40.13934	0.00	NORMAL
6/15/2022 10:05	11.56	0.23	43.51	1015.7	1065.2	6.80	32.4	54.4	22.0	48.0	7.98	7.55	7.24	39.79	40.14229	0.00	NORMAL
6/15/2022 10:06	11.62	0.51	37.97	1015.3	1065.8	6.80	32.4	54.4	22.0	48.0	7.98	7.55	7.24	39.79	40.1455	0.00	NORMAL
6/15/2022 10:07	11.23	2.59	42.29	1014.9	1069.3	6.80	32.4	54.4	22.0	48.0	7.97	7.56	7.25	39.79	40.14862	0.00	NORMAL
6/15/2022 10:08	10.96	0.27	50.91	1014.5	1074.1	6.80	32.4	54.4	22.0	48.0	7.97	7.57	7.24	39.79	40.15039	0.00	NORMAL
6/15/2022 10:09	11.04	0.00	61.40	1014.0	1078.9	6.80	32.4	54.4	22.1	48.0	7.96	7.57	7.24	39.79	40.15373	0.00	NORMAL
6/15/2022 10:10	11.04	0.42	56.86	1013.5	1084.3	6.80	32.4	54.4	22.1	48.0	7.96	7.57	7.23	39.79	40.15695	0.00	NORMAL
6/15/2022 10:11	10.97	0.22	59.90	1013.1	1088.2	6.81	32.4	54.4	22.1	48.0	7.95	7.57	7.23	39.79	40.16001	0.00	NORMAL
6/15/2022 10:12	11.16	0.12	60.14	1012.6	1089.2	6.81	32.4	54.4	22.1	48.0	7.95	7.57	7.23	39.79	40.16328	0.00	NORMAL
6/15/2022 10:13	11.69	0.24	62.20	1012.0	1088.0	6.81	32.4	54.4	22.1	48.0	7.94	7.57	7.23	39.79	40.16668	0.00	NORMAL
6/15/2022 10:14	12.17	0.00	53.45	1011.5	1085.6	6.81	32.3	54.4	22.1	48.0	7.94	7.57	7.24	39.79	40.17123	0.00	NORMAL
6/15/2022 10:15	12.20	0.00	49.50	1010.9	1082.8	6.81	32.3	54.4	22.1	48.0	7.95	7.57	7.24	39.78	40.17529	0.00	NORMAL
6/15/2022 10:16	12.03	0.66	43.29	1010.4	1081.5	6.81	32.3	54.4	22.1	48.0	7.95	7.57	7.24	39.78	40.17879	0.00	NORMAL
6/15/2022 10:17	11.86	3.46	50.88	1009.8	1081.0	6.81	32.3	54.4	22.1	48.0	7.96	7.57	7.23	39.78	40.18162	0.00	NORMAL
6/15/2022 10:18	12.07	0.14	63.07	1009.3	1079.8	6.81	32.3	54.4	22.2	48.0	7.96	7.57	7.23	39.78	40.18629	0.00	NORMAL
6/15/2022 10:19	12.03	0.23	51.95	1008.8	1078.8	6.81	32.2	54.4	22.2	48.0	7.97	7.55	7.23	39.79	40.19118	0.00	NORMAL
6/15/2022 10:20	11.74	0.41	43.91	1008.2	1078.2	6.81	32.2	54.4	22.2	48.0	7.96	7.55	7.23	39.79	40.19573	0.00	NORMAL
6/15/2022 10:21	11.77	0.34	52.33	1007.7	1076.0	6.81	32.2	54.4	22.2	48.0	7.95	7.55	7.23	39.79	40.19862	0.00	NORMAL

Waste Feed Data

Time	Anatomical	Cytotoxic	Rx	Contract	Total Kg
9:00	28.8	61.4	35.1		125.4
10:00	123.7	263.6	150.6		538
11:00	115.4	245.9	140.5		501.9
12:00	124.1	264.5	151.1		539.7
13:00	115.7	246.6	140.9		503.2
14:00	115.2	245.5	140.3		501
15:00	115.3	245.5	140.3		501.1
Totals	**738.4**	**1573.0**	**898.9**	**0.0**	**3210.3**

24 hour total Kg **10000**

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/15/2022 10:22	11.84	0.89	46.78	1007.2	1074.7	6.81	32.2	54.4	22.2	48.0	7.94	7.55	7.23	39.79	40.20267	0.00	NORMAL
6/15/2022 10:23	11.85	1.09	51.98	1006.8	1075.2	6.81	32.2	54.4	22.3	48.0	7.93	7.55	7.23	39.79	40.20667	0.00	NORMAL
6/15/2022 10:24	11.58	0.22	48.67	1006.3	1076.1	6.81	32.2	54.5	22.3	48.0	7.92	7.55	7.23	39.79	40.21062	0.00	NORMAL
6/15/2022 10:25	11.43	0.53	44.56	1005.9	1076.6	6.81	32.2	54.5	22.3	48.0	7.92	7.55	7.23	39.79	40.21518	0.00	NORMAL
6/15/2022 10:26	11.30	0.38	41.80	1005.4	1078.6	6.81	32.2	54.5	22.3	48.0	7.91	7.55	7.22	39.79	40.21901	0.00	NORMAL
6/15/2022 10:27	11.07	0.59	51.85	1004.8	1080.5	6.81	32.2	54.5	22.3	48.0	7.91	7.57	7.22	39.79	40.22073	0.00	NORMAL
6/15/2022 10:28	11.14	0.41	53.32	1004.3	1083.2	6.81	32.2	54.4	22.3	48.0	7.92	7.58	7.22	39.79	40.22284	0.00	NORMAL
6/15/2022 10:29	11.33	0.67	63.72	1003.8	1084.7	6.81	32.2	54.4	22.3	48.0	7.92	7.58	7.22	39.79	40.22406	0.00	NORMAL
6/15/2022 10:30	11.69	0.15	62.57	1003.3	1084.3	6.81	32.2	54.4	22.2	48.0	7.92	7.58	7.22	39.79	40.22784	0.00	NORMAL
6/15/2022 10:31	11.56	0.29	43.83	1002.7	1084.0	6.81	32.2	54.4	22.2	48.0	7.93	7.57	7.22	39.79	40.23079	0.00	NORMAL
6/15/2022 10:32	11.49	0.54	47.16	1002.2	1084.5	6.81	32.2	54.4	22.3	48.0	7.93	7.56	7.22	39.79	40.23312	0.00	NORMAL
6/15/2022 10:33	11.79	0.12	70.56	1001.6	1083.9	6.81	32.1	54.4	22.3	48.0	7.93	7.56	7.22	39.79	40.23712	0.00	NORMAL
6/15/2022 10:34	11.97	0.00	69.58	1001.1	1084.3	6.81	32.1	54.4	22.3	48.0	7.94	7.55	7.22	39.79	40.24062	0.00	NORMAL
6/15/2022 10:35	12.04	0.12	62.49	1000.5	1087.0	6.81	32.1	54.4	22.3	48.0	7.93	7.55	7.22	39.79	40.24284	0.00	NORMAL
6/15/2022 10:36	11.37	0.74	60.40	999.9	1089.3	6.81	32.1	54.4	22.3	48.0	7.92	7.55	7.22	39.79	40.24356	0.00	NORMAL
6/15/2022 10:37	11.89	0.56	81.06	999.4	1087.4	6.81	32.1	54.4	22.3	48.0	7.91	7.55	7.22	39.80	40.24567	0.00	NORMAL
6/15/2022 10:38	12.33	0.12	61.31	998.9	1085.4	6.82	32.1	54.4	22.3	48.0	7.90	7.57	7.22	39.80	40.25017	0.00	NORMAL
6/15/2022 10:39	11.91	0.46	47.13	998.3	1085.4	6.82	32.1	54.4	22.3	48.0	7.90	7.57	7.22	39.80	40.25417	0.00	NORMAL
6/15/2022 10:40	11.76	0.32	63.30	997.8	1086.2	6.82	32.1	54.4	22.4	48.0	7.90	7.58	7.22	39.80	40.25734	0.00	NORMAL
6/15/2022 10:41	11.68	0.11	75.00	997.2	1086.5	6.82	32.1	54.4	22.4	48.0	7.90	7.58	7.21	39.80	40.25995	0.00	NORMAL
6/15/2022 10:42	11.84	0.81	67.22	996.7	1089.0	6.82	32.1	54.4	22.4	48.0	7.90	7.58	7.21	39.80	40.26173	0.00	NORMAL
6/15/2022 10:43	11.74	0.26	79.51	996.1	1090.0	6.82	32.1	54.4	22.3	48.0	7.90	7.58	7.21	39.80	40.26189	0.00	NORMAL
6/15/2022 10:44	11.70	0.23	72.81	995.6	1089.4	6.82	32.1	54.4	22.3	48.0	7.90	7.57	7.21	39.80	40.26256	0.00	NORMAL
6/15/2022 10:45	11.97	0.11	69.69	995.1	1088.9	6.82	32.1	54.4	22.3	48.0	7.90	7.56	7.22	39.80	40.26417	0.00	NORMAL
6/15/2022 10:46	11.88	0.10	66.03	994.6	1088.6	6.82	32.1	54.4	22.3	48.0	7.90	7.57	7.21	39.80	40.26522	0.00	NORMAL
6/15/2022 10:47	12.13	0.13	82.79	994.1	1087.4	6.82	32.1	54.4	22.3	48.0	7.90	7.58	7.21	39.80	40.2665	0.00	NORMAL
6/15/2022 10:48	11.89	4.95	63.41	993.6	1090.3	6.82	32.1	54.4	22.3	48.0	7.90	7.58	7.21	39.80	40.26672	0.00	NORMAL
6/15/2022 10:49	11.75	7.03	86.55	993.2	1092.1	6.82	32.1	54.4	22.3	48.0	7.90	7.58	7.21	39.80	40.26767	0.00	NORMAL
6/15/2022 10:50	11.87	0.25	80.11	992.7	1091.3	6.82	32.1	54.4	22.3	48.0	7.90	7.58	7.21	39.80	40.27167	0.00	NORMAL
6/15/2022 10:51	11.84	0.21	62.98	992.2	1091.1	6.82	32.1	54.4	22.3	47.9	7.89	7.58	7.21	39.80	40.27361	0.00	NORMAL
6/15/2022 10:52	11.89	0.61	63.55	991.7	1092.6	6.82	32.1	54.4	22.3	47.9	7.89	7.58	7.21	39.80	40.27666	0.00	NORMAL
6/15/2022 10:53	11.93	0.28	87.65	991.3	1090.2	6.82	32.1	54.4	22.3	47.9	7.88	7.58	7.21	39.80	40.27672	0.00	NORMAL
6/15/2022 10:54	12.02	1.02	65.75	990.8	1090.5	6.82	32.1	54.4	22.3	47.9	7.88	7.58	7.21	39.80	40.27694	0.00	NORMAL
6/15/2022 10:55	12.01	0.92	80.09	990.4	1091.8	6.82	32.2	54.4	22.3	48.0	7.88	7.59	7.21	39.79	40.27834	0.00	NORMAL
6/15/2022 10:56	12.02	0.64	80.99	989.9	1090.7	6.82	32.2	54.4	22.3	48.0	7.87	7.60	7.21	39.79	40.27811	0.00	NORMAL
6/15/2022 10:57	11.95	0.20	66.20	989.5	1090.8	6.82	32.2	54.4	22.3	48.0	7.87	7.60	7.21	39.79	40.281	0.00	NORMAL
6/15/2022 10:58	11.95	0.82	74.25	989.0	1093.0	6.82	32.2	54.4	22.2	48.0	7.87	7.61	7.21	39.79	40.28184	0.00	NORMAL
6/15/2022 10:59	11.83	0.25	82.88	988.5	1092.3	6.82	32.2	54.4	22.2	48.0	7.88	7.59	7.21	39.80	40.28411	0.00	NORMAL
6/15/2022 11:00	12.00	0.21	73.84	988.0	1092.4	6.82	32.2	54.4	22.2	48.0	7.88	7.58	7.21	39.80	40.28789	0.00	NORMAL
6/15/2022 11:01	12.03	0.23	81.66	987.5	1093.4	6.82	32.2	54.4	22.2	48.0	7.89	7.58	7.20	39.80	40.29156	0.00	NORMAL
6/15/2022 11:02	12.03	0.51	83.07	987.0	1092.1	6.83	32.2	54.4	22.2	48.0	7.89	7.59	7.21	39.80	40.29378	0.00	NORMAL
6/15/2022 11:03	11.86	0.55	82.70	986.4	1092.4	6.83	32.2	54.4	22.2	48.0	7.89	7.59	7.21	39.80	40.29633	0.00	NORMAL
6/15/2022 11:04	12.07	0.59	114.53	985.8	1093.2	6.83	32.3	54.4	22.1	48.0	7.90	7.60	7.21	39.80	40.29867	0.00	NORMAL
6/15/2022 11:05	12.15	0.40	108.56	985.2	1092.7	6.83	32.3	54.4	22.1	48.0	7.90	7.60	7.21	39.80	40.29856	0.00	NORMAL
6/15/2022 11:06	12.03	4.03	65.81	984.6	1094.1	6.83	32.3	54.4	22.1	48.0	7.90	7.60	7.21	39.80	40.3	0.00	NORMAL
6/15/2022 11:07	12.14	3.82	90.34	984.0	1094.8	6.83	32.3	54.4	22.1	48.0	7.90	7.60	7.21	39.80	40.30206	0.00	NORMAL
6/15/2022 11:08	12.18	0.39	81.50	983.4	1092.5	6.83	32.3	54.4	22.1	48.0	7.89	7.61	7.20	39.81	40.3035	0.00	NORMAL
6/15/2022 11:09	12.22	2.33	58.92	982.8	1093.0	6.83	32.3	54.4	22.1	48.0	7.88	7.61	7.20	39.81	40.30622	0.00	NORMAL
6/15/2022 11:10	12.18	11.05	72.64	982.3	1094.6	6.83	32.3	54.4	22.1	48.0	7.88	7.62	7.21	39.81	40.30455	0.00	NORMAL
6/15/2022 11:11	12.00	0.58	75.12	981.7	1094.5	6.83	32.3	54.4	22.1	48.0	7.89	7.62	7.21	39.81	40.30294	0.00	NORMAL
6/15/2022 11:12	11.99	3.62	59.32	981.2	1096.7	6.83	32.4	54.5	22.1	48.0	7.89	7.62	7.21	39.81	40.30472	0.00	NORMAL
6/15/2022 11:13	11.94	0.86	70.77	980.6	1098.9	6.83	32.4	54.5	22.1	48.0	7.89	7.62	7.20	39.81	40.30394	0.00	NORMAL
6/15/2022 11:14	11.85	0.25	75.11	980.1	1098.0	6.83	32.4	54.5	22.1	48.1	7.90	7.62	7.20	39.81	40.30372	0.00	NORMAL
6/15/2022 11:15	12.07	0.21	66.64	979.5	1097.2	6.83	32.4	54.5	22.1	48.1	7.89	7.62	7.20	39.81	40.30367	0.00	NORMAL
6/15/2022 11:16	12.12	0.36	73.92	979.0	1096.2	6.83	32.4	54.4	22.1	48.1	7.89	7.62	7.20	39.81	40.30422	0.00	NORMAL
6/15/2022 11:17	12.18	0.37	74.37	978.4	1093.5	6.83	32.4	54.4	22.0	48.1	7.90	7.62	7.20	39.81	40.30466	0.00	NORMAL
6/15/2022 11:18	12.28	0.61	65.50	977.9	1093.0	6.83	32.4	54.4	22.0	48.1	7.91	7.61	7.21	39.81	40.30533	0.00	NORMAL
6/15/2022 11:19	12.22	0.59	84.02	977.4	1092.9	6.84	32.4	54.4	22.0	48.1	7.92	7.60	7.21	39.81	40.3075	0.00	NORMAL
6/15/2022 11:20	12.24	0.00	81.49	976.9	1092.0	6.84	32.4	54.4	22.0	48.1	7.93	7.60	7.20	39.80	40.30872	0.00	NORMAL
6/15/2022 11:21	12.04	41.01	63.17	976.4	1094.1	6.84	32.4	54.4	22.0	48.1	7.93	7.59	7.20	39.80	40.30977	0.00	NORMAL
6/15/2022 11:22	11.85	737.31	81.40	975.8	1097.3	6.84	32.4	54.4	22.0	48.1	7.92	7.60	7.20	39.81	40.31144	0.00	NORMAL
6/15/2022 11:23	11.85	25.42	94.23	975.3	1098.0	6.84	32.4	54.4	22.0	48.1	7.92	7.61	7.20	39.80	40.31144	0.00	NORMAL
6/15/2022 11:24	11.93	1.91	78.86	974.8	1099.2	6.84	32.5	54.4	22.0	48.1	7.92	7.61	7.20	39.80	40.31038	0.00	NORMAL
6/15/2022 11:25	11.92	0.93	86.22	974.3	1100.2	6.84	32.5	54.4	22.0	48.1	7.92	7.61	7.20	39.80	40.3096	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/15/2022 11:26	11.96	0.64	93.23	973.8	1097.6	6.84	32.5	54.4	22.0	48.1	7.91	7.61	7.20	39.80	40.30905	0.00	NORMAL
6/15/2022 11:27	12.15	18.79	78.42	973.3	1096.6	6.84	32.5	54.4	21.9	48.1	7.90	7.61	7.20	39.80	40.30944	0.00	NORMAL
6/15/2022 11:28	12.08	932.54	79.48	972.7	1097.4	6.84	32.5	54.4	21.9	48.1	7.91	7.61	7.20	39.80	40.30877	0.00	NORMAL
6/15/2022 11:29	12.15	139.01	101.84	972.2	1096.7	6.84	32.5	54.4	21.9	48.1	7.92	7.61	7.20	39.81	40.30882	0.00	NORMAL
6/15/2022 11:30	12.40	7.21	89.77	971.6	1096.0	6.84	32.5	54.4	21.9	48.1	7.93	7.61	7.20	39.81	40.30616	0.00	NORMAL
6/15/2022 11:31	12.21	2.86	73.64	971.1	1097.4	6.84	32.6	54.4	21.9	48.2	7.93	7.62	7.20	39.81	40.30611	0.00	NORMAL
6/15/2022 11:32	12.00	3.09	74.06	970.6	1096.8	6.84	32.6	54.4	21.9	48.2	7.93	7.62	7.20	39.80	40.3041	0.00	NORMAL
6/15/2022 11:33	12.09	1.12	77.30	970.0	1095.8	6.84	32.6	54.4	21.9	48.2	7.93	7.62	7.20	39.80	40.30016	0.00	NORMAL
6/15/2022 11:34	12.06	1.28	74.50	969.5	1097.3	6.85	32.6	54.4	21.8	48.2	7.93	7.61	7.20	39.80	40.29777	0.00	NORMAL
6/15/2022 11:35	11.83	1.09	82.28	968.9	1100.0	6.85	32.6	54.4	21.8	48.2	7.94	7.61	7.20	39.81	40.29771	0.00	NORMAL
6/15/2022 11:36	11.61	0.76	81.98	968.4	1101.6	6.85	32.6	54.5	21.8	48.2	7.96	7.61	7.20	39.81	40.29533	0.00	NORMAL
6/15/2022 11:37	11.63	0.52	84.33	967.9	1103.4	6.85	32.7	54.5	21.8	48.2	7.97	7.61	7.20	39.81	40.29488	0.00	NORMAL
6/15/2022 11:38	11.76	0.61	116.23	967.4	1103.9	6.85	32.7	54.5	21.8	48.2	7.97	7.61	7.20	39.81	40.29544	0.00	NORMAL
6/15/2022 11:39	11.87	0.00	103.00	966.8	1102.7	6.85	32.7	54.5	21.8	48.2	7.97	7.62	7.20	39.81	40.29432	0.00	NORMAL
6/15/2022 11:40	11.93	0.30	69.05	966.3	1101.8	6.85	32.7	54.5	21.7	48.2	7.96	7.63	7.20	39.81	40.29433	0.00	NORMAL
6/15/2022 11:41	12.04	0.35	73.16	965.8	1100.7	6.85	32.7	54.5	21.7	48.2	7.95	7.63	7.20	39.81	40.29416	0.00	NORMAL
6/15/2022 11:42	12.12	0.11	84.05	965.3	1099.0	6.85	32.7	54.5	21.7	48.2	7.95	7.63	7.20	39.81	40.29293	0.00	NORMAL
6/15/2022 11:43	12.16	0.32	69.58	964.8	1098.9	6.85	32.8	54.5	21.7	48.3	7.96	7.64	7.20	39.81	40.29394	0.00	NORMAL
6/15/2022 11:44	12.14	0.72	74.49	964.3	1098.5	6.85	32.8	54.5	21.7	48.3	7.97	7.64	7.20	39.81	40.29417	0.00	NORMAL
6/15/2022 11:45	12.21	0.51	68.22	963.9	1096.3	6.85	32.8	54.5	21.7	48.3	7.97	7.62	7.20	39.81	40.29283	0.00	NORMAL
6/15/2022 11:46	12.30	0.32	71.89	963.4	1094.8	6.86	32.8	54.5	21.7	48.3	7.98	7.61	7.20	39.81	40.29139	0.00	NORMAL
6/15/2022 11:47	12.29	0.35	82.28	962.9	1094.5	6.86	32.8	54.5	21.7	48.3	7.98	7.61	7.20	39.82	40.29222	0.00	NORMAL
6/15/2022 11:48	12.11	0.41	74.86	962.4	1094.1	6.86	32.8	54.5	21.6	48.3	7.98	7.61	7.20	39.82	40.29216	0.00	NORMAL
6/15/2022 11:49	12.23	1.02	74.34	961.9	1094.5	6.86	32.9	54.5	21.6	48.3	7.98	7.61	7.20	39.82	40.29427	0.00	NORMAL
6/15/2022 11:50	12.25	0.49	77.99	961.4	1094.7	6.86	32.9	54.4	21.6	48.3	7.98	7.63	7.20	39.82	40.29339	0.00	NORMAL
6/15/2022 11:51	12.24	0.13	80.73	960.9	1093.9	6.86	32.9	54.4	21.6	48.3	7.99	7.63	7.19	39.82	40.29361	0.00	NORMAL
6/15/2022 11:52	12.08	0.29	66.19	960.4	1094.1	6.86	32.9	54.4	21.5	48.3	8.01	7.64	7.19	39.82	40.294	0.00	NORMAL
6/15/2022 11:53	12.24	0.66	87.20	959.9	1092.5	6.86	32.9	54.4	21.5	48.3	8.02	7.63	7.20	39.82	40.29361	0.00	NORMAL
6/15/2022 11:54	12.32	0.22	65.78	959.4	1092.8	6.86	32.9	54.4	21.5	48.3	8.02	7.62	7.20	39.82	40.29011	0.00	NORMAL
6/15/2022 11:55	12.07	0.19	76.98	958.9	1096.2	6.86	33.0	54.5	21.5	48.3	8.01	7.61	7.20	39.83	40.289	0.00	NORMAL
6/15/2022 11:56	12.03	0.12	94.38	958.4	1099.1	6.87	33.0	54.5	21.5	48.4	8.00	7.60	7.19	39.83	40.28961	0.00	NORMAL
6/15/2022 11:57	11.94	0.12	74.76	957.9	1098.7	6.87	33.0	54.5	21.5	48.4	8.00	7.60	7.19	39.83	40.28973	0.00	NORMAL
6/15/2022 11:58	12.14	0.33	69.15	957.4	1099.9	6.87	33.0	54.5	21.5	48.4	7.99	7.60	7.19	39.83	40.29023	0.00	NORMAL
6/15/2022 11:59	11.84	0.00	80.80	956.9	1100.2	6.87	33.0	54.4	21.4	48.4	7.98	7.60	7.19	39.83	40.28978	0.00	NORMAL
6/15/2022 12:00	12.02	0.12	73.70	956.4	1097.2	6.87	33.0	54.4	21.4	48.4	7.98	7.61	7.19	39.83	40.28812	0.00	NORMAL
6/15/2022 12:01	12.18	0.11	66.68	955.9	1096.5	6.87	33.0	54.4	21.4	48.4	7.99	7.62	7.20	39.83	40.29	0.00	NORMAL
6/15/2022 12:02	11.96	0.61	71.88	955.4	1097.3	6.87	33.1	54.4	21.4	48.4	8.00	7.62	7.20	39.83	40.28973	0.00	NORMAL
6/15/2022 12:03	12.11	0.13	75.99	954.9	1096.0	6.87	33.1	54.4	21.4	48.4	8.00	7.62	7.19	39.83	40.29273	0.00	NORMAL
6/15/2022 12:04	12.21	0.24	66.12	954.4	1093.7	6.87	33.0	54.4	21.4	48.4	8.00	7.62	7.19	39.83	40.29495	0.00	NORMAL
6/15/2022 12:05	12.40	0.12	71.86	953.9	1091.9	6.88	33.0	54.4	21.4	48.4	8.00	7.63	7.19	39.84	40.29739	0.00	NORMAL
6/15/2022 12:06	12.44	0.00	70.90	953.5	1088.2	6.88	33.0	54.4	21.4	48.4	8.00	7.63	7.19	39.84	40.29917	0.00	NORMAL
6/15/2022 12:07	12.44	0.53	58.78	953.1	1085.2	6.88	33.0	54.4	21.4	48.4	8.00	7.63	7.19	39.84	40.30251	0.00	NORMAL
6/15/2022 12:08	12.55	0.55	65.45	952.7	1083.7	6.88	33.1	54.5	21.4	48.5	8.00	7.63	7.19	39.84	40.30512	0.00	NORMAL
6/15/2022 12:09	12.41	0.12	71.30	952.3	1082.3	6.88	33.0	54.5	21.4	48.5	8.01	7.64	7.19	39.84	40.30967	0.00	NORMAL
6/15/2022 12:10	12.43	0.12	66.20	952.0	1081.2	6.88	33.0	54.5	21.4	48.5	8.02	7.64	7.19	39.84	40.31506	0.00	NORMAL
6/15/2022 12:11	12.18	0.10	56.53	951.7	1081.2	6.88	33.0	54.4	21.4	48.5	8.03	7.63	7.19	39.84	40.31751	0.00	NORMAL
6/15/2022 12:12	11.79	0.20	56.67	951.4	1081.1	6.88	33.0	54.4	21.4	48.5	8.03	7.63	7.19	39.84	40.31851	0.00	NORMAL
6/15/2022 12:13	11.79	0.00	59.93	951.1	1081.6	6.88	33.0	54.4	21.4	48.5	8.03	7.62	7.19	39.85	40.32262	0.00	NORMAL
6/15/2022 12:14	11.65	1.71	54.23	950.8	1082.6	6.88	33.0	54.4	21.4	48.5	8.02	7.62	7.19	39.85	40.32384	0.00	NORMAL
6/15/2022 12:15	12.02	0.66	87.84	950.5	1082.1	6.88	33.0	54.4	21.5	48.5	8.01	7.61	7.19	39.85	40.33046	0.00	NORMAL
6/15/2022 12:16	12.02	0.48	61.33	950.2	1081.3	6.88	33.0	54.4	21.5	48.5	8.00	7.61	7.19	39.85	40.33334	0.00	NORMAL
6/15/2022 12:17	11.93	0.78	59.42	949.8	1080.3	6.89	32.9	54.5	21.5	48.5	7.99	7.62	7.19	39.86	40.33707	0.00	NORMAL
6/15/2022 12:18	12.22	0.12	69.23	949.5	1078.5	6.89	32.9	54.5	21.5	48.5	7.98	7.62	7.19	39.86	40.34141	0.00	NORMAL
6/15/2022 12:19	12.10	0.00	54.53	949.2	1077.3	6.89	32.9	54.5	21.6	48.5	7.98	7.63	7.19	39.86	40.3448	0.00	NORMAL
6/15/2022 12:20	12.15	0.31	58.76	948.9	1078.2	6.89	32.9	54.4	21.6	48.5	7.99	7.63	7.19	39.86	40.34646	0.00	NORMAL
6/15/2022 12:21	11.64	0.11	55.98	948.6	1078.8	6.89	32.9	54.4	21.6	48.5	7.99	7.63	7.19	39.87	40.35102	0.00	NORMAL
6/15/2022 12:22	11.37	0.20	47.76	948.3	1079.8	6.89	32.8	54.4	21.6	48.5	8.00	7.63	7.19	39.87	40.35535	0.00	NORMAL
6/15/2022 12:23	11.45	3.27	50.47	948.1	1080.5	6.89	32.8	54.4	21.6	48.5	8.00	7.63	7.19	39.87	40.35885	0.00	NORMAL
6/15/2022 12:24	12.76	0.00	0.00	947.8	1081.5	6.89	32.8	54.4	21.6	48.5	8.01	7.63	7.19	39.87	40.35979	0.00	NORMAL
6/15/2022 12:25	14.32	0.00	0.00	947.6	1085.5	6.89	32.8	54.4	21.6	48.5	8.01	7.63	7.19	39.87	40.36246	0.00	NORMAL
6/15/2022 12:26	14.16	1.50	46.35	947.3	1090.6	6.89	32.8	54.4	21.7	48.5	8.01	7.63	7.18	39.88	40.36574	0.00	NORMAL
6/15/2022 12:27	14.30	0.96	52.98	947.1	1092.9	6.89	32.7	54.4	21.7	48.5	8.01	7.63	7.18	39.88	40.36979	0.00	NORMAL
6/15/2022 12:28	14.92	0.00	60.07	946.9	1093.4	6.89	32.7	54.4	21.7	48.5	8.01	7.63	7.18	39.88	40.37124	0.00	NORMAL
6/15/2022 12:29	15.01	1.08	50.20	946.6	1092.8	6.89	32.7	54.4	21.7	48.5	8.01	7.61	7.18	39.88	40.37407	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/15/2022 12:30	13.72	1.19	60.28	946.4	1088.8	6.89	32.7	54.5	21.7	48.5	8.01	7.61	7.19	39.88	40.37779	0.00	NORMAL
6/15/2022 12:31	12.39	0.46	65.39	946.1	1083.9	6.89	32.7	54.5	21.8	48.5	8.01	7.62	7.19	39.88	40.38268	0.00	NORMAL
6/15/2022 12:32	12.37	0.74	57.39	945.8	1081.9	6.89	32.7	54.5	21.8	48.5	8.02	7.62	7.18	39.88	40.38746	0.00	NORMAL
6/15/2022 12:33	12.36	0.36	69.74	945.5	1081.7	6.90	32.7	54.4	21.8	48.5	8.02	7.62	7.18	39.89	40.39129	0.00	NORMAL
6/15/2022 12:34	11.94	0.11	69.73	945.2	1081.7	6.90	32.7	54.4	21.8	48.5	8.02	7.62	7.18	39.89	40.39307	0.00	NORMAL
6/15/2022 12:35	11.68	1.02	62.89	944.9	1083.3	6.90	32.6	54.4	21.8	48.5	8.02	7.62	7.18	39.89	40.39346	0.00	NORMAL
6/15/2022 12:36	11.83	1.87	83.23	944.5	1083.4	6.90	32.6	54.4	21.8	48.5	8.02	7.62	7.18	39.89	40.39718	0.00	NORMAL
6/15/2022 12:37	12.00	0.26	70.36	944.1	1082.1	6.90	32.6	54.4	21.8	48.5	8.02	7.62	7.18	39.90	40.40273	0.00	NORMAL
6/15/2022 12:38	12.06	0.48	60.83	943.7	1082.4	6.90	32.6	54.5	21.8	48.5	8.02	7.62	7.18	39.90	40.40723	0.00	NORMAL
6/15/2022 12:39	11.79	0.90	65.83	943.3	1083.0	6.90	32.6	54.5	21.9	48.5	8.01	7.62	7.18	39.90	40.41135	0.00	NORMAL
6/15/2022 12:40	11.88	0.12	75.93	942.9	1082.6	6.90	32.6	54.5	21.9	48.5	8.01	7.64	7.18	39.90	40.41423	0.00	NORMAL
6/15/2022 12:41	11.99	2.17	65.31	942.5	1084.8	6.90	32.6	54.5	21.9	48.5	8.01	7.64	7.18	39.90	40.41718	0.00	NORMAL
6/15/2022 12:42	11.89	1.23	84.47	942.1	1086.9	6.90	32.6	54.4	21.9	48.5	8.01	7.65	7.18	39.91	40.42129	0.00	NORMAL
6/15/2022 12:43	11.83	0.13	77.88	941.7	1087.0	6.90	32.6	54.4	21.9	48.5	8.02	7.65	7.18	39.91	40.42501	0.00	NORMAL
6/15/2022 12:44	12.06	0.45	70.60	941.2	1087.3	6.90	32.6	54.4	21.9	48.5	8.03	7.65	7.18	39.91	40.42884	0.00	NORMAL
6/15/2022 12:45	12.09	0.30	72.50	940.8	1088.9	6.90	32.6	54.4	21.8	48.5	8.04	7.64	7.18	39.91	40.43162	0.00	NORMAL
6/15/2022 12:46	11.93	0.22	90.16	940.4	1089.5	6.91	32.6	54.4	21.8	48.5	8.05	7.63	7.18	39.91	40.43156	0.00	NORMAL
6/15/2022 12:47	12.01	0.73	81.36	940.1	1091.4	6.91	32.6	54.4	21.8	48.5	8.05	7.62	7.18	39.91	40.43223	0.00	NORMAL
6/15/2022 12:48	12.03	0.25	90.80	939.7	1092.8	6.91	32.6	54.5	21.9	48.5	8.04	7.62	7.18	39.92	40.43201	0.00	NORMAL
6/15/2022 12:49	12.02	0.12	75.06	939.3	1092.9	6.91	32.6	54.5	21.9	48.5	8.03	7.62	7.17	39.92	40.4314	0.00	NORMAL
6/15/2022 12:50	12.01	0.11	80.04	939.0	1092.3	6.91	32.6	54.5	21.9	48.5	8.03	7.63	7.17	39.92	40.43068	0.00	NORMAL
6/15/2022 12:51	11.95	0.20	86.66	938.6	1092.3	6.91	32.6	54.5	21.8	48.5	8.03	7.64	7.17	39.92	40.4289	0.00	NORMAL
6/15/2022 12:52	12.17	0.38	103.04	938.2	1091.4	6.91	32.7	54.5	21.8	48.5	8.04	7.64	7.17	39.92	40.42796	0.00	NORMAL
6/15/2022 12:53	12.09	0.69	78.55	937.9	1092.7	6.91	32.7	54.5	21.8	48.5	8.04	7.64	7.17	39.92	40.42512	0.00	NORMAL
6/15/2022 12:54	11.96	0.91	86.10	937.5	1094.6	6.91	32.7	54.4	21.7	48.5	8.05	7.64	7.17	39.92	40.42506	0.00	NORMAL
6/15/2022 12:55	11.84	0.57	73.91	937.1	1095.8	6.92	32.7	54.4	21.7	48.5	8.05	7.64	7.17	39.92	40.42434	0.00	NORMAL
6/15/2022 12:56	11.76	0.42	77.15	936.7	1096.6	6.92	32.7	54.4	21.7	48.5	8.04	7.64	7.17	39.92	40.42284	0.00	NORMAL
6/15/2022 12:57	11.94	0.55	86.41	936.4	1097.8	6.92	32.8	54.4	21.7	48.5	8.06	7.64	7.17	39.93	40.41912	0.00	NORMAL
6/15/2022 12:58	11.81	0.11	82.02	936.0	1097.2	6.92	32.8	54.4	21.6	48.5	8.07	7.64	7.17	39.93	40.41901	0.00	NORMAL
6/15/2022 12:59	11.99	0.33	73.72	935.7	1096.2	6.92	32.8	54.5	21.6	48.5	8.07	7.64	7.17	39.93	40.41723	0.00	NORMAL
6/15/2022 13:00	12.08	0.48	75.66	935.4	1094.1	6.93	32.8	54.5	21.6	48.5	8.07	7.64	7.17	39.93	40.41523	0.00	NORMAL
6/15/2022 13:01	12.23	0.00	75.99	935.1	1090.8	6.93	32.9	54.5	21.6	48.5	8.07	7.65	7.17	39.93	40.41373	0.00	NORMAL
6/15/2022 13:02	12.34	0.11	73.79	934.7	1087.4	6.93	32.9	54.5	21.6	48.5	8.06	7.65	7.17	39.93	40.4139	0.00	NORMAL
6/15/2022 13:03	12.38	0.11	69.51	934.4	1085.0	6.93	32.9	54.5	21.6	48.5	8.07	7.64	7.17	39.94	40.41478	0.00	NORMAL
6/15/2022 13:04	12.33	0.33	64.78	934.1	1083.4	6.93	32.9	54.5	21.5	48.5	8.07	7.64	7.17	39.94	40.4125	0.00	NORMAL
6/15/2022 13:05	12.21	0.72	62.79	933.8	1083.9	6.94	33.0	54.4	21.5	48.5	8.07	7.64	7.17	39.94	40.412	0.00	NORMAL
6/15/2022 13:06	12.18	0.47	82.66	933.5	1084.8	6.94	33.0	54.4	21.4	48.6	8.07	7.66	7.17	39.94	40.41072	0.00	NORMAL
6/15/2022 13:07	12.21	0.13	83.75	933.2	1084.8	6.94	33.0	54.4	21.4	48.6	8.07	7.66	7.17	39.94	40.40995	0.00	NORMAL
6/15/2022 13:08	12.23	0.46	70.27	932.9	1084.2	6.94	33.0	54.4	21.4	48.6	8.07	7.65	7.17	39.94	40.41317	0.00	NORMAL
6/15/2022 13:09	12.21	0.33	61.56	932.6	1083.7	6.94	33.0	54.4	21.4	48.6	8.07	7.65	7.17	39.94	40.41472	0.00	NORMAL
6/15/2022 13:10	11.97	0.38	57.10	932.4	1082.9	6.95	33.0	54.4	21.4	48.6	8.07	7.65	7.17	39.94	40.41433	0.00	NORMAL
6/15/2022 13:11	11.96	1.02	60.36	932.1	1083.9	6.95	33.0	54.4	21.4	48.6	8.08	7.65	7.17	39.94	40.41372	0.00	NORMAL
6/15/2022 13:12	11.98	4.63	77.04	931.8	1084.9	6.95	33.0	54.5	21.4	48.6	8.09	7.65	7.17	39.94	40.413	0.00	NORMAL
6/15/2022 13:13	12.10	0.14	76.75	931.6	1084.4	6.95	33.0	54.5	21.4	48.6	8.10	7.65	7.17	39.94	40.41405	0.00	NORMAL
6/15/2022 13:14	11.99	0.32	55.36	931.3	1083.6	6.95	33.0	54.5	21.4	48.6	8.10	7.65	7.17	39.94	40.41394	0.00	NORMAL
6/15/2022 13:15	11.75	0.57	50.94	931.1	1082.7	6.95	33.0	54.5	21.4	48.6	8.09	7.66	7.17	39.94	40.41744	0.00	NORMAL
6/15/2022 13:16	11.96	0.33	59.92	930.8	1080.9	6.96	33.0	54.4	21.4	48.6	8.09	7.67	7.17	39.94	40.41972	0.00	NORMAL
6/15/2022 13:17	11.72	0.89	53.55	930.5	1081.5	6.96	33.1	54.4	21.4	48.6	8.08	7.67	7.17	39.94	40.42127	0.00	NORMAL
6/15/2022 13:18	11.77	0.98	80.28	930.3	1083.1	6.96	33.1	54.4	21.4	48.6	8.08	7.68	7.17	39.94	40.42149	0.00	NORMAL
6/15/2022 13:19	11.70	0.00	74.93	930.0	1083.3	6.96	33.1	54.4	21.4	48.7	8.10	7.68	7.17	39.94	40.4231	0.00	NORMAL
6/15/2022 13:20	11.65	0.21	60.64	929.7	1084.0	6.96	33.1	54.4	21.3	48.7	8.10	7.67	7.17	39.95	40.42366	0.00	NORMAL
6/15/2022 13:21	11.43	2.21	53.16	929.5	1086.7	6.96	33.1	54.5	21.3	48.7	8.11	7.66	7.17	39.95	40.42166	0.00	NORMAL
6/15/2022 13:22	11.28	0.50	74.72	929.2	1090.2	6.97	33.2	54.5	21.3	48.7	8.11	7.65	7.17	39.95	40.41827	0.00	NORMAL
6/15/2022 13:23	11.42	0.10	76.72	929.0	1096.6	6.97	33.2	54.5	21.3	48.7	8.11	7.65	7.17	39.95	40.4146	0.00	NORMAL
6/15/2022 13:24	10.97	0.64	74.89	928.7	1106.2	6.97	33.3	54.5	21.2	48.7	8.11	7.67	7.17	39.95	40.41077	0.00	NORMAL
6/15/2022 13:25	10.60	1.35	88.20	928.5	1114.5	6.97	33.3	54.5	21.2	48.7	8.12	7.67	7.17	39.95	40.40627	0.00	NORMAL
6/15/2022 13:26	10.65	0.32	73.58	928.2	1119.6	6.97	33.3	54.4	21.1	48.7	8.13	7.67	7.17	39.95	40.4026	0.00	NORMAL
6/15/2022 13:27	11.00	0.10	76.74	928.0	1122.8	6.98	33.4	54.4	21.1	48.7	8.14	7.66	7.17	39.95	40.40155	0.00	NORMAL
6/15/2022 13:28	10.97	0.00	81.36	927.7	1124.6	6.98	33.4	54.4	21.0	48.7	8.14	7.65	7.17	39.95	40.39999	0.00	NORMAL
6/15/2022 13:29	11.17	0.22	89.78	927.4	1123.8	6.98	33.4	54.4	21.0	48.7	8.14	7.65	7.17	39.95	40.39932	0.00	NORMAL
6/15/2022 13:30	11.45	0.00	80.00	927.2	1122.6	6.98	33.5	54.4	21.0	48.8	8.13	7.64	7.17	39.95	40.39543	0.00	NORMAL
6/15/2022 13:31	11.59	0.11	77.94	927.0	1120.9	6.98	33.5	54.4	21.0	48.8	8.13	7.65	7.17	39.95	40.39277	0.00	NORMAL
6/15/2022 13:32	11.57	0.32	75.78	926.9	1119.2	6.99	33.5	54.5	20.9	48.8	8.14	7.66	7.17	39.95	40.3921	0.00	NORMAL
6/15/2022 13:33	11.74	1.98	91.56	926.7	1115.8	6.99	33.6	54.5	20.9	48.8	8.14	7.66	7.17	39.95	40.38932	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/15/2022 13:34	12.23	0.00	86.63	926.6	1110.9	6.99	33.6	54.5	20.9	48.8	8.15	7.67	7.17	39.95	40.38788	0.00	NORMAL
6/15/2022 13:35	12.47	0.00	82.76	926.4	1105.8	6.99	33.6	54.5	20.9	48.8	8.15	7.67	7.17	39.96	40.38799	0.00	NORMAL
6/15/2022 13:36	12.56	0.46	71.49	926.2	1100.9	6.99	33.6	54.5	20.9	48.9	8.15	7.67	7.17	39.96	40.38848	0.00	NORMAL
6/15/2022 13:37	12.76	0.13	78.75	926.0	1094.2	6.99	33.6	54.4	20.8	48.9	8.15	7.67	7.17	39.96	40.38688	0.00	NORMAL
6/15/2022 13:38	12.93	0.71	66.16	925.9	1088.2	6.99	33.6	54.4	20.8	48.9	8.16	7.65	7.16	39.96	40.38582	0.00	NORMAL
6/15/2022 13:39	12.66	1.56	55.71	925.7	1084.2	7.00	33.6	54.4	20.8	48.9	8.16	7.65	7.16	39.96	40.38843	0.00	NORMAL
6/15/2022 13:40	12.51	0.24	66.49	925.6	1080.5	7.00	33.6	54.4	20.8	48.9	8.16	7.64	7.17	39.96	40.39215	0.00	NORMAL
6/15/2022 13:41	12.27	0.32	59.88	925.4	1077.8	7.00	33.6	54.4	20.8	48.9	8.16	7.64	7.17	39.96	40.39443	0.00	NORMAL
6/15/2022 13:42	11.89	0.73	53.86	925.3	1077.4	7.00	33.6	54.4	20.8	48.9	8.16	7.65	7.17	39.96	40.3976	0.00	NORMAL
6/15/2022 13:43	11.73	0.35	66.93	925.1	1077.0	7.00	33.6	54.4	20.8	48.9	8.16	7.66	7.16	39.97	40.39809	0.00	NORMAL
6/15/2022 13:44	11.49	0.50	53.53	924.9	1077.9	7.00	33.6	54.4	20.9	49.0	8.16	7.66	7.16	39.97	40.40126	0.00	NORMAL
6/15/2022 13:45	11.44	6.00	53.50	924.8	1079.7	7.00	33.6	54.4	20.9	49.0	8.16	7.66	7.16	39.97	40.40126	0.00	NORMAL
6/15/2022 13:46	11.55	0.40	72.75	924.6	1080.3	7.00	33.6	54.4	20.9	49.0	8.17	7.65	7.16	39.97	40.40382	0.00	NORMAL
6/15/2022 13:47	11.60	0.11	67.45	924.4	1080.1	7.00	33.6	54.4	20.9	49.0	8.18	7.64	7.16	39.98	40.40754	0.00	NORMAL
6/15/2022 13:48	11.66	0.28	52.62	924.2	1081.5	7.01	33.5	54.4	20.9	49.0	8.19	7.64	7.16	39.98	40.41087	0.00	NORMAL
6/15/2022 13:49	11.44	0.51	53.05	924.0	1081.5	7.01	33.5	54.4	20.9	49.0	8.18	7.64	7.16	39.98	40.41209	0.00	NORMAL
6/15/2022 13:50	11.62	0.45	56.15	923.9	1081.4	7.01	33.5	54.4	20.9	49.0	8.18	7.64	7.16	39.98	40.41288	0.00	NORMAL
6/15/2022 13:51	11.78	1.26	64.18	923.7	1082.0	7.01	33.5	54.5	20.9	49.0	8.17	7.65	7.16	39.99	40.4141	0.00	NORMAL
6/15/2022 13:52	11.78	0.00	73.62	923.6	1081.9	7.01	33.5	54.5	20.9	49.0	8.17	7.66	7.16	39.99	40.41576	0.00	NORMAL
6/15/2022 13:53	11.60	0.20	58.26	923.5	1081.2	7.01	33.5	54.4	20.9	49.0	8.17	7.66	7.16	39.99	40.42054	0.00	NORMAL
6/15/2022 13:54	11.63	0.77	53.84	923.3	1080.7	7.01	33.5	54.4	20.9	49.0	8.17	7.66	7.16	39.99	40.42343	0.00	NORMAL
6/15/2022 13:55	11.83	0.58	57.44	923.2	1080.0	7.01	33.5	54.4	20.9	49.0	8.16	7.65	7.16	40.00	40.4291	0.00	NORMAL
6/15/2022 13:56	11.51	0.28	53.86	923.0	1080.9	7.01	33.5	54.4	21.0	49.0	8.16	7.64	7.16	40.00	40.43026	0.00	NORMAL
6/15/2022 13:57	11.49	1.86	63.17	922.9	1082.4	7.01	33.5	54.4	21.0	49.0	8.17	7.64	7.16	40.00	40.43015	0.00	NORMAL
6/15/2022 13:58	11.51	0.27	71.31	922.7	1082.1	7.01	33.5	54.4	21.0	49.0	8.18	7.64	7.16	40.00	40.43182	0.00	NORMAL
6/15/2022 13:59	11.55	0.20	57.99	922.6	1082.6	7.01	33.5	54.5	21.0	49.0	8.18	7.64	7.16	40.00	40.4351	0.00	NORMAL
6/15/2022 14:00	11.51	0.75	54.31	922.4	1083.8	7.01	33.5	54.5	21.0	49.0	8.18	7.64	7.16	40.00	40.43521	0.00	NORMAL
6/15/2022 14:01	11.61	0.37	69.90	922.3	1083.2	7.01	33.5	54.5	21.0	49.0	8.18	7.64	7.16	40.00	40.43466	0.00	NORMAL
6/15/2022 14:02	11.89	0.33	74.86	922.1	1083.6	7.02	33.5	54.5	21.0	49.0	8.18	7.64	7.16	40.00	40.4346	0.00	NORMAL
6/15/2022 14:03	11.93	0.74	85.13	921.9	1085.2	7.02	33.5	54.5	21.0	49.0	8.17	7.64	7.16	40.00	40.43349	0.00	NORMAL
6/15/2022 14:04	11.83	0.00	80.00	921.8	1084.9	7.02	33.5	54.5	21.0	49.0	8.17	7.64	7.16	40.00	40.43299	0.00	NORMAL
6/15/2022 14:05	12.10	0.25	78.36	921.7	1083.2	7.02	33.5	54.5	21.0	49.1	8.19	7.64	7.16	40.00	40.43644	0.00	NORMAL
6/15/2022 14:06	12.26	0.52	59.48	921.5	1082.5	7.02	33.5	54.5	21.0	49.1	8.19	7.64	7.16	40.00	40.43871	0.00	NORMAL
6/15/2022 14:07	12.02	0.83	61.07	921.4	1080.7	7.02	33.5	54.5	21.0	49.1	8.19	7.64	7.16	40.00	40.43938	0.00	NORMAL
6/15/2022 14:08	12.02	0.33	61.56	921.3	1078.8	7.02	33.5	54.5	21.0	49.1	8.19	7.63	7.16	40.00	40.44327	0.00	NORMAL
6/15/2022 14:09	11.73	1.60	55.60	921.3	1078.6	7.02	33.4	54.5	21.0	49.1	8.19	7.63	7.16	39.99	40.44488	0.00	NORMAL
6/15/2022 14:10	11.57	0.34	64.58	921.2	1079.2	7.02	33.4	54.5	21.0	49.1	8.19	7.64	7.16	39.99	40.44771	0.00	NORMAL
6/15/2022 14:11	11.27	0.40	62.33	921.1	1079.3	7.02	33.4	54.4	21.0	49.1	8.17	7.64	7.16	40.00	40.44977	0.00	NORMAL
6/15/2022 14:12	11.34	0.11	69.30	921.0	1079.8	7.03	33.4	54.4	21.0	49.1	8.16	7.64	7.16	40.00	40.45216	0.00	NORMAL
6/15/2022 14:13	11.34	0.10	68.84	920.9	1080.3	7.03	33.4	54.4	21.0	49.1	8.16	7.64	7.16	40.00	40.45477	0.00	NORMAL
6/15/2022 14:14	11.25	0.42	61.69	920.9	1080.3	7.03	33.4	54.4	21.1	49.1	8.17	7.64	7.16	40.00	40.45677	0.00	NORMAL
6/15/2022 14:15	11.28	1.26	55.91	920.9	1080.7	7.03	33.4	54.4	21.1	49.1	8.17	7.64	7.16	40.00	40.45899	0.00	NORMAL
6/15/2022 14:16	11.43	0.50	77.88	920.8	1080.1	7.03	33.3	54.4	21.1	49.1	8.18	7.64	7.15	40.00	40.46171	0.00	NORMAL
6/15/2022 14:17	11.57	0.11	66.47	920.8	1079.1	7.03	33.3	54.5	21.1	49.1	8.17	7.65	7.16	40.00	40.46494	0.00	NORMAL
6/15/2022 14:18	11.48	0.41	58.82	920.8	1078.2	7.03	33.3	54.5	21.2	49.1	8.16	7.66	7.16	40.00	40.46733	0.00	NORMAL
6/15/2022 14:19	11.55	0.11	64.80	920.8	1076.5	7.03	33.3	54.5	21.2	49.1	8.15	7.67	7.16	40.00	40.46783	0.00	NORMAL
6/15/2022 14:20	11.64	0.33	64.56	920.7	1074.6	7.03	33.3	54.5	21.2	49.1	8.15	7.66	7.16	40.00	40.47132	0.00	NORMAL
6/15/2022 14:21	11.66	1.55	57.63	920.7	1074.0	7.03	33.2	54.5	21.2	49.1	8.15	7.66	7.16	40.01	40.47421	0.00	NORMAL
6/15/2022 14:22	11.59	0.71	71.95	920.7	1073.3	7.03	33.2	54.4	21.2	49.1	8.15	7.66	7.16	40.01	40.47616	0.00	NORMAL
6/15/2022 14:23	11.54	0.32	70.88	920.7	1072.8	7.03	33.2	54.4	21.2	49.1	8.14	7.64	7.16	40.01	40.47805	0.00	NORMAL
6/15/2022 14:24	11.51	0.20	70.94	920.7	1073.1	7.03	33.2	54.4	21.3	49.1	8.14	7.64	7.16	40.01	40.47982	0.00	NORMAL
6/15/2022 14:25	11.51	0.22	75.50	920.7	1072.9	7.03	33.1	54.4	21.3	49.1	8.14	7.63	7.16	40.01	40.48294	0.00	NORMAL
6/15/2022 14:26	11.52	0.00	71.72	920.7	1072.5	7.03	33.1	54.4	21.3	49.1	8.15	7.63	7.16	40.01	40.48433	0.00	NORMAL
6/15/2022 14:27	11.49	1.17	62.55	920.8	1073.0	7.04	33.1	54.4	21.3	49.1	8.15	7.65	7.16	40.01	40.48689	0.00	NORMAL
6/15/2022 14:28	11.52	0.48	75.88	920.8	1072.6	7.04	33.1	54.4	21.4	49.1	8.15	7.65	7.16	40.01	40.48927	0.00	NORMAL
6/15/2022 14:29	11.60	0.11	71.08	920.8	1071.6	7.04	33.0	54.5	21.4	49.1	8.13	7.66	7.15	40.02	40.49089	0.00	NORMAL
6/15/2022 14:30	11.64	0.10	61.88	920.9	1071.0	7.04	33.0	54.5	21.5	49.1	8.12	7.66	7.15	40.02	40.49583	0.00	NORMAL
6/15/2022 14:31	11.63	0.54	65.68	920.9	1069.8	7.04	33.0	54.5	21.5	49.1	8.12	7.65	7.15	40.02	40.49983	0.00	NORMAL
6/15/2022 14:32	11.58	0.44	62.69	921.0	1068.1	7.04	33.0	54.5	21.5	49.1	8.11	7.64	7.15	40.02	40.50322	0.00	NORMAL
6/15/2022 14:33	11.55	3.89	56.53	921.1	1068.0	7.04	33.0	54.5	21.5	49.1	8.11	7.64	7.16	40.03	40.50627	0.00	NORMAL
6/15/2022 14:34	11.54	1.67	75.26	921.2	1067.9	7.04	32.9	54.4	21.5	49.1	8.12	7.65	7.15	40.03	40.51005	0.00	NORMAL
6/15/2022 14:35	11.42	0.31	65.31	921.3	1069.0	7.04	32.9	54.4	21.5	49.1	8.12	7.66	7.15	40.03	40.51044	0.00	NORMAL
6/15/2022 14:36	11.24	0.46	65.07	921.4	1071.1	7.04	32.9	54.4	21.5	49.1	8.11	7.66	7.15	40.03	40.51266	0.00	NORMAL
6/15/2022 14:37	11.35	0.12	74.80	921.5	1072.4	7.04	32.8	54.4	21.6	49.1	8.10	7.66	7.15	40.03	40.51522	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/15/2022 14:38	11.33	0.21	65.50	921.6	1072.8	7.04	32.8	54.4	21.6	49.1	8.10	7.67	7.15	40.03	40.51539	0.00	NORMAL
6/15/2022 14:39	11.28	1.98	58.90	921.7	1074.2	7.04	32.8	54.4	21.6	49.1	8.11	7.65	7.15	40.03	40.51867	0.00	NORMAL
6/15/2022 14:40	11.29	1.08	78.50	921.7	1073.7	7.04	32.8	54.4	21.7	49.0	8.11	7.65	7.15	40.03	40.52105	0.00	NORMAL
6/15/2022 14:41	11.40	0.11	70.75	921.8	1072.3	7.04	32.7	54.4	21.7	49.0	8.11	7.64	7.15	40.03	40.52344	0.00	NORMAL
6/15/2022 14:42	11.56	0.00	67.40	921.8	1072.0	7.04	32.7	54.4	21.7	49.0	8.11	7.64	7.15	40.03	40.52739	0.00	NORMAL
6/15/2022 14:43	11.44	0.43	71.97	921.8	1071.4	7.04	32.7	54.4	21.8	49.0	8.09	7.65	7.15	40.03	40.52966	0.00	NORMAL
6/15/2022 14:44	11.56	0.12	71.78	921.8	1070.1	7.04	32.7	54.4	21.8	49.0	8.08	7.66	7.15	40.03	40.53016	0.00	NORMAL
6/15/2022 14:45	11.62	1.79	62.37	921.8	1070.2	7.04	32.6	54.4	21.8	49.0	8.07	7.66	7.15	40.03	40.53177	0.00	NORMAL
6/15/2022 14:46	11.62	0.48	76.91	921.8	1070.0	7.04	32.6	54.4	21.8	49.0	8.06	7.66	7.15	40.03	40.53278	0.00	NORMAL
6/15/2022 14:47	11.62	0.00	69.65	921.8	1069.1	7.04	32.6	54.4	21.8	49.0	8.06	7.66	7.15	40.03	40.53272	0.00	NORMAL
6/15/2022 14:48	11.54	0.00	67.36	921.9	1068.6	7.04	32.6	54.4	21.9	49.0	8.06	7.66	7.15	40.03	40.53405	0.00	NORMAL
6/15/2022 14:49	11.73	0.24	82.66	921.9	1067.2	7.04	32.5	54.5	21.9	49.0	8.06	7.65	7.15	40.03	40.53405	0.00	NORMAL
6/15/2022 14:50	11.69	0.00	73.77	921.9	1065.3	7.04	32.5	54.5	21.9	49.0	8.07	7.64	7.15	40.03	40.53567	0.00	NORMAL
6/15/2022 14:51	11.79	1.32	65.69	921.9	1064.7	7.04	32.5	54.5	22.0	49.0	8.07	7.64	7.15	40.03	40.53783	0.00	NORMAL
6/15/2022 14:52	11.72	0.80	80.16	921.9	1064.2	7.04	32.5	54.5	22.0	49.0	8.06	7.63	7.15	40.03	40.5395	0.00	NORMAL
6/15/2022 14:53	11.50	0.39	69.45	921.9	1065.4	7.04	32.5	54.5	22.0	49.0	8.05	7.63	7.15	40.03	40.541	0.00	NORMAL
6/15/2022 14:54	11.47	0.77	72.19	921.9	1067.3	7.04	32.4	54.4	22.0	49.0	8.04	7.64	7.15	40.02	40.54228	0.00	NORMAL
6/15/2022 14:55	11.57	0.13	89.68	921.9	1067.8	7.04	32.4	54.4	22.0	49.0	8.04	7.65	7.15	40.02	40.54533	0.00	NORMAL
6/15/2022 14:56	11.47	0.21	80.16	921.9	1068.8	7.04	32.4	54.4	22.1	49.0	8.03	7.65	7.15	40.02	40.547	0.00	NORMAL
6/15/2022 14:57	11.24	2.25	62.86	921.9	1071.3	7.04	32.4	54.4	22.1	49.0	8.03	7.65	7.15	40.02	40.54883	0.00	NORMAL
6/15/2022 14:58	11.27	1.75	84.52	922.0	1071.0	7.04	32.3	54.4	22.1	49.0	8.03	7.65	7.15	40.02	40.54811	0.00	NORMAL
Average	**11.89**	**6.22**	**65.37**	**962.53**	**1083.90**	**6.90**	**32.73**	**54.44**	**21.71**	**48.40**	**8.02**	**7.61**	**7.19**	**39.88**	**40.32**	**0.00**	
Min	**10.60**	**0.00**	**0.00**	**920.72**	**1059.62**	**6.76**	**32.06**	**54.40**	**20.78**	**47.66**	**7.87**	**7.46**	**7.15**	**39.78**	**40.06**	**0.00**	
Max	**15.01**	**932.54**	**116.23**	**1024.30**	**1124.58**	**7.04**	**33.64**	**54.51**	**22.36**	**49.08**	**8.19**	**7.68**	**7.27**	**40.03**	**40.55**	**0.00**	Normal(on)

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/16/2022 8:58	11.69	1.81	60.30	835.5	1067.4	7.23	30.4	54.6	24.2	49.0	8.12	7.28	7.13	39.64	40.74399	0.00	NORMAL
6/16/2022 8:59	11.71	2.27	95.27	835.9	1065.3	7.24	30.5	54.6	24.1	49.1	8.14	7.29	7.13	39.64	40.74005	0.00	NORMAL
6/16/2022 9:00	11.58	1.63	57.33	836.3	1068.1	7.24	30.5	54.6	24.1	49.1	8.16	7.29	7.13	39.64	40.73349	0.00	NORMAL
6/16/2022 9:01	11.47	1.39	75.83	836.8	1067.0	7.25	30.6	54.6	24.0	49.2	8.17	7.30	7.14	39.64	40.72932	0.00	NORMAL
6/16/2022 9:02	11.53	1.23	68.72	837.2	1070.6	7.25	30.7	54.6	23.9	49.2	8.19	7.30	7.14	39.64	40.72693	0.00	NORMAL
6/16/2022 9:03	11.17	0.90	84.76	837.7	1068.7	7.26	30.8	54.6	23.8	49.2	8.20	7.30	7.14	39.64	40.72004	0.00	NORMAL
6/16/2022 9:04	11.47	1.73	68.56	838.1	1071.2	7.26	30.9	54.6	23.7	49.3	8.21	7.30	7.14	39.65	40.7146	0.00	NORMAL
6/16/2022 9:05	10.93	0.65	72.07	838.5	1070.1	7.27	31.0	54.6	23.6	49.3	8.21	7.30	7.14	39.65	40.70727	0.00	NORMAL
6/16/2022 9:06	11.45	0.59	77.47	838.9	1070.6	7.28	31.1	54.5	23.5	49.4	8.22	7.30	7.13	39.65	40.70199	0.00	NORMAL
6/16/2022 9:07	10.95	0.73	66.00	839.3	1071.2	7.28	31.2	54.5	23.4	49.4	8.22	7.30	7.13	39.65	40.6936	0.00	NORMAL
6/16/2022 9:08	11.35	0.61	93.71	839.6	1071.7	7.29	31.2	54.5	23.3	49.4	8.22	7.30	7.13	39.65	40.68821	0.00	NORMAL
6/16/2022 9:09	10.98	0.81	58.14	839.8	1072.5	7.29	31.3	54.6	23.2	49.5	8.22	7.30	7.13	39.65	40.68227	0.00	NORMAL
6/16/2022 9:10	11.20	1.27	75.39	840.0	1070.6	7.30	31.4	54.6	23.1	49.5	8.23	7.30	7.13	39.65	40.66965	0.00	NORMAL
6/16/2022 9:11	11.16	1.45	56.97	840.2	1072.7	7.30	31.5	54.6	23.0	49.6	8.23	7.29	7.14	39.65	40.65993	0.00	NORMAL
6/16/2022 9:12	11.07	0.55	80.68	840.3	1070.3	7.31	31.6	54.6	22.9	49.6	8.23	7.28	7.13	39.65	40.64821	0.00	NORMAL
6/16/2022 9:13	11.72	1.42	64.10	840.5	1070.9	7.32	31.7	54.5	22.8	49.7	8.21	7.27	7.13	39.65	40.6381	0.00	NORMAL
6/16/2022 9:14	11.34	0.57	59.55	840.8	1069.8	7.32	31.8	54.5	22.7	49.7	8.20	7.27	7.13	39.65	40.63115	0.00	NORMAL
6/16/2022 9:15	11.82	1.46	73.27	841.0	1069.4	7.33	31.9	54.5	22.6	49.7	8.18	7.26	7.13	39.65	40.62215	0.00	NORMAL
6/16/2022 9:16	11.25	0.80	59.58	841.3	1068.9	7.33	32.0	54.5	22.4	49.8	8.16	7.27	7.14	39.65	40.61021	0.00	NORMAL
6/16/2022 9:17	11.93	2.45	88.91	841.6	1067.1	7.34	32.1	54.5	22.3	49.8	8.15	7.28	7.13	39.65	40.60343	0.00	NORMAL
6/16/2022 9:18	11.64	3.06	53.44	841.9	1068.8	7.35	32.2	54.4	22.2	49.9	8.16	7.29	7.13	39.65	40.5947	0.00	NORMAL
6/16/2022 9:19	11.38	0.70	78.94	842.3	1068.8	7.35	32.3	54.4	22.1	49.9	8.17	7.29	7.13	39.65	40.58643	0.00	NORMAL
6/16/2022 9:20	11.60	0.99	77.86	842.7	1070.6	7.36	32.4	54.5	22.0	50.0	8.17	7.30	7.13	39.65	40.5811	0.00	NORMAL
6/16/2022 9:21	11.12	0.72	64.98	843.1	1071.0	7.37	32.6	54.5	21.9	50.0	8.18	7.30	7.13	39.66	40.57354	0.00	NORMAL
6/16/2022 9:22	11.48	0.77	76.66	843.6	1072.3	7.37	32.7	54.5	21.8	50.0	8.18	7.30	7.13	39.66	40.5686	0.00	NORMAL
6/16/2022 9:23	10.85	0.46	71.05	844.0	1072.4	7.38	32.8	54.5	21.8	50.1	8.19	7.30	7.13	39.66	40.55854	0.00	NORMAL
6/16/2022 9:24	11.27	0.49	92.54	844.4	1070.9	7.39	32.9	54.5	21.7	50.1	8.19	7.30	7.14	39.66	40.54871	0.00	NORMAL
6/16/2022 9:25	11.32	1.95	53.77	844.8	1071.9	7.39	33.0	54.6	21.6	50.2	8.19	7.30	7.13	39.66	40.53988	0.00	NORMAL
6/16/2022 9:26	11.11	0.29	82.44	845.2	1071.2	7.40	33.1	54.6	21.5	50.2	8.19	7.30	7.13	39.66	40.5286	0.00	NORMAL
6/16/2022 9:27	11.66	0.51	93.88	845.6	1071.1	7.41	33.2	54.5	21.3	50.3	8.20	7.30	7.13	39.66	40.5201	0.00	NORMAL
6/16/2022 9:28	11.11	0.72	62.10	846.0	1071.4	7.41	33.3	54.5	21.2	50.3	8.20	7.30	7.13	39.66	40.51037	0.00	NORMAL
6/16/2022 9:29	11.63	1.58	82.52	846.4	1071.2	7.42	33.4	54.5	21.1	50.4	8.20	7.30	7.13	39.66	40.50326	0.00	NORMAL
6/16/2022 9:30	11.22	0.75	62.48	846.8	1071.2	7.43	33.5	54.5	20.9	50.4	8.20	7.30	7.13	39.66	40.49576	0.00	NORMAL
6/16/2022 9:31	11.42	0.71	96.53	847.3	1069.8	7.43	33.6	54.4	20.8	50.5	8.19	7.30	7.13	39.66	40.48854	0.00	NORMAL
6/16/2022 9:32	11.44	1.27	66.29	847.7	1072.1	7.44	33.7	54.4	20.7	50.5	8.19	7.30	7.13	39.66	40.48016	0.00	NORMAL
6/16/2022 9:33	11.18	0.43	78.11	848.2	1070.4	7.45	33.9	54.4	20.6	50.6	8.20	7.31	7.13	39.66	40.47043	0.00	NORMAL
6/16/2022 9:34	11.62	0.92	77.81	848.7	1072.2	7.45	34.0	54.5	20.5	50.6	8.21	7.32	7.13	39.66	40.46393	0.00	NORMAL
6/16/2022 9:35	11.29	0.21	99.52	849.2	1070.7	7.46	34.1	54.5	20.4	50.7	8.23	7.33	7.13	39.66	40.45799	0.00	NORMAL
6/16/2022 9:36	11.79	1.30	85.96	849.7	1070.3	7.47	34.2	54.5	20.3	50.7	8.25	7.34	7.13	39.66	40.45243	0.00	NORMAL
6/16/2022 9:37	11.45	1.04	51.53	850.2	1069.5	7.47	34.3	54.5	20.3	50.8	8.26	7.34	7.13	39.66	40.44488	0.00	NORMAL
6/16/2022 9:38	11.85	1.92	78.10	850.7	1068.2	7.48	34.4	54.6	20.2	50.8	8.27	7.34	7.13	39.66	40.43893	0.00	NORMAL
6/16/2022 9:39	11.55	0.54	68.50	851.2	1069.0	7.49	34.5	54.6	20.1	50.9	8.28	7.34	7.13	39.66	40.43277	0.00	NORMAL
6/16/2022 9:40	11.78	0.83	87.75	851.7	1067.5	7.49	34.6	54.6	20.0	50.9	8.29	7.35	7.13	39.67	40.42755	0.00	NORMAL
6/16/2022 9:41	11.62	0.76	68.22	852.3	1069.6	7.50	34.7	54.5	19.9	51.0	8.29	7.35	7.13	39.67	40.42188	0.00	NORMAL
6/16/2022 9:42	11.54	0.74	84.12	852.8	1067.5	7.50	34.8	54.5	19.8	51.0	8.29	7.35	7.13	39.67	40.41527	0.00	NORMAL
6/16/2022 9:43	11.84	4.08	56.64	853.4	1068.4	7.51	34.8	54.5	19.7	51.1	8.30	7.35	7.13	39.67	40.40905	0.00	NORMAL
6/16/2022 9:44	11.43	0.59	68.47	853.9	1066.6	7.52	34.9	54.5	19.6	51.1	8.30	7.35	7.13	39.67	40.39988	0.00	NORMAL
6/16/2022 9:45	11.99	2.55	91.86	854.5	1066.9	7.52	35.0	54.5	19.5	51.2	8.30	7.35	7.13	39.67	40.39349	0.00	NORMAL
6/16/2022 9:46	11.41	0.67	68.31	855.0	1066.7	7.53	35.1	54.5	19.4	51.2	8.30	7.35	7.13	39.67	40.38699	0.00	NORMAL
6/16/2022 9:47	12.00	3.61	105.64	855.6	1066.1	7.53	35.2	54.5	19.3	51.3	8.30	7.36	7.13	39.68	40.38161	0.00	NORMAL
6/16/2022 9:48	11.43	0.78	84.57	856.1	1067.5	7.54	35.3	54.5	19.2	51.3	8.30	7.37	7.13	39.67	40.37532	0.00	NORMAL
6/16/2022 9:49	11.70	0.69	130.47	856.7	1065.8	7.55	35.4	54.5	19.1	51.4	8.31	7.37	7.13	39.68	40.36838	0.00	NORMAL
6/16/2022 9:50	11.66	1.90	67.33	857.2	1068.1	7.55	35.5	54.5	19.0	51.4	8.32	7.37	7.13	39.68	40.36216	0.00	NORMAL
6/16/2022 9:51	11.46	0.11	91.67	857.8	1066.2	7.56	35.6	54.5	18.9	51.4	8.32	7.37	7.13	39.68	40.35682	0.00	NORMAL
6/16/2022 9:52	11.74	40.32	80.25	858.4	1068.9	7.56	35.7	54.5	18.8	51.5	8.32	7.37	7.13	39.68	40.35321	0.00	NORMAL
6/16/2022 9:53	11.27	89.08	84.99	859.0	1066.9	7.57	35.8	54.5	18.7	51.5	8.32	7.37	7.13	39.68	40.34748	0.00	NORMAL
6/16/2022 9:54	11.82	2.07	83.15	859.5	1068.2	7.57	35.9	54.5	18.6	51.6	8.32	7.37	7.13	39.68	40.34337	0.00	NORMAL
6/16/2022 9:55	11.23	0.46	70.86	860.1	1068.0	7.58	36.0	54.5	18.5	51.6	8.31	7.37	7.13	39.68	40.33821	0.00	NORMAL
6/16/2022 9:56	11.65	1.26	107.84	860.8	1067.9	7.58	36.1	54.5	18.4	51.7	8.31	7.37	7.13	39.68	40.33288	0.00	NORMAL
6/16/2022 9:57	11.25	0.61	79.15	861.4	1068.8	7.59	36.1	54.5	18.4	51.7	8.30	7.37	7.13	39.68	40.32671	0.00	NORMAL
6/16/2022 9:58	11.53	0.93	91.09	862.0	1068.4	7.60	36.2	54.5	18.3	51.8	8.30	7.37	7.13	39.68	40.32332	0.00	NORMAL
6/16/2022 9:59	11.40	0.00	93.90	862.7	1070.6	7.60	36.3	54.5	18.2	51.8	8.30	7.36	7.13	39.69	40.31915	0.00	NORMAL
6/16/2022 10:00	11.43	1.00	103.36	863.3	1068.2	7.61	36.4	54.5	18.1	51.9	8.29	7.36	7.13	39.69	40.3151	0.00	NORMAL
6/16/2022 10:01	11.62	2.90	59.28	863.7	1070.5	7.61	36.5	54.5	18.0	51.9	8.29	7.36	7.13	39.69	40.31182	0.00	NORMAL
6/16/2022 10:02	11.22	0.68	83.82	864.1	1069.8	7.62	36.6	54.5	18.0	52.0	8.29	7.38	7.13	39.69	40.30849	0.00	NORMAL
6/16/2022 10:03	11.79	0.50	119.15	864.3	1070.1	7.62	36.6	54.5	17.9	52.0	8.28	7.39	7.13	39.69	40.3046	0.00	NORMAL
6/16/2022 10:04	11.36	0.27	84.54	864.4	1070.0	7.63	36.7	54.5	17.8	52.1	8.29	7.40	7.13	39.69	40.29882	0.00	NORMAL
6/16/2022 10:05	11.90	0.69	112.99	864.5	1070.0	7.63	36.8	54.5	17.7	52.1	8.31	7.41	7.13	39.69	40.29343	0.00	NORMAL
6/16/2022 10:06	11.40	0.90	67.96	864.5	1070.4	7.64	36.9	54.5	17.7	52.1	8.33	7.41	7.13	39.69	40.28799	0.00	NORMAL
6/16/2022 10:07	11.75	1.19	91.74	864.5	1068.2	7.64	36.9	54.5	17.6	52.2	8.34	7.42	7.13	39.69	40.28243	0.00	NORMAL
6/16/2022 10:08	11.82	0.71	81.86	864.4	1070.1	7.65	37.0	54.5	17.5	52.2	8.36	7.42	7.13	39.69	40.2771	0.00	NORMAL
6/16/2022 10:09	11.56	0.63	88.84	864.3	1068.5	7.65	37.1	54.5	17.4	52.3	8.37	7.42	7.13	39.69	40.27443	0.00	NORMAL
6/16/2022 10:10	12.19	3.79	86.81	864.1	1069.0	7.66	37.1	54.5	17.3	52.3	8.38	7.42	7.13	39.69	40.27115	0.00	NORMAL

Waste Feed Data					
Time	**Anatomical**	**Cytotoxic**	**Rx**	**Contract**	**Total Kg**
8:00	116.3	247.7	141.5		505.5
9:00	116.1	247.3	141.3		504.6
10:00	118.1	251.6	143.8		513.5
11:00	115.0	245.1	140.1		500.2
12:00	115.6	246.4	140.8		502.8
13:00	127.3	271.3	155.0		553.6
14:00	116.8	248.9	142.2		508
15:00	115.1	245.2	140.1		500.5
16:00	116.8	248.9	142.2		508
Totals	**1057.2**	**2252.4**	**1287.1**	**0.0**	**4596.7**

24 hour total Kg	**6086.9**

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/16/2022 10:11	11.56	0.90	68.32	863.9	1068.4	7.66	37.2	54.5	17.3	52.4	8.39	7.42	7.13	39.69	40.26659	0.00	NORMAL
6/16/2022 10:12	12.26	1.46	107.31	863.7	1068.1	7.66	37.3	54.5	17.2	52.4	8.39	7.43	7.13	39.69	40.26093	0.00	NORMAL
6/16/2022 10:13	11.66	0.98	67.13	863.5	1068.4	7.67	37.3	54.5	17.2	52.4	8.40	7.43	7.13	39.69	40.25676	0.00	NORMAL
6/16/2022 10:14	12.02	1.94	85.83	863.3	1067.4	7.67	37.4	54.5	17.1	52.5	8.40	7.43	7.13	39.69	40.24959	0.00	NORMAL
6/16/2022 10:15	11.86	1.43	67.59	863.2	1070.0	7.68	37.5	54.5	17.1	52.5	8.40	7.43	7.13	39.69	40.24465	0.00	NORMAL
6/16/2022 10:16	11.60	0.67	97.33	863.1	1068.3	7.68	37.5	54.6	17.0	52.6	8.41	7.43	7.13	39.69	40.23948	0.00	NORMAL
6/16/2022 10:17	12.05	1.44	81.12	862.9	1070.2	7.69	37.6	54.6	17.0	52.6	8.41	7.43	7.13	39.69	40.23542	0.00	NORMAL
6/16/2022 10:18	11.49	0.10	78.61	862.7	1068.8	7.69	37.6	54.6	16.9	52.6	8.41	7.44	7.13	39.69	40.23264	0.00	NORMAL
6/16/2022 10:19	12.25	2.70	83.72	862.5	1067.1	7.70	37.7	54.5	16.8	52.7	8.41	7.46	7.13	39.69	40.22981	0.00	NORMAL
6/16/2022 10:20	11.83	1.26	56.31	862.3	1066.3	7.70	37.7	54.5	16.8	52.7	8.41	7.47	7.13	39.69	40.2247	0.00	NORMAL
6/16/2022 10:21	12.16	0.47	88.04	862.0	1065.7	7.70	37.8	54.5	16.7	52.8	8.41	7.48	7.13	39.70	40.22121	0.00	NORMAL
6/16/2022 10:22	12.36	3.36	77.55	861.8	1063.5	7.71	37.8	54.5	16.6	52.8	8.41	7.48	7.13	39.70	40.21887	0.00	NORMAL
6/16/2022 10:23	11.89	0.90	48.65	861.5	1064.1	7.71	37.9	54.5	16.6	52.8	8.41	7.48	7.13	39.70	40.2142	0.00	NORMAL
6/16/2022 10:24	12.50	3.03	74.14	861.2	1064.8	7.72	37.9	54.5	16.5	52.9	8.41	7.49	7.13	39.70	40.20843	0.00	NORMAL
6/16/2022 10:25	11.91	2.24	48.96	861.0	1064.4	7.72	38.0	54.5	16.5	52.9	8.41	7.49	7.13	39.70	40.20343	0.00	NORMAL
6/16/2022 10:26	11.93	0.69	67.48	860.7	1065.2	7.72	38.1	54.5	16.5	52.9	8.41	7.49	7.13	39.70	40.19882	0.00	NORMAL
6/16/2022 10:27	12.20	5.37	77.52	860.4	1064.9	7.73	38.1	54.6	16.4	53.0	8.41	7.49	7.13	39.70	40.19587	0.00	NORMAL
6/16/2022 10:28	11.65	1.18	44.65	860.0	1064.8	7.73	38.2	54.6	16.4	53.0	8.41	7.49	7.13	39.70	40.19215	0.00	NORMAL
6/16/2022 10:29	12.31	3.61	70.40	859.7	1065.3	7.73	38.2	54.6	16.4	53.0	8.41	7.49	7.13	39.70	40.18832	0.00	NORMAL
6/16/2022 10:30	11.70	2.81	55.52	859.4	1065.6	7.74	38.3	54.6	16.3	53.1	8.42	7.49	7.13	39.70	40.18521	0.00	NORMAL
6/16/2022 10:31	11.97	1.98	74.95	859.2	1065.2	7.74	38.3	54.5	16.2	53.1	8.42	7.49	7.13	39.70	40.18026	0.00	NORMAL
6/16/2022 10:32	11.87	4.92	56.93	858.9	1068.6	7.75	38.4	54.5	16.2	53.1	8.42	7.49	7.13	39.70	40.17493	0.00	NORMAL
6/16/2022 10:33	11.54	2.14	89.10	858.5	1066.6	7.75	38.4	54.5	16.1	53.2	8.42	7.49	7.13	39.71	40.17237	0.00	NORMAL
6/16/2022 10:34	12.02	8.89	59.99	858.2	1067.7	7.75	38.5	54.5	16.0	53.2	8.42	7.49	7.13	39.71	40.16887	0.00	NORMAL
6/16/2022 10:35	11.41	0.83	59.18	858.0	1068.1	7.76	38.5	54.5	16.0	53.2	8.42	7.49	7.13	39.71	40.16443	0.00	NORMAL
6/16/2022 10:36	11.76	1.35	81.36	857.7	1066.9	7.76	38.6	54.5	15.9	53.3	8.42	7.49	7.13	39.71	40.1591	0.00	NORMAL
6/16/2022 10:37	11.46	0.38	62.34	857.5	1067.2	7.76	38.6	54.5	15.9	53.3	8.42	7.50	7.13	39.71	40.15537	0.00	NORMAL
6/16/2022 10:38	11.48	0.66	69.50	857.2	1069.7	7.77	38.7	54.5	15.9	53.3	8.43	7.52	7.13	39.71	40.15193	0.00	NORMAL
6/16/2022 10:39	11.79	1.29	83.86	856.9	1067.9	7.77	38.7	54.6	15.8	53.4	8.45	7.52	7.13	39.71	40.14726	0.00	NORMAL
6/16/2022 10:40	11.50	2.14	60.84	856.6	1067.3	7.77	38.7	54.6	15.8	53.4	8.46	7.53	7.14	39.71	40.14432	0.00	NORMAL
6/16/2022 10:41	11.71	0.73	73.83	856.3	1069.5	7.78	38.8	54.6	15.8	53.4	8.47	7.53	7.14	39.71	40.13671	0.00	NORMAL
6/16/2022 10:42	11.90	2.98	83.80	856.0	1065.1	7.78	38.8	54.6	15.7	53.4	8.47	7.53	7.13	39.71	40.13143	0.00	NORMAL
6/16/2022 10:43	11.79	1.08	63.65	855.7	1065.2	7.78	38.9	54.5	15.7	53.5	8.46	7.53	7.13	39.71	40.12482	0.00	NORMAL
6/16/2022 10:44	12.02	0.11	95.44	855.5	1067.6	7.79	38.9	54.5	15.6	53.5	8.45	7.52	7.13	39.71	40.12009	0.00	NORMAL
6/16/2022 10:45	11.98	1.65	94.88	855.2	1064.3	7.79	39.0	54.5	15.5	53.5	8.44	7.52	7.13	39.71	40.11432	0.00	NORMAL
6/16/2022 10:46	11.72	0.70	64.24	854.9	1065.7	7.79	39.0	54.5	15.5	53.6	8.42	7.52	7.13	39.71	40.10682	0.00	NORMAL
6/16/2022 10:47	12.04	0.13	108.24	854.7	1067.2	7.80	39.1	54.5	15.4	53.6	8.41	7.52	7.13	39.71	40.10199	0.00	NORMAL
6/16/2022 10:48	11.82	2.15	73.53	854.5	1064.5	7.80	39.1	54.5	15.4	53.6	8.40	7.53	7.14	39.70	40.09848	0.00	NORMAL
6/16/2022 10:49	11.82	0.09	52.44	854.2	1065.9	7.80	39.2	54.5	15.4	53.7	8.40	7.54	7.13	39.70	40.09487	0.00	NORMAL
6/16/2022 10:50	12.04	3.01	74.03	854.0	1066.2	7.80	39.2	54.5	15.3	53.7	8.42	7.55	7.13	39.70	40.09148	0.00	NORMAL
6/16/2022 10:51	11.72	1.42	70.25	853.8	1064.7	7.81	39.2	54.5	15.3	53.7	8.43	7.56	7.13	39.70	40.08915	0.00	NORMAL
6/16/2022 10:52	12.05	0.64	65.93	853.6	1066.0	7.81	39.3	54.5	15.3	53.7	8.44	7.56	7.13	39.70	40.08382	0.00	NORMAL
6/16/2022 10:53	12.20	7.28	73.43	853.4	1064.3	7.81	39.3	54.6	15.2	53.8	8.45	7.56	7.13	39.70	40.07832	0.00	NORMAL
6/16/2022 10:54	11.65	1.02	77.07	853.3	1064.6	7.82	39.3	54.5	15.2	53.8	8.46	7.56	7.13	39.70	40.07449	0.00	NORMAL
6/16/2022 10:55	12.22	0.92	106.86	853.1	1065.4	7.82	39.4	54.5	15.1	53.8	8.47	7.56	7.13	39.70	40.07198	0.00	NORMAL
6/16/2022 10:56	11.97	3.91	57.20	852.9	1064.7	7.82	39.4	54.5	15.1	53.8	8.47	7.56	7.13	39.70	40.06737	0.00	NORMAL
6/16/2022 10:57	11.63	1.42	45.54	852.8	1066.1	7.83	39.4	54.5	15.1	53.9	8.47	7.56	7.13	39.70	40.06409	0.00	NORMAL
6/16/2022 10:58	11.99	2.51	81.04	852.6	1066.4	7.83	39.5	54.5	15.0	53.9	8.48	7.56	7.13	39.70	40.06104	0.00	NORMAL
6/16/2022 10:59	11.32	1.11	73.76	852.4	1066.4	7.83	39.5	54.5	15.0	53.9	8.48	7.56	7.13	39.70	40.0582	0.00	NORMAL
6/16/2022 11:00	11.68	0.31	98.27	852.2	1068.3	7.83	39.5	54.5	15.0	53.9	8.48	7.56	7.13	39.70	40.05565	0.00	NORMAL
6/16/2022 11:01	11.68	1.98	73.16	852.1	1065.6	7.83	39.5	54.5	15.0	53.9	8.48	7.56	7.13	39.70	40.05404	0.00	NORMAL
6/16/2022 11:02	11.35	1.65	56.07	851.9	1065.6	7.84	39.6	54.5	15.0	54.0	8.48	7.57	7.13	39.70	40.04832	0.00	NORMAL
6/16/2022 11:03	11.69	0.87	86.90	851.8	1068.0	7.84	39.6	54.5	14.9	54.0	8.48	7.59	7.13	39.70	40.04576	0.00	NORMAL
6/16/2022 11:04	11.75	3.80	80.87	851.6	1063.5	7.84	39.6	54.5	14.9	54.0	8.50	7.60	7.13	39.70	40.04371	0.00	NORMAL
6/16/2022 11:05	11.72	1.91	48.46	851.4	1064.6	7.84	39.7	54.6	14.9	54.0	8.52	7.61	7.13	39.70	40.03921	0.00	NORMAL
6/16/2022 11:06	11.85	0.46	76.77	851.3	1067.2	7.84	39.7	54.5	14.9	54.1	8.52	7.61	7.13	39.70	40.03493	0.00	NORMAL
6/16/2022 11:07	11.84	1.17	81.81	851.2	1063.8	7.85	39.7	54.5	14.8	54.1	8.52	7.61	7.13	39.70	40.03038	0.00	NORMAL
6/16/2022 11:08	11.84	0.61	50.81	851.1	1065.5	7.85	39.7	54.5	14.8	54.1	8.51	7.61	7.14	39.70	40.02782	0.00	NORMAL
6/16/2022 11:09	12.21	3.04	66.63	851.0	1066.0	7.85	39.8	54.5	14.7	54.1	8.51	7.61	7.13	39.70	40.02282	0.00	NORMAL
6/16/2022 11:10	11.99	4.89	55.12	851.0	1062.5	7.85	39.8	54.5	14.7	54.1	8.50	7.61	7.13	39.69	40.0181	0.00	NORMAL
6/16/2022 11:11	11.94	0.80	52.06	851.0	1064.4	7.85	39.8	54.5	14.7	54.1	8.50	7.61	7.13	39.69	40.01566	0.00	NORMAL
6/16/2022 11:12	12.22	3.41	74.96	850.9	1063.6	7.85	39.8	54.5	14.7	54.2	8.49	7.61	7.13	39.69	40.01288	0.00	NORMAL
6/16/2022 11:13	11.94	3.84	53.23	850.9	1061.4	7.86	39.8	54.5	14.7	54.2	8.49	7.61	7.13	39.69	40.01227	0.00	NORMAL
6/16/2022 11:14	12.16	0.49	69.64	850.8	1064.2	7.86	39.9	54.5	14.7	54.2	8.49	7.61	7.13	39.69	40.00782	0.00	NORMAL
6/16/2022 11:15	12.16	6.49	69.42	850.8	1063.2	7.86	39.9	54.6	14.7	54.2	8.49	7.61	7.13	39.69	40.00788	0.00	NORMAL
6/16/2022 11:16	11.72	2.96	45.29	850.8	1063.1	7.86	39.9	54.6	14.7	54.2	8.49	7.61	7.13	39.69	40.00655	0.00	NORMAL
6/16/2022 11:17	12.13	1.02	62.07	850.7	1065.4	7.86	39.9	54.6	14.7	54.3	8.48	7.62	7.13	39.69	40.00632	0.00	NORMAL
6/16/2022 11:18	11.99	2.66	64.01	850.6	1061.2	7.87	39.9	54.6	14.6	54.3	8.48	7.63	7.13	39.69	40.00466	0.00	NORMAL
6/16/2022 11:19	12.31	5.36	60.28	850.6	1053.8	7.87	39.9	54.6	14.6	54.3	8.49	7.64	7.13	39.69	40.00249	0.00	NORMAL
6/16/2022 11:20	12.37	4.91	45.10	850.6	1054.8	7.87	40.0	54.5	14.6	54.3	8.51	7.65	7.13	39.69	40.00066	0.00	NORMAL
6/16/2022 11:21	11.66	0.36	51.60	850.6	1054.8	7.87	40.0	54.5	14.5	54.3	8.53	7.66	7.13	39.68	39.99805	0.00	NORMAL
6/16/2022 11:22	12.30	5.01	69.34	850.7	1052.2	7.87	40.0	54.5	14.5	54.3	8.53	7.66	7.13	39.68	39.99672	0.00	NORMAL
6/16/2022 11:23	12.52	8.82	55.04	850.8	1049.9	7.87	40.0	54.5	14.5	54.3	8.52	7.65	7.13	39.68	39.99411	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/16/2022 11:24	12.51	8.05	61.01	850.9	1047.2	7.88	40.0	54.5	14.5	54.3	8.52	7.65	7.13	39.68	39.99306	0.00	NORMAL
6/16/2022 11:25	12.65	16.68	64.13	850.9	1036.3	7.88	40.0	54.5	14.5	54.3	8.51	7.65	7.13	39.68	39.99339	0.00	NORMAL
6/16/2022 11:26	13.19	21.54	67.38	851.1	1020.0	7.88	40.0	54.6	14.6	54.4	8.51	7.65	7.14	39.68	39.99478	0.00	NORMAL
6/16/2022 11:27	13.63	20.81	50.91	851.2	1008.2	7.88	40.0	54.6	14.6	54.4	8.50	7.65	7.14	39.68	39.99461	0.00	NORMAL
6/16/2022 11:28	13.34	9.48	50.70	851.3	1000.7	7.88	40.0	54.6	14.6	54.4	8.50	7.65	7.13	39.68	39.99495	0.00	NORMAL
6/16/2022 11:29	13.09	7.44	60.56	851.5	996.9	7.88	40.0	54.6	14.6	54.4	8.50	7.65	7.13	39.68	39.99528	0.00	NORMAL
6/16/2022 11:30	12.99	9.63	62.48	851.7	996.3	7.88	40.0	54.6	14.6	54.4	8.49	7.65	7.13	39.68	39.99706	0.00	NORMAL
6/16/2022 11:31	12.76	9.46	65.88	851.8	997.6	7.89	40.0	54.6	14.6	54.4	8.49	7.65	7.13	39.68	40.00301	0.00	NORMAL
6/16/2022 11:32	12.47	16.96	57.98	852.0	998.8	7.89	39.9	54.5	14.6	54.4	8.49	7.65	7.13	39.68	40.01412	0.00	NORMAL
6/16/2022 11:33	12.03	6.64	42.72	852.2	1001.0	7.89	39.9	54.5	14.6	54.4	8.49	7.64	7.13	39.68	40.02806	0.00	NORMAL
6/16/2022 11:34	11.44	25.42	44.42	852.4	1004.0	7.89	39.9	54.5	14.6	54.4	8.49	7.66	7.13	39.68	40.03429	0.00	NORMAL
6/16/2022 11:35	11.34	7.70	55.84	852.6	1006.9	7.89	39.9	54.5	14.6	54.4	8.48	7.67	7.13	39.68	40.03634	0.00	NORMAL
6/16/2022 11:36	11.19	8.49	68.33	852.9	1009.8	7.89	39.9	54.5	14.6	54.4	8.48	7.67	7.13	39.68	40.04634	0.00	NORMAL
6/16/2022 11:37	11.03	1.55	72.36	853.1	1012.6	7.89	39.8	54.5	14.7	54.4	8.48	7.67	7.13	39.68	40.05841	0.00	NORMAL
6/16/2022 11:38	10.63	1.95	57.02	853.3	1014.0	7.89	39.8	54.6	14.8	54.4	8.48	7.67	7.13	39.68	40.07135	0.00	NORMAL
6/16/2022 11:39	10.76	0.87	50.08	853.6	1014.0	7.89	39.8	54.6	14.8	54.4	8.50	7.68	7.13	39.68	40.08118	0.00	NORMAL
6/16/2022 11:40	11.07	0.67	47.25	853.9	1013.8	7.90	39.7	54.6	14.9	54.4	8.51	7.68	7.13	39.68	40.08857	0.00	NORMAL
6/16/2022 11:41	10.96	1.16	43.11	854.2	1014.2	7.90	39.7	54.6	14.9	54.4	8.51	7.68	7.13	39.68	40.09819	0.00	NORMAL
6/16/2022 11:42	10.71	1.92	38.30	854.5	1016.2	7.90	39.6	54.6	15.0	54.4	8.51	7.68	7.13	39.68	40.10413	0.00	NORMAL
6/16/2022 11:43	10.44	24.59	47.29	854.9	1018.2	7.90	39.6	54.6	15.0	54.4	8.50	7.67	7.13	39.68	40.10913	0.00	NORMAL
6/16/2022 11:44	10.82	5.45	51.87	855.2	1019.1	7.90	39.6	54.6	15.0	54.4	8.50	7.67	7.13	39.68	40.1148	0.00	NORMAL
6/16/2022 11:45	11.06	3.95	50.80	855.6	1018.8	7.90	39.5	54.6	15.0	54.3	8.49	7.67	7.13	39.68	40.11824	0.00	NORMAL
6/16/2022 11:46	11.51	8.21	51.19	856.0	1017.0	7.90	39.5	54.5	15.0	54.3	8.48	7.67	7.13	39.68	40.12286	0.00	NORMAL
6/16/2022 11:47	11.97	12.89	48.50	856.4	1012.7	7.90	39.5	54.5	15.0	54.3	8.48	7.67	7.13	39.68	40.1278	0.00	NORMAL
6/16/2022 11:48	12.11	6.44	39.84	856.8	1008.3	7.90	39.4	54.5	15.1	54.3	8.47	7.67	7.13	39.68	40.13124	0.00	NORMAL
6/16/2022 11:49	12.51	7.76	56.35	857.2	1004.1	7.90	39.4	54.5	15.1	54.3	8.47	7.67	7.13	39.68	40.13497	0.00	NORMAL
6/16/2022 11:50	12.59	6.28	58.29	857.6	1000.2	7.90	39.4	54.5	15.1	54.3	8.47	7.67	7.13	39.68	40.13852	0.00	NORMAL
6/16/2022 11:51	12.79	8.24	57.15	858.0	996.6	7.90	39.3	54.5	15.2	54.3	8.47	7.67	7.13	39.68	40.14396	0.00	NORMAL
6/16/2022 11:52	12.80	13.51	51.01	858.4	992.9	7.90	39.3	54.6	15.3	54.3	8.47	7.67	7.13	39.68	40.14863	0.00	NORMAL
6/16/2022 11:53	12.79	20.38	43.91	858.8	988.0	7.90	39.3	54.6	15.3	54.2	8.47	7.67	7.13	39.68	40.15169	0.00	NORMAL
6/16/2022 11:54	13.14	22.59	43.54	859.3	983.5	7.90	39.3	54.6	15.4	54.2	8.47	7.68	7.13	39.68	40.15708	0.00	NORMAL
6/16/2022 11:55	12.66	9.14	39.15	859.7	987.1	7.90	39.2	54.6	15.4	54.2	8.47	7.68	7.13	39.68	40.16108	0.00	NORMAL
6/16/2022 11:56	11.56	2.67	26.60	860.2	1001.6	7.91	39.2	54.6	15.4	54.2	8.47	7.66	7.13	39.68	40.16469	0.00	NORMAL
6/16/2022 11:57	11.01	0.37	43.60	860.6	1018.2	7.91	39.2	54.6	15.4	54.2	8.47	7.65	7.13	39.67	40.16558	0.00	NORMAL
6/16/2022 11:58	11.18	7.56	54.11	861.1	1032.0	7.91	39.2	54.6	15.4	54.2	8.47	7.64	7.13	39.67	40.16758	0.00	NORMAL
6/16/2022 11:59	10.58	2.50	35.68	861.6	1050.8	7.91	39.2	54.5	15.3	54.2	8.45	7.63	7.13	39.67	40.16808	0.00	NORMAL
6/16/2022 12:00	9.95	0.17	57.59	862.1	1064.2	7.91	39.2	54.5	15.3	54.2	8.44	7.62	7.13	39.67	40.16863	0.00	NORMAL
6/16/2022 12:01	10.72	5.10	65.18	862.6	1062.8	7.91	39.2	54.5	15.3	54.1	8.42	7.62	7.13	39.67	40.17091	0.00	NORMAL
6/16/2022 12:02	11.48	1.79	33.89	863.1	1063.8	7.91	39.2	54.5	15.4	54.1	8.40	7.62	7.13	39.67	40.17207	0.00	NORMAL
6/16/2022 12:03	11.38	0.26	39.20	863.7	1070.7	7.91	39.2	54.5	15.4	54.1	8.39	7.61	7.13	39.67	40.17174	0.00	NORMAL
6/16/2022 12:04	11.41	5.59	59.68	864.2	1068.7	7.91	39.2	54.6	15.4	54.1	8.38	7.61	7.13	39.67	40.17241	0.00	NORMAL
6/16/2022 12:05	11.36	1.99	34.56	864.7	1069.3	7.91	39.2	54.6	15.5	54.1	8.37	7.61	7.12	39.67	40.1734	0.00	NORMAL
6/16/2022 12:06	11.58	0.38	50.93	865.2	1074.3	7.91	39.2	54.6	15.5	54.1	8.37	7.63	7.12	39.67	40.17546	0.00	NORMAL
6/16/2022 12:07	11.75	10.36	67.54	865.7	1069.1	7.92	39.2	54.6	15.5	54.1	8.36	7.64	7.12	39.67	40.17802	0.00	NORMAL
6/16/2022 12:08	12.30	15.29	46.01	866.1	1057.7	7.92	39.1	54.6	15.5	54.1	8.36	7.65	7.13	39.67	40.18119	0.00	NORMAL
6/16/2022 12:09	12.91	10.19	43.19	866.5	1048.0	7.92	39.1	54.6	15.5	54.1	8.36	7.65	7.13	39.67	40.18713	0.00	NORMAL
6/16/2022 12:10	12.73	10.13	44.24	866.9	1032.5	7.92	39.1	54.6	15.5	54.1	8.36	7.65	7.13	39.67	40.19702	0.00	NORMAL
6/16/2022 12:11	13.22	18.49	38.27	867.3	1017.4	7.92	39.1	54.5	15.5	54.1	8.36	7.65	7.12	39.67	40.20407	0.00	NORMAL
6/16/2022 12:12	13.13	19.40	26.98	867.7	1009.2	7.92	39.0	54.5	15.5	54.0	8.36	7.65	7.12	39.67	40.21313	0.00	NORMAL
6/16/2022 12:13	12.69	13.09	40.52	868.0	1004.2	7.92	39.0	54.5	15.5	54.0	8.36	7.65	7.12	39.67	40.22135	0.00	NORMAL
6/16/2022 12:14	12.39	16.44	41.51	868.4	1001.5	7.92	38.9	54.5	15.6	54.0	8.36	7.65	7.12	39.67	40.22207	0.00	NORMAL
6/16/2022 12:15	11.57	8.11	34.22	868.7	1001.1	7.92	38.9	54.6	15.7	54.0	8.36	7.66	7.12	39.67	40.23285	0.00	NORMAL
6/16/2022 12:16	10.57	7.15	42.90	869.1	1001.9	7.92	38.8	54.6	15.7	54.0	8.37	7.66	7.12	39.67	40.23907	0.00	NORMAL
6/16/2022 12:17	10.30	4.61	47.98	869.5	1006.7	7.92	38.8	54.6	15.8	54.0	8.36	7.65	7.12	39.67	40.24352	0.00	NORMAL
6/16/2022 12:18	9.76	1.25	33.49	869.8	1022.0	7.92	38.8	54.6	15.9	54.0	8.35	7.65	7.12	39.67	40.24868	0.00	NORMAL
6/16/2022 12:19	9.12	0.34	45.92	870.2	1040.5	7.92	38.7	54.6	15.9	54.0	8.33	7.64	7.12	39.67	40.25046	0.00	NORMAL
6/16/2022 12:20	9.13	1.64	57.17	870.5	1053.6	7.92	38.7	54.6	15.9	53.9	8.32	7.64	7.12	39.67	40.25252	0.00	NORMAL
6/16/2022 12:21	9.92	3.63	51.94	870.9	1065.9	7.92	38.7	54.6	15.9	53.9	8.31	7.64	7.12	39.67	40.25702	0.00	NORMAL
6/16/2022 12:22	10.27	0.44	46.36	871.2	1077.8	7.92	38.7	54.6	15.9	53.9	8.30	7.63	7.12	39.67	40.25946	0.00	NORMAL
6/16/2022 12:23	10.70	2.49	66.18	871.5	1075.6	7.92	38.7	54.5	15.9	53.9	8.29	7.63	7.12	39.67	40.26179	0.00	NORMAL
6/16/2022 12:24	11.89	4.47	55.93	871.8	1066.0	7.92	38.6	54.5	15.9	53.9	8.29	7.63	7.12	39.67	40.26429	0.00	NORMAL
6/16/2022 12:25	12.67	8.29	50.69	872.1	1057.9	7.92	38.6	54.5	15.9	53.9	8.29	7.63	7.12	39.67	40.26923	0.00	NORMAL
6/16/2022 12:26	12.47	8.85	44.46	872.3	1047.3	7.93	38.6	54.5	15.9	53.8	8.29	7.63	7.12	39.67	40.27685	0.00	NORMAL
6/16/2022 12:27	12.63	13.19	53.19	872.6	1030.4	7.93	38.5	54.5	16.0	53.8	8.29	7.63	7.12	39.67	40.28724	0.00	NORMAL
6/16/2022 12:28	13.23	15.75	47.13	872.9	1015.8	7.93	38.5	54.6	16.1	53.8	8.29	7.63	7.12	39.67	40.29451	0.00	NORMAL
6/16/2022 12:29	13.32	26.27	49.01	873.2	1003.1	7.93	38.5	54.6	16.1	53.8	8.29	7.63	7.12	39.67	40.29985	0.00	NORMAL
6/16/2022 12:30	13.45	69.97	49.74	873.4	991.4	7.93	38.4	54.6	16.2	53.8	8.29	7.63	7.12	39.67	40.30657	0.00	NORMAL
6/16/2022 12:31	13.20	49.44	38.21	873.7	982.4	7.93	38.4	54.7	16.3	53.8	8.29	7.65	7.12	39.67	40.31279	0.00	NORMAL
6/16/2022 12:32	12.49	83.27	36.51	874.0	978.6	7.93	38.3	54.7	16.3	53.7	8.30	7.65	7.12	39.67	40.3214	0.00	NORMAL
6/16/2022 12:33	11.60	540.20	51.87	874.3	978.7	7.93	38.3	54.7	16.4	53.7	8.30	7.63	7.12	39.67	40.32795	0.00	NORMAL
6/16/2022 12:34	11.04	28.58	39.78	874.6	989.0	7.93	38.2	54.6	16.4	53.7	8.29	7.62	7.12	39.67	40.33345	0.00	NORMAL
6/16/2022 12:35	10.30	1.55	32.37	874.9	1008.5	7.93	38.2	54.6	16.4	53.7	8.27	7.61	7.12	39.67	40.33712	0.00	NORMAL
6/16/2022 12:36	9.54	0.45	38.31	875.2	1030.7	7.93	38.2	54.6	16.4	53.7	8.26	7.62	7.12	39.67	40.33834	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/16/2022 12:37	9.58	0.36	56.42	875.5	1050.5	7.93	38.2	54.6	16.4	53.6	8.25	7.62	7.12	39.67	40.34084	0.00	NORMAL
6/16/2022 12:38	10.31	0.31	54.16	875.8	1069.2	7.93	38.2	54.5	16.4	53.6	8.24	7.63	7.12	39.67	40.34245	0.00	NORMAL
6/16/2022 12:39	11.03	0.00	53.35	876.1	1079.1	7.93	38.2	54.6	16.4	53.6	8.24	7.63	7.12	39.67	40.34323	0.00	NORMAL
6/16/2022 12:40	11.53	0.62	48.64	876.3	1080.8	7.93	38.2	54.6	16.4	53.6	8.23	7.64	7.12	39.67	40.3434	0.00	NORMAL
6/16/2022 12:41	12.07	0.00	56.69	876.6	1079.2	7.93	38.2	54.6	16.4	53.6	8.23	7.64	7.12	39.67	40.34296	0.00	NORMAL
6/16/2022 12:42	12.25	0.40	59.10	876.8	1080.5	7.93	38.2	54.6	16.4	53.6	8.23	7.64	7.12	39.67	40.34306	0.00	NORMAL
6/16/2022 12:43	12.14	0.33	87.27	877.1	1080.4	7.93	38.2	54.7	16.4	53.6	8.23	7.64	7.12	39.67	40.34195	0.00	NORMAL
6/16/2022 12:44	12.44	3.07	91.70	877.4	1078.6	7.93	38.3	54.7	16.4	53.6	8.24	7.63	7.12	39.67	40.34195	0.00	NORMAL
6/16/2022 12:45	12.07	1.35	55.49	877.6	1081.1	7.93	38.3	54.7	16.4	53.6	8.24	7.64	7.12	39.67	40.34056	0.00	NORMAL
6/16/2022 12:46	11.90	0.11	65.71	877.8	1083.9	7.93	38.3	54.7	16.4	53.6	8.24	7.66	7.12	39.67	40.33957	0.00	NORMAL
6/16/2022 12:47	12.28	8.40	83.19	878.1	1079.3	7.93	38.3	54.6	16.3	53.6	8.25	7.65	7.12	39.66	40.33856	0.00	NORMAL
6/16/2022 12:48	11.99	6.02	44.38	878.4	1079.6	7.93	38.3	54.6	16.3	53.5	8.25	7.65	7.12	39.66	40.33717	0.00	NORMAL
6/16/2022 12:49	11.92	0.85	75.33	878.7	1082.6	7.93	38.3	54.6	16.3	53.5	8.24	7.65	7.12	39.66	40.33623	0.00	NORMAL
6/16/2022 12:50	11.95	3.01	88.80	879.0	1079.3	7.93	38.3	54.6	16.3	53.5	8.23	7.64	7.12	39.66	40.33484	0.00	NORMAL
6/16/2022 12:51	11.83	0.45	61.86	879.2	1079.6	7.93	38.4	54.6	16.2	53.5	8.21	7.64	7.12	39.66	40.33451	0.00	NORMAL
6/16/2022 12:52	12.06	0.90	76.12	879.5	1081.8	7.93	38.4	54.6	16.2	53.5	8.20	7.64	7.12	39.66	40.33173	0.00	NORMAL
6/16/2022 12:53	12.04	9.67	67.40	879.9	1073.9	7.93	38.4	54.6	16.2	53.5	8.19	7.63	7.12	39.65	40.33139	0.00	NORMAL
6/16/2022 12:54	12.48	4.47	61.34	880.2	1063.8	7.94	38.4	54.6	16.2	53.5	8.19	7.65	7.12	39.65	40.33112	0.00	NORMAL
6/16/2022 12:55	12.56	3.79	60.87	880.5	1055.7	7.94	38.4	54.6	16.3	53.5	8.19	7.66	7.12	39.65	40.32928	0.00	NORMAL
6/16/2022 12:56	11.95	4.76	42.72	880.8	1044.2	7.94	38.3	54.6	16.3	53.5	8.18	7.66	7.12	39.65	40.3315	0.00	NORMAL
6/16/2022 12:57	11.63	12.57	38.63	881.2	1036.1	7.94	38.3	54.6	16.4	53.5	8.18	7.66	7.12	39.64	40.34106	0.00	NORMAL
6/16/2022 12:58	11.04	3.18	40.15	881.6	1033.8	7.94	38.2	54.6	16.4	53.5	8.19	7.66	7.12	39.64	40.34134	0.00	NORMAL
6/16/2022 12:59	10.83	4.41	51.51	882.0	1032.1	7.94	38.2	54.6	16.4	53.5	8.19	7.66	7.12	39.64	40.34339	0.00	NORMAL
6/16/2022 13:00	10.99	7.63	46.31	882.5	1029.8	7.94	38.2	54.6	16.4	53.5	8.19	7.67	7.12	39.64	40.345	0.00	NORMAL
6/16/2022 13:01	10.99	4.69	47.88	883.0	1026.1	7.94	38.1	54.6	16.5	53.5	8.20	7.68	7.12	39.64	40.34706	0.00	NORMAL
6/16/2022 13:02	11.45	3.28	51.02	883.4	1020.9	7.94	38.1	54.6	16.5	53.5	8.20	7.67	7.12	39.63	40.34917	0.00	NORMAL
6/16/2022 13:03	12.24	5.97	50.23	883.9	1015.0	7.94	38.1	54.6	16.5	53.4	8.21	7.66	7.12	39.63	40.35	0.00	NORMAL
6/16/2022 13:04	12.80	11.63	48.68	884.4	1009.9	7.94	38.1	54.6	16.5	53.4	8.20	7.66	7.12	39.63	40.3545	0.00	NORMAL
6/16/2022 13:05	12.75	18.75	45.97	884.9	1005.1	7.94	38.0	54.6	16.5	53.4	8.19	7.65	7.12	39.63	40.3565	0.00	NORMAL
6/16/2022 13:06	12.71	30.98	42.12	885.4	999.7	7.94	38.0	54.6	16.6	53.4	8.18	7.64	7.12	39.62	40.36228	0.00	NORMAL
6/16/2022 13:07	12.79	26.67	42.24	885.9	994.3	7.94	38.0	54.6	16.6	53.4	8.17	7.64	7.12	39.62	40.36994	0.00	NORMAL
6/16/2022 13:08	12.76	16.46	43.86	886.3	989.2	7.94	37.9	54.6	16.7	53.4	8.16	7.65	7.12	39.62	40.3755	0.00	NORMAL
6/16/2022 13:09	12.63	16.52	40.46	886.8	984.6	7.94	37.9	54.6	16.7	53.4	8.15	7.65	7.12	39.62	40.37961	0.00	NORMAL
6/16/2022 13:10	12.42	23.30	38.51	887.2	980.2	7.94	37.9	54.7	16.8	53.3	8.14	7.66	7.12	39.62	40.38283	0.00	NORMAL
6/16/2022 13:11	12.23	29.02	38.28	887.7	976.1	7.94	37.8	54.7	16.9	53.3	8.14	7.66	7.12	39.62	40.38766	0.00	NORMAL
6/16/2022 13:12	12.15	38.96	39.99	888.2	971.6	7.94	37.8	54.7	16.9	53.3	8.14	7.66	7.12	39.62	40.39439	0.00	NORMAL
6/16/2022 13:13	12.06	52.90	38.09	888.8	966.4	7.94	37.7	54.6	16.9	53.3	8.14	7.66	7.12	39.61	40.39894	0.00	NORMAL
6/16/2022 13:14	11.90	49.40	36.09	889.3	961.7	7.94	37.7	54.6	16.9	53.3	8.14	7.66	7.12	39.61	40.40438	0.00	NORMAL
6/16/2022 13:15	11.74	53.22	31.79	889.9	958.1	7.94	37.6	54.6	17.0	53.2	8.14	7.67	7.12	39.61	40.40955	0.00	NORMAL
6/16/2022 13:16	11.68	53.23	33.98	890.4	955.1	7.94	37.6	54.6	17.0	53.2	8.14	7.68	7.12	39.61	40.41344	0.00	NORMAL
6/16/2022 13:17	11.66	38.83	39.71	891.0	952.5	7.94	37.5	54.6	17.0	53.2	8.15	7.68	7.12	39.61	40.41694	0.00	NORMAL
6/16/2022 13:18	11.62	56.24	33.92	891.6	949.8	7.94	37.5	54.6	17.1	53.2	8.15	7.68	7.12	39.60	40.42389	0.00	NORMAL
6/16/2022 13:19	11.64	58.81	36.12	892.2	945.8	7.94	37.4	54.6	17.2	53.2	8.15	7.66	7.12	39.60	40.42933	0.00	NORMAL
6/16/2022 13:20	11.82	51.83	37.24	892.7	941.2	7.94	37.4	54.6	17.2	53.1	8.15	7.65	7.12	39.60	40.43716	0.00	NORMAL
6/16/2022 13:21	12.05	61.61	34.01	893.3	936.7	7.94	37.3	54.7	17.3	53.1	8.13	7.64	7.12	39.60	40.44555	0.00	NORMAL
6/16/2022 13:22	12.24	59.38	32.80	893.8	932.6	7.94	37.3	54.7	17.4	53.1	8.12	7.63	7.12	39.60	40.44955	0.00	NORMAL
6/16/2022 13:23	12.38	64.67	32.88	894.2	928.8	7.94	37.2	54.7	17.5	53.1	8.11	7.63	7.12	39.59	40.45544	0.00	NORMAL
6/16/2022 13:24	12.56	67.51	34.51	894.7	925.3	7.94	37.1	54.7	17.6	53.0	8.10	7.63	7.12	39.59	40.46077	0.00	NORMAL
6/16/2022 13:25	12.73	73.26	37.40	895.1	920.6	7.93	37.1	54.7	17.6	53.0	8.09	7.62	7.12	39.59	40.46649	0.00	NORMAL
6/16/2022 13:26	12.87	63.61	41.63	895.5	914.8	7.93	37.0	54.7	17.7	53.0	8.09	7.62	7.12	39.59	40.47366	0.00	NORMAL
6/16/2022 13:27	12.89	59.66	42.40	896.0	908.8	7.93	36.9	54.6	17.7	53.0	8.09	7.62	7.12	39.59	40.47939	0.00	NORMAL
6/16/2022 13:28	12.85	72.36	42.46	896.5	903.1	7.93	36.9	54.6	17.8	52.9	8.08	7.62	7.12	39.59	40.48405	0.00	NORMAL
6/16/2022 13:29	12.82	90.90	42.77	897.0	900.8	7.93	36.8	54.6	17.8	52.9	8.08	7.62	7.12	39.59	40.49138	0.00	NORMAL
6/16/2022 13:30	11.99	42.34	28.95	897.5	911.1	7.93	36.8	54.6	17.9	52.9	8.08	7.63	7.12	39.59	40.49722	0.00	NORMAL
6/16/2022 13:31	10.82	5.89	25.32	898.0	932.7	7.93	36.7	54.6	17.9	52.9	8.09	7.64	7.12	39.59	40.50116	0.00	NORMAL
6/16/2022 13:32	10.13	1.60	24.39	898.6	960.1	7.93	36.7	54.6	18.0	52.8	8.09	7.64	7.12	39.59	40.50699	0.00	NORMAL
6/16/2022 13:33	9.82	0.67	24.46	899.1	991.3	7.93	36.6	54.6	18.0	52.8	8.09	7.64	7.12	39.59	40.51121	0.00	NORMAL
6/16/2022 13:34	9.48	0.56	26.18	899.6	1022.8	7.93	36.6	54.7	18.1	52.8	8.09	7.64	7.12	39.59	40.51538	0.00	NORMAL
6/16/2022 13:35	9.19	0.49	27.76	900.1	1044.6	7.93	36.5	54.7	18.1	52.8	8.10	7.64	7.12	39.59	40.51943	0.00	NORMAL
6/16/2022 13:36	9.72	0.10	34.30	900.6	1057.3	7.93	36.5	54.7	18.2	52.7	8.10	7.64	7.12	39.59	40.52327	0.00	NORMAL
6/16/2022 13:37	10.60	0.10	30.81	901.0	1064.7	7.93	36.5	54.7	18.2	52.7	8.11	7.63	7.12	39.59	40.52455	0.00	NORMAL
6/16/2022 13:38	11.19	0.24	28.93	901.4	1068.1	7.93	36.4	54.7	18.2	52.7	8.10	7.62	7.12	39.59	40.5266	0.00	NORMAL
6/16/2022 13:39	11.28	0.50	25.41	901.9	1069.6	7.93	36.4	54.7	18.3	52.7	8.08	7.61	7.12	39.59	40.52821	0.00	NORMAL
6/16/2022 13:40	11.31	0.10	27.71	902.3	1070.9	7.93	36.4	54.7	18.3	52.6	8.07	7.61	7.12	39.59	40.52921	0.00	NORMAL
6/16/2022 13:41	11.67	3.03	47.67	902.7	1067.8	7.93	36.4	54.7	18.3	52.6	8.06	7.60	7.12	39.59	40.53466	0.00	NORMAL
6/16/2022 13:42	12.13	36.05	49.79	903.1	1059.4	7.93	36.4	54.7	18.3	52.6	8.05	7.60	7.12	39.59	40.54705	0.00	NORMAL
6/16/2022 13:43	12.26	26.59	35.41	903.5	1047.9	7.93	36.3	54.6	18.3	52.5	8.05	7.60	7.12	39.58	40.56316	0.00	NORMAL
6/16/2022 13:44	12.09	30.99	29.48	903.9	1037.7	7.93	36.2	54.6	18.4	52.5	8.04	7.60	7.12	39.58	40.5706	0.00	NORMAL
6/16/2022 13:45	11.24	542.34	28.48	904.3	1032.2	7.93	36.2	54.6	18.4	52.5	8.04	7.61	7.12	39.58	40.57433	0.00	NORMAL
6/16/2022 13:46	11.36	438.72	42.62	904.6	1027.4	7.93	36.2	54.6	18.5	52.5	8.04	7.62	7.12	39.58	40.57743	0.00	NORMAL
6/16/2022 13:47	11.57	24.79	62.34	905.0	1023.4	7.93	36.1	54.6	18.5	52.4	8.05	7.63	7.12	39.58	40.58044	0.00	NORMAL
6/16/2022 13:48	11.66	20.18	58.65	905.3	1020.2	7.93	36.1	54.6	18.5	52.4	8.05	7.62	7.12	39.58	40.58355	0.00	NORMAL
6/16/2022 13:49	11.54	10.83	35.08	905.6	1020.9	7.93	36.1	54.6	18.6	52.4	8.05	7.61	7.12	39.58	40.58738	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/16/2022 13:50	11.24	1.72	33.24	905.9	1022.1	7.93	36.0	54.6	18.6	52.4	8.03	7.60	7.12	39.58	40.58955	0.00	NORMAL
6/16/2022 13:51	11.96	0.37	40.94	906.2	1030.2	7.93	36.0	54.6	18.6	52.3	8.02	7.60	7.12	39.58	40.59016	0.00	NORMAL
6/16/2022 13:52	11.92	0.50	45.78	906.5	1044.9	7.93	36.0	54.6	18.6	52.3	8.00	7.59	7.12	39.58	40.59127	0.00	NORMAL
6/16/2022 13:53	11.47	0.42	53.48	906.8	1063.2	7.93	36.0	54.7	18.6	52.3	7.99	7.59	7.12	39.58	40.59132	0.00	NORMAL
6/16/2022 13:54	11.04	0.00	68.93	907.1	1076.0	7.93	36.0	54.7	18.6	52.3	7.98	7.59	7.12	39.57	40.59039	0.00	NORMAL
6/16/2022 13:55	11.21	0.23	61.17	907.3	1082.1	7.93	36.1	54.7	18.6	52.3	7.98	7.59	7.12	39.58	40.59066	0.00	NORMAL
6/16/2022 13:56	11.63	0.35	59.87	907.6	1083.2	7.93	36.1	54.7	18.6	52.2	7.98	7.59	7.12	39.58	40.58916	0.00	NORMAL
6/16/2022 13:57	11.84	0.32	50.66	907.9	1084.7	7.93	36.1	54.7	18.6	52.2	7.97	7.59	7.12	39.57	40.58805	0.00	NORMAL
6/16/2022 13:58	11.92	0.21	79.79	908.1	1084.1	7.93	36.1	54.7	18.5	52.2	7.97	7.59	7.12	39.57	40.58699	0.00	NORMAL
6/16/2022 13:59	12.14	4.80	78.34	908.4	1081.5	7.93	36.1	54.7	18.5	52.2	7.97	7.59	7.12	39.57	40.58627	0.00	NORMAL
6/16/2022 14:00	11.56	1.61	71.78	908.7	1083.3	7.93	36.2	54.6	18.5	52.2	7.98	7.59	7.12	39.57	40.58555	0.00	NORMAL
6/16/2022 14:01	11.82	3.58	112.30	909.0	1081.3	7.93	36.2	54.6	18.5	52.2	7.98	7.59	7.12	39.57	40.58449	0.00	NORMAL
6/16/2022 14:02	11.71	8.97	69.71	909.2	1078.5	7.93	36.2	54.6	18.4	52.2	7.98	7.58	7.12	39.57	40.58449	0.00	NORMAL
6/16/2022 14:03	11.13	1.55	67.16	909.5	1081.5	7.94	36.2	54.6	18.4	52.2	7.98	7.58	7.12	39.57	40.58338	0.00	NORMAL
6/16/2022 14:04	11.39	2.42	100.66	909.8	1082.7	7.94	36.3	54.7	18.4	52.2	7.96	7.58	7.12	39.57	40.58183	0.00	NORMAL
6/16/2022 14:05	11.07	2.18	83.43	910.1	1081.9	7.94	36.3	54.7	18.4	52.2	7.95	7.58	7.13	39.57	40.58044	0.00	NORMAL
6/16/2022 14:06	11.40	0.19	124.59	910.3	1087.2	7.94	36.3	54.7	18.4	52.2	7.93	7.57	7.12	39.57	40.57899	0.00	NORMAL
6/16/2022 14:07	11.41	2.46	147.78	910.5	1086.3	7.94	36.4	54.7	18.3	52.2	7.92	7.57	7.12	39.57	40.57671	0.00	NORMAL
6/16/2022 14:08	11.39	5.53	75.71	910.8	1082.8	7.94	36.4	54.7	18.3	52.2	7.91	7.57	7.12	39.57	40.57538	0.00	NORMAL
6/16/2022 14:09	11.70	0.72	78.50	911.0	1086.0	7.95	36.4	54.7	18.3	52.2	7.91	7.58	7.12	39.57	40.57433	0.00	NORMAL
6/16/2022 14:10	11.89	1.95	125.55	911.1	1082.4	7.95	36.5	54.7	18.2	52.2	7.90	7.59	7.12	39.56	40.57194	0.00	NORMAL
6/16/2022 14:11	11.72	5.65	64.62	911.3	1080.7	7.95	36.5	54.7	18.2	52.2	7.90	7.59	7.13	39.56	40.57122	0.00	NORMAL
6/16/2022 14:12	11.90	3.00	94.29	911.5	1083.9	7.95	36.5	54.6	18.1	52.2	7.90	7.60	7.13	39.56	40.56944	0.00	NORMAL
6/16/2022 14:13	12.11	10.24	102.71	911.7	1080.3	7.95	36.5	54.6	18.1	52.2	7.90	7.60	7.13	39.56	40.56894	0.00	NORMAL
6/16/2022 14:14	11.75	4.76	47.20	911.9	1078.6	7.95	36.6	54.6	18.0	52.2	7.90	7.60	7.12	39.56	40.56655	0.00	NORMAL
6/16/2022 14:15	12.26	0.62	88.89	912.1	1080.2	7.95	36.6	54.6	18.0	52.2	7.90	7.60	7.12	39.56	40.56461	0.00	NORMAL
6/16/2022 14:16	12.29	4.48	110.43	912.3	1074.8	7.95	36.6	54.6	18.0	52.2	7.90	7.61	7.13	39.56	40.56316	0.00	NORMAL
6/16/2022 14:17	12.06	2.39	48.86	912.6	1075.0	7.96	36.6	54.6	18.0	52.2	7.90	7.60	7.13	39.56	40.56044	0.00	NORMAL
6/16/2022 14:18	12.26	1.86	88.11	912.8	1076.7	7.96	36.6	54.6	18.0	52.2	7.91	7.60	7.13	39.56	40.55849	0.00	NORMAL
6/16/2022 14:19	12.13	7.25	87.28	913.0	1069.3	7.96	36.7	54.7	18.0	52.2	7.90	7.59	7.13	39.56	40.55805	0.00	NORMAL
6/16/2022 14:20	12.79	7.31	60.73	913.2	1062.0	7.96	36.7	54.7	18.0	52.2	7.89	7.58	7.13	39.56	40.55777	0.00	NORMAL
6/16/2022 14:21	12.23	3.95	44.41	913.4	1065.3	7.96	36.7	54.7	18.0	52.2	7.87	7.57	7.13	39.56	40.55739	0.00	NORMAL
6/16/2022 14:22	11.59	0.58	76.01	913.5	1064.2	7.96	36.7	54.7	18.0	52.2	7.86	7.58	7.13	39.56	40.55645	0.00	NORMAL
6/16/2022 14:23	12.49	1.98	85.14	913.7	1062.6	7.96	36.7	54.7	18.0	52.2	7.84	7.59	7.13	39.56	40.55639	0.00	NORMAL
6/16/2022 14:24	11.89	0.77	56.11	913.9	1069.6	7.96	36.7	54.7	17.9	52.2	7.83	7.59	7.13	39.56	40.55389	0.00	NORMAL
6/16/2022 14:25	11.90	0.93	95.89	914.1	1074.0	7.96	36.8	54.6	17.9	52.2	7.82	7.60	7.13	39.56	40.55116	0.00	NORMAL
6/16/2022 14:26	11.91	3.61	67.03	914.2	1071.0	7.96	36.8	54.6	17.8	52.2	7.82	7.60	7.13	39.55	40.549	0.00	NORMAL
6/16/2022 14:27	11.82	0.33	67.50	914.4	1072.5	7.96	36.8	54.6	17.8	52.2	7.81	7.60	7.13	39.55	40.54599	0.00	NORMAL
6/16/2022 14:28	12.17	1.09	111.28	914.5	1074.8	7.97	36.9	54.6	17.7	52.2	7.81	7.59	7.13	39.55	40.54183	0.00	NORMAL
6/16/2022 14:29	12.04	2.53	94.32	914.6	1072.9	7.97	36.9	54.6	17.7	52.2	7.81	7.59	7.13	39.55	40.53877	0.00	NORMAL
6/16/2022 14:30	12.18	0.83	79.55	914.7	1077.7	7.97	36.9	54.6	17.7	52.2	7.81	7.59	7.13	39.55	40.53566	0.00	NORMAL
6/16/2022 14:31	12.21	3.67	118.64	914.8	1078.6	7.97	37.0	54.6	17.7	52.3	7.80	7.59	7.13	39.55	40.5291	0.00	NORMAL
6/16/2022 14:32	11.80	2.22	92.96	914.8	1077.4	7.97	37.0	54.7	17.6	52.3	7.80	7.60	7.13	39.55	40.51632	0.00	NORMAL
6/16/2022 14:33	12.25	0.32	106.33	914.9	1079.1	7.97	37.1	54.7	17.6	52.3	7.81	7.61	7.13	39.54	40.50071	0.00	NORMAL
6/16/2022 14:34	12.43	1.55	96.88	914.9	1077.1	7.97	37.2	54.7	17.5	52.3	7.81	7.61	7.13	39.54	40.49405	0.00	NORMAL
6/16/2022 14:35	12.09	1.50	67.04	915.0	1076.4	7.97	37.2	54.7	17.5	52.3	7.81	7.60	7.13	39.54	40.49082	0.00	NORMAL
6/16/2022 14:36	12.55	0.50	106.18	915.0	1078.8	7.97	37.2	54.7	17.4	52.3	7.81	7.60	7.13	39.54	40.47905	0.00	NORMAL
6/16/2022 14:37	12.20	0.95	96.61	915.0	1077.6	7.97	37.3	54.6	17.3	52.3	7.81	7.60	7.13	39.54	40.46655	0.00	NORMAL
6/16/2022 14:38	11.98	0.53	76.39	915.1	1079.1	7.97	37.4	54.6	17.2	52.3	7.81	7.60	7.13	39.54	40.45155	0.00	NORMAL
6/16/2022 14:39	12.31	0.55	99.96	915.1	1081.0	7.98	37.5	54.6	17.1	52.3	7.80	7.59	7.13	39.54	40.44043	0.00	NORMAL
6/16/2022 14:40	12.02	0.23	115.12	915.2	1080.3	7.98	37.5	54.6	17.1	52.4	7.78	7.60	7.13	39.54	40.43132	0.00	NORMAL
6/16/2022 14:41	12.24	0.12	111.61	915.2	1081.1	7.98	37.6	54.6	17.0	52.4	7.77	7.61	7.13	39.54	40.42055	0.00	NORMAL
6/16/2022 14:42	12.51	3.85	101.31	915.1	1078.8	7.98	37.7	54.5	16.9	52.4	7.76	7.62	7.13	39.53	40.41299	0.00	NORMAL
6/16/2022 14:43	11.86	404.61	49.05	915.1	1079.2	7.98	37.7	54.5	16.8	52.4	7.75	7.62	7.13	39.53	40.40644	0.00	NORMAL
6/16/2022 14:44	12.43	429.34	91.53	915.1	1080.5	7.98	37.8	54.6	16.8	52.4	7.74	7.62	7.13	39.53	40.39933	0.00	NORMAL
6/16/2022 14:45	12.47	7.24	80.68	915.1	1077.7	7.98	37.8	54.6	16.8	52.4	7.74	7.62	7.13	39.53	40.39399	0.00	NORMAL
6/16/2022 14:46	12.00	1.63	63.66	915.1	1078.5	7.98	37.9	54.6	16.7	52.4	7.73	7.62	7.13	39.53	40.38794	0.00	NORMAL
6/16/2022 14:47	12.51	5.22	96.12	915.1	1077.2	7.98	37.9	54.7	16.7	52.5	7.73	7.62	7.14	39.53	40.38127	0.00	NORMAL
6/16/2022 14:48	12.27	7.02	53.13	915.0	1070.6	7.98	38.0	54.7	16.7	52.5	7.73	7.62	7.14	39.53	40.3766	0.00	NORMAL
6/16/2022 14:49	12.62	0.20	65.08	915.0	1071.3	7.98	38.0	54.7	16.6	52.5	7.73	7.63	7.14	39.53	40.37071	0.00	NORMAL
6/16/2022 14:50	12.62	1.29	95.52	915.0	1072.0	7.98	38.1	54.7	16.6	52.5	7.73	7.64	7.14	39.53	40.36538	0.00	NORMAL
6/16/2022 14:51	12.41	2.88	71.79	915.0	1069.3	7.98	38.1	54.6	16.5	52.5	7.73	7.65	7.13	39.53	40.35744	0.00	NORMAL
6/16/2022 14:52	12.52	0.64	64.84	914.9	1074.4	7.98	38.2	54.6	16.4	52.5	7.73	7.65	7.13	39.53	40.35155	0.00	NORMAL
6/16/2022 14:53	12.34	2.55	91.06	914.9	1074.8	7.98	38.2	54.6	16.3	52.5	7.73	7.65	7.14	39.53	40.34516	0.00	NORMAL
6/16/2022 14:54	11.86	1.28	66.89	914.8	1074.8	7.98	38.3	54.6	16.2	52.6	7.73	7.65	7.14	39.53	40.33927	0.00	NORMAL
6/16/2022 14:55	12.23	1.14	102.92	914.8	1075.7	7.99	38.4	54.6	16.2	52.6	7.73	7.65	7.14	39.53	40.33266	0.00	NORMAL
6/16/2022 14:56	12.38	7.26	70.55	914.7	1074.3	7.99	38.4	54.6	16.1	52.6	7.73	7.65	7.14	39.53	40.32805	0.00	NORMAL
6/16/2022 14:57	11.82	1.28	64.64	914.6	1075.5	7.99	38.5	54.6	16.1	52.6	7.73	7.67	7.14	39.53	40.32599	0.00	NORMAL
6/16/2022 14:58	12.31	0.38	108.01	914.5	1077.7	7.99	38.5	54.6	16.1	52.6	7.73	7.68	7.14	39.53	40.32249	0.00	NORMAL
6/16/2022 14:59	12.35	6.10	90.40	914.4	1073.0	7.99	38.5	54.6	16.1	52.6	7.73	7.68	7.14	39.53	40.31993	0.00	NORMAL
6/16/2022 15:00	12.39	1.69	62.00	914.3	1074.8	7.99	38.5	54.7	16.1	52.7	7.73	7.68	7.14	39.53	40.31799	0.00	NORMAL
6/16/2022 15:01	12.50	7.19	92.50	914.2	1075.3	7.99	38.6	54.7	16.1	52.7	7.73	7.68	7.14	39.53	40.3146	0.00	NORMAL
6/16/2022 15:02	12.14	6.04	64.28	914.1	1072.3	7.99	38.6	54.6	16.0	52.7	7.74	7.69	7.14	39.53	40.31166	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/16/2022 15:03	12.19	0.53	93.40	914.0	1076.3	7.99	38.6	54.6	16.0	52.7	7.74	7.70	7.14	39.53	40.31099	0.00	NORMAL
6/16/2022 15:04	11.99	0.87	104.23	913.9	1080.9	7.99	38.7	54.6	15.9	52.7	7.74	7.71	7.14	39.53	40.30871	0.00	NORMAL
6/16/2022 15:05	11.69	0.97	103.87	913.8	1079.3	7.99	38.7	54.6	15.9	52.7	7.74	7.71	7.14	39.53	40.30677	0.00	NORMAL
6/16/2022 15:06	11.65	0.18	94.15	913.7	1084.2	7.98	38.7	54.5	15.8	52.7	7.74	7.69	7.14	39.53	40.30471	0.00	NORMAL
6/16/2022 15:07	11.57	0.65	121.35	913.6	1084.9	7.98	38.7	54.5	15.8	52.7	7.74	7.70	7.14	39.53	40.30244	0.00	NORMAL
6/16/2022 15:08	11.51	0.32	103.23	913.5	1083.3	7.98	38.8	54.5	15.8	52.7	7.74	7.70	7.14	39.53	40.29944	0.00	NORMAL
6/16/2022 15:09	11.71	0.10	129.39	913.4	1085.6	7.98	38.8	54.6	15.7	52.7	7.74	7.69	7.14	39.53	40.29338	0.00	NORMAL
6/16/2022 15:10	11.74	0.11	130.78	913.3	1087.5	7.98	38.9	54.6	15.7	52.8	7.74	7.69	7.14	39.53	40.28361	0.00	NORMAL
6/16/2022 15:11	11.79	1.14	95.83	913.2	1084.0	7.98	38.9	54.6	15.7	52.8	7.74	7.69	7.14	39.53	40.27611	0.00	NORMAL
6/16/2022 15:12	11.92	0.59	79.00	913.1	1086.4	7.98	39.0	54.6	15.7	52.8	7.74	7.70	7.14	39.53	40.26766	0.00	NORMAL
6/16/2022 15:13	12.04	0.57	129.75	913.0	1084.1	7.98	39.0	54.6	15.6	52.8	7.75	7.71	7.14	39.53	40.25855	0.00	NORMAL
6/16/2022 15:14	12.27	0.74	93.42	913.0	1079.9	7.98	39.1	54.6	15.5	52.8	7.75	7.72	7.14	39.53	40.25672	0.00	NORMAL
6/16/2022 15:15	12.28	0.00	97.43	912.9	1080.2	7.98	39.2	54.6	15.4	52.8	7.75	7.71	7.14	39.53	40.24633	0.00	NORMAL
6/16/2022 15:16	12.62	0.43	101.74	912.8	1078.2	7.98	39.2	54.5	15.3	52.8	7.75	7.70	7.14	39.53	40.2405	0.00	NORMAL
6/16/2022 15:17	12.58	1.59	70.29	912.6	1074.1	7.98	39.3	54.5	15.3	52.9	7.75	7.70	7.14	39.52	40.23494	0.00	NORMAL
6/16/2022 15:18	12.66	0.00	70.63	912.5	1075.6	7.98	39.3	54.5	15.2	52.9	7.75	7.70	7.14	39.52	40.22916	0.00	NORMAL
6/16/2022 15:19	12.85	3.62	92.80	912.4	1072.7	7.98	39.3	54.5	15.2	52.9	7.74	7.72	7.14	39.52	40.22672	0.00	NORMAL
6/16/2022 15:20	12.68	3.08	54.01	912.3	1069.0	7.98	39.3	54.5	15.2	52.9	7.74	7.72	7.14	39.52	40.22361	0.00	NORMAL
6/16/2022 15:21	12.78	0.10	58.36	912.3	1072.7	7.98	39.4	54.6	15.2	52.9	7.74	7.73	7.14	39.52	40.21822	0.00	NORMAL
6/16/2022 15:22	12.58	0.12	73.39	912.2	1073.3	7.97	39.4	54.6	15.2	52.9	7.74	7.73	7.14	39.52	40.21516	0.00	NORMAL
6/16/2022 15:23	12.93	10.93	77.64	912.2	1067.5	7.97	39.4	54.6	15.2	52.9	7.74	7.73	7.14	39.52	40.21249	0.00	NORMAL
6/16/2022 15:24	12.94	2.60	46.95	912.1	1068.9	7.97	39.4	54.6	15.2	52.9	7.74	7.73	7.14	39.52	40.20921	0.00	NORMAL
6/16/2022 15:25	12.34	0.11	50.03	912.1	1070.6	7.97	39.5	54.6	15.2	52.9	7.74	7.73	7.14	39.52	40.20388	0.00	NORMAL
6/16/2022 15:26	12.45	0.00	61.33	912.1	1069.3	7.97	39.5	54.6	15.1	52.9	7.74	7.74	7.15	39.52	40.19705	0.00	NORMAL
6/16/2022 15:27	12.65	0.60	58.52	912.1	1069.9	7.97	39.5	54.6	15.0	52.9	7.73	7.75	7.15	39.52	40.18599	0.00	NORMAL
6/16/2022 15:28	12.45	0.00	67.53	912.0	1075.5	7.96	39.6	54.5	15.0	53.0	7.73	7.76	7.14	39.52	40.17922	0.00	NORMAL
6/16/2022 15:29	12.05	0.24	58.64	912.0	1078.4	7.96	39.6	54.5	14.9	53.0	7.73	7.77	7.14	39.52	40.17355	0.00	NORMAL
6/16/2022 15:30	12.21	0.58	50.31	911.9	1079.3	7.96	39.7	54.5	14.9	53.0	7.73	7.77	7.14	39.52	40.16744	0.00	NORMAL
6/16/2022 15:31	12.20	0.21	73.54	911.9	1079.0	7.96	39.7	54.5	14.8	53.0	7.73	7.75	7.14	39.52	40.16083	0.00	NORMAL
6/16/2022 15:32	12.82	31.78	100.95	911.8	1071.6	7.96	39.8	54.5	14.8	53.0	7.72	7.75	7.15	39.52	40.15182	0.00	NORMAL
6/16/2022 15:33	12.82	14.24	39.53	911.7	1063.5	7.96	39.8	54.5	14.7	53.0	7.72	7.75	7.15	39.52	40.14572	0.00	NORMAL
6/16/2022 15:34	12.89	1.46	43.66	911.6	1057.4	7.96	39.8	54.5	14.7	53.0	7.72	7.74	7.15	39.52	40.14005	0.00	NORMAL
6/16/2022 15:35	12.82	1.12	46.41	911.5	1052.4	7.96	39.9	54.5	14.7	53.0	7.71	7.76	7.15	39.52	40.13694	0.00	NORMAL
6/16/2022 15:36	12.78	1.47	44.47	911.5	1049.0	7.96	39.9	54.5	14.7	53.0	7.71	7.76	7.15	39.52	40.13544	0.00	NORMAL
6/16/2022 15:37	12.92	0.58	51.23	911.4	1052.7	7.96	39.8	54.5	14.7	53.0	7.71	7.76	7.15	39.52	40.13366	0.00	NORMAL
6/16/2022 15:38	12.23	0.23	58.17	911.3	1056.7	7.95	39.8	54.5	14.7	53.0	7.70	7.75	7.15	39.52	40.13205	0.00	NORMAL
6/16/2022 15:39	11.98	0.70	58.50	911.3	1060.2	7.95	39.8	54.5	14.7	53.0	7.70	7.75	7.15	39.51	40.13144	0.00	NORMAL
6/16/2022 15:40	12.05	0.12	61.49	911.2	1062.4	7.95	39.8	54.5	14.8	53.0	7.70	7.75	7.15	39.51	40.13143	0.00	NORMAL
6/16/2022 15:41	12.10	0.58	48.63	911.2	1063.8	7.95	39.8	54.5	14.8	53.0	7.69	7.75	7.15	39.51	40.13182	0.00	NORMAL
6/16/2022 15:42	12.12	1.03	40.15	911.1	1065.0	7.95	39.7	54.5	14.8	53.0	7.69	7.75	7.15	39.51	40.13226	0.00	NORMAL
6/16/2022 15:43	11.91	0.50	54.09	911.1	1067.0	7.95	39.7	54.5	14.8	53.0	7.69	7.76	7.15	39.51	40.13327	0.00	NORMAL
6/16/2022 15:44	11.94	0.00	65.73	911.0	1067.0	7.94	39.7	54.5	14.8	53.0	7.68	7.77	7.15	39.51	40.13393	0.00	NORMAL
6/16/2022 15:45	12.12	0.22	49.89	911.0	1066.4	7.94	39.6	54.5	14.8	53.0	7.68	7.77	7.15	39.51	40.1356	0.00	NORMAL
6/16/2022 15:46	12.10	0.23	44.19	910.9	1065.5	7.94	39.6	54.5	14.9	53.0	7.68	7.76	7.15	39.51	40.13609	0.00	NORMAL
6/16/2022 15:47	12.17	0.12	46.27	910.9	1063.7	7.94	39.6	54.5	14.9	53.0	7.67	7.75	7.15	39.51	40.13582	0.00	NORMAL
6/16/2022 15:48	12.23	0.60	48.12	910.8	1060.1	7.94	39.6	54.5	14.9	52.9	7.67	7.75	7.15	39.51	40.13626	0.00	NORMAL
6/16/2022 15:49	12.49	0.24	44.00	910.8	1056.8	7.94	39.5	54.5	14.9	52.9	7.66	7.75	7.15	39.51	40.13671	0.00	NORMAL
6/16/2022 15:50	12.51	0.36	47.19	910.7	1053.8	7.93	39.5	54.5	15.0	52.9	7.66	7.75	7.15	39.51	40.13743	0.00	NORMAL
6/16/2022 15:51	12.58	0.12	60.41	910.6	1051.4	7.93	39.5	54.5	15.0	52.9	7.66	7.75	7.15	39.51	40.13838	0.00	NORMAL
6/16/2022 15:52	12.45	0.32	52.12	910.6	1050.3	7.93	39.4	54.5	15.0	52.9	7.65	7.77	7.15	39.51	40.14021	0.00	NORMAL
6/16/2022 15:53	12.24	0.32	40.70	910.5	1050.0	7.93	39.4	54.5	15.1	52.9	7.65	7.78	7.15	39.51	40.1401	0.00	NORMAL
6/16/2022 15:54	12.08	0.75	42.05	910.4	1049.8	7.92	39.5	54.5	15.1	52.9	7.64	7.77	7.15	39.51	40.13894	0.00	NORMAL
6/16/2022 15:55	11.95	0.87	44.69	910.4	1049.2	7.92	39.5	54.5	15.1	52.8	7.64	7.76	7.15	39.52	40.14144	0.00	NORMAL
6/16/2022 15:56	12.01	0.74	40.29	910.3	1047.9	7.92	39.5	54.5	15.1	52.8	7.63	7.75	7.15	39.52	40.13799	0.00	NORMAL
6/16/2022 15:57	12.01	1.18	41.54	910.2	1045.5	7.92	39.5	54.5	15.0	52.8	7.63	7.75	7.15	39.52	40.12772	0.00	NORMAL
6/16/2022 15:58	12.14	0.23	45.76	910.0	1043.1	7.91	39.5	54.5	15.0	52.8	7.63	7.75	7.15	39.52	40.1261	0.00	NORMAL
6/16/2022 15:59	12.33	0.12	57.51	909.9	1040.9	7.91	39.6	54.5	14.9	52.8	7.62	7.77	7.15	39.52	40.12377	0.00	NORMAL
6/16/2022 16:00	12.42	0.57	50.36	909.7	1040.0	7.91	39.6	54.5	14.9	52.8	7.62	7.77	7.15	39.52	40.12238	0.00	NORMAL
6/16/2022 16:01	12.56	0.60	47.69	909.5	1039.5	7.91	39.6	54.5	14.9	52.8	7.61	7.77	7.15	39.52	40.12132	0.00	NORMAL
6/16/2022 16:02	12.58	0.63	50.38	909.3	1039.2	7.90	39.6	54.5	14.9	52.8	7.61	7.76	7.15	39.52	40.11944	0.00	NORMAL
6/16/2022 16:03	12.66	2.25	43.05	909.1	1038.5	7.90	39.6	54.5	14.9	52.8	7.60	7.76	7.15	39.53	40.1181	0.00	NORMAL
6/16/2022 16:04	12.73	3.19	36.60	908.9	1037.6	7.90	39.6	54.5	14.9	52.8	7.60	7.76	7.15	39.53	40.1151	0.00	NORMAL
6/16/2022 16:05	12.75	0.97	48.17	908.7	1036.2	7.89	39.6	54.5	14.9	52.8	7.59	7.76	7.15	39.53	40.11304	0.00	NORMAL
6/16/2022 16:06	12.70	0.44	52.20	908.4	1036.3	7.89	39.6	54.6	14.9	52.8	7.59	7.76	7.15	39.53	40.10671	0.00	NORMAL
6/16/2022 16:07	12.60	0.11	65.33	908.2	1037.4	7.89	39.6	54.5	14.9	52.8	7.59	7.77	7.16	39.53	40.09849	0.00	NORMAL
6/16/2022 16:08	12.47	0.46	43.08	908.0	1039.2	7.89	39.7	54.5	14.9	52.8	7.58	7.77	7.16	39.53	40.09216	0.00	NORMAL
6/16/2022 16:09	12.30	0.44	39.11	907.8	1041.6	7.88	39.7	54.5	14.8	52.8	7.58	7.77	7.16	39.53	40.08755	0.00	NORMAL
6/16/2022 16:10	12.17	0.00	46.03	907.6	1044.4	7.88	39.7	54.5	14.8	52.8	7.57	7.76	7.16	39.53	40.08188	0.00	NORMAL
6/16/2022 16:11	12.08	0.11	43.79	907.4	1046.2	7.88	39.7	54.5	14.7	52.7	7.57	7.76	7.16	39.53	40.07793	0.00	NORMAL
6/16/2022 16:12	12.13	0.00	41.17	907.1	1047.3	7.87	39.8	54.4	14.7	52.7	7.57	7.76	7.16	39.53	40.07116	0.00	NORMAL
6/16/2022 16:13	12.16	0.69	37.67	906.9	1048.2	7.87	39.8	54.5	14.7	52.7	7.56	7.76	7.16	39.53	40.06627	0.00	NORMAL
6/16/2022 16:14	12.18	0.35	40.11	906.6	1048.5	7.87	39.8	54.5	14.7	52.7	7.56	7.76	7.16	39.53	40.06121	0.00	NORMAL
6/16/2022 16:15	12.25	0.12	41.05	906.3	1048.1	7.87	39.8	54.5	14.7	52.7	7.55	7.76	7.16	39.53	40.05605	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/16/2022 16:16	12.32	0.59	39.84	906.1	1047.3	7.86	39.8	54.5	14.7	52.7	7.55	7.76	7.16	39.54	40.05188	0.00	NORMAL
Average	**11.87**	**12.20**	**64.54**	**880.27**	**1051.16**	**7.83**	**37.67**	**54.57**	**16.90**	**52.78**	**8.13**	**7.59**	**7.13**	**39.62**	**40.31**	**0.00**	
Min	**9.12**	**0.00**	**24.39**	**835.48**	**900.84**	**7.23**	**30.37**	**54.43**	**14.50**	**49.04**	**7.55**	**7.26**	**7.12**	**39.51**	**39.99**	**0.00**	**Normal(on)**
Max	**13.63**	**542.34**	**147.78**	**915.17**	**1087.52**	**7.99**	**40.01**	**54.72**	**24.21**	**54.40**	**8.53**	**7.78**	**7.16**	**39.71**	**40.74**	**0.00**	

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/17/2022 8:36	11.73	738.58	98.71	897.4	1068.3	6.78	33.6	54.5	20.9	49.5	8.85	7.68	7.18	39.21	38.8992	0.00	NORMAL
6/17/2022 8:37	11.95	85.76	122.25	897.4	1065.8	6.78	33.6	54.5	20.9	49.5	8.88	7.68	7.19	39.21	38.89887	0.00	NORMAL
6/17/2022 8:38	11.44	3.16	71.62	897.5	1064.9	6.78	33.6	54.4	20.8	49.5	8.90	7.68	7.19	39.21	38.89932	0.00	NORMAL
6/17/2022 8:39	12.08	2.34	113.67	897.6	1065.6	6.78	33.6	54.4	20.8	49.5	8.90	7.68	7.19	39.21	38.89932	0.00	NORMAL
6/17/2022 8:40	11.84	2.40	91.79	897.7	1062.3	6.78	33.6	54.4	20.8	49.5	8.91	7.68	7.19	39.21	38.89838	0.00	NORMAL
6/17/2022 8:41	11.56	0.97	75.10	897.8	1063.5	6.79	33.6	54.4	20.8	49.5	8.92	7.68	7.19	39.21	38.89754	0.00	NORMAL
6/17/2022 8:42	12.13	1.74	131.66	897.9	1064.2	6.79	33.7	54.4	20.8	49.6	8.94	7.68	7.19	39.21	38.89693	0.00	NORMAL
6/17/2022 8:43	11.74	1.92	87.60	898.0	1061.9	6.79	33.7	54.5	20.8	49.6	8.96	7.69	7.19	39.21	38.89588	0.00	NORMAL
6/17/2022 8:44	11.81	0.73	87.53	898.1	1064.0	6.79	33.7	54.5	20.8	49.6	8.98	7.70	7.19	39.21	38.89444	0.00	NORMAL
6/17/2022 8:45	12.19	21.35	101.07	898.1	1061.6	6.79	33.7	54.5	20.8	49.6	9.00	7.70	7.19	39.21	38.89355	0.00	NORMAL
6/17/2022 8:46	11.68	8.02	40.93	898.2	1059.3	6.79	33.7	54.5	20.8	49.6	9.02	7.70	7.19	39.21	38.8936	0.00	NORMAL
6/17/2022 8:47	12.15	3.47	65.12	898.2	1060.7	6.79	33.7	54.5	20.7	49.6	9.04	7.70	7.19	39.21	38.89288	0.00	NORMAL
6/17/2022 8:48	12.17	31.47	61.62	898.2	1057.8	6.79	33.7	54.4	20.7	49.6	9.06	7.70	7.19	39.22	38.89277	0.00	NORMAL
6/17/2022 8:49	11.40	5.46	39.42	898.2	1058.3	6.79	33.7	54.4	20.7	49.6	9.08	7.72	7.19	39.21	38.89171	0.00	NORMAL
6/17/2022 8:50	12.05	9.40	81.62	898.2	1059.3	6.79	33.8	54.4	20.7	49.6	9.08	7.72	7.19	39.22	38.89121	0.00	NORMAL
6/17/2022 8:51	11.64	20.86	49.92	898.2	1055.5	6.79	33.8	54.4	20.7	49.6	9.09	7.72	7.19	39.22	38.89021	0.00	NORMAL
6/17/2022 8:52	11.44	1.88	46.96	898.1	1057.6	6.79	33.8	54.4	20.7	49.6	9.10	7.72	7.19	39.22	38.88949	0.00	NORMAL
6/17/2022 8:53	11.70	3.79	87.00	898.1	1059.1	6.79	33.8	54.5	20.7	49.6	9.12	7.72	7.19	39.22	38.88977	0.00	NORMAL
6/17/2022 8:54	11.22	6.49	56.04	898.1	1057.3	6.79	33.8	54.5	20.7	49.6	9.14	7.74	7.19	39.22	38.89111	0.00	NORMAL
6/17/2022 8:55	11.29	172.53	47.90	898.0	1062.0	6.79	33.8	54.5	20.7	49.6	9.16	7.74	7.19	39.22	38.89071	0.00	NORMAL
6/17/2022 8:56	11.50	93.23	95.15	897.9	1061.3	6.79	33.8	54.5	20.7	49.6	9.18	7.73	7.19	39.22	38.88983	0.00	NORMAL
6/17/2022 8:57	11.29	10.11	50.44	897.9	1058.7	6.79	33.8	54.5	20.7	49.6	9.20	7.72	7.20	39.22	38.88949	0.00	NORMAL
6/17/2022 8:58	11.44	1.24	63.60	897.9	1061.8	6.80	33.8	54.5	20.6	49.7	9.22	7.72	7.19	39.23	38.88972	0.00	NORMAL
6/17/2022 8:59	11.57	6.29	89.21	897.8	1059.6	6.80	33.8	54.4	20.6	49.7	9.24	7.73	7.19	39.23	38.88927	0.00	NORMAL
6/17/2022 9:00	11.19	3.00	45.21	897.8	1059.9	6.80	33.9	54.4	20.6	49.7	9.26	7.74	7.19	39.23	38.88838	0.00	NORMAL
6/17/2022 9:01	12.06	3.95	75.81	897.7	1062.6	6.80	33.9	54.4	20.6	49.7	9.27	7.74	7.19	39.23	38.88949	0.00	NORMAL
6/17/2022 9:02	11.63	8.18	68.21	897.6	1062.3	6.80	33.9	54.4	20.6	49.7	9.28	7.74	7.19	39.23	38.89066	0.00	NORMAL
6/17/2022 9:03	11.23	2.00	52.41	897.6	1062.6	6.80	33.9	54.4	20.6	49.7	9.29	7.74	7.19	39.23	38.89188	0.00	NORMAL
6/17/2022 9:04	12.12	12.08	88.79	897.4	1061.9	6.80	33.9	54.5	20.6	49.7	9.30	7.74	7.20	39.24	38.89333	0.00	NORMAL
6/17/2022 9:05	11.31	4.89	43.45	897.3	1061.7	6.80	33.9	54.5	20.6	49.7	9.31	7.75	7.20	39.24	38.89433	0.00	NORMAL
6/17/2022 9:06	11.76	3.12	66.39	897.2	1063.4	6.80	33.9	54.5	20.6	49.7	9.33	7.76	7.19	39.24	38.8941	0.00	NORMAL
6/17/2022 9:07	11.40	4.30	65.93	897.0	1064.6	6.80	33.9	54.5	20.6	49.7	9.34	7.76	7.19	39.24	38.89455	0.00	NORMAL
6/17/2022 9:08	10.82	3.30	56.47	896.8	1065.5	6.80	33.9	54.5	20.5	49.7	9.36	7.76	7.19	39.24	38.89549	0.00	NORMAL
6/17/2022 9:09	11.66	3.02	92.52	896.6	1067.2	6.80	34.0	54.5	20.5	49.7	9.38	7.76	7.20	39.24	38.897	0.00	NORMAL
6/17/2022 9:10	10.81	2.36	53.45	896.5	1067.3	6.80	34.0	54.4	20.5	49.7	9.38	7.74	7.20	39.24	38.89755	0.00	NORMAL
6/17/2022 9:11	11.20	2.17	65.48	896.3	1067.9	6.80	34.0	54.4	20.5	49.7	9.39	7.75	7.20	39.24	38.89817	0.00	NORMAL
6/17/2022 9:12	11.51	4.06	79.25	896.1	1066.7	6.80	34.0	54.4	20.4	49.7	9.39	7.75	7.20	39.24	38.89839	0.00	NORMAL
6/17/2022 9:13	10.97	410.26	47.14	895.9	1067.1	6.80	34.0	54.4	20.4	49.7	9.39	7.75	7.20	39.24	38.899	0.00	NORMAL
6/17/2022 9:14	11.85	443.25	90.01	895.8	1067.1	6.80	34.0	54.5	20.4	49.7	9.40	7.75	7.20	39.24	38.9	0.00	NORMAL
6/17/2022 9:15	11.41	6.86	57.76	895.6	1065.5	6.80	34.1	54.5	20.4	49.7	9.40	7.75	7.20	39.24	38.901	0.00	NORMAL
6/17/2022 9:16	11.40	2.35	59.53	895.3	1066.1	6.80	34.1	54.5	20.4	49.8	9.41	7.76	7.20	39.24	38.90072	0.00	NORMAL
6/17/2022 9:17	11.85	3.14	95.57	895.1	1065.3	6.80	34.1	54.5	20.4	49.8	9.43	7.77	7.20	39.24	38.90123	0.00	NORMAL
6/17/2022 9:18	11.12	1.44	61.55	894.9	1065.1	6.80	34.1	54.5	20.4	49.8	9.44	7.77	7.20	39.24	38.90162	0.00	NORMAL
6/17/2022 9:19	11.86	1.47	97.19	894.6	1067.3	6.80	34.1	54.5	20.3	49.8	9.45	7.78	7.20	39.25	38.90223	0.00	NORMAL
6/17/2022 9:20	11.67	2.78	85.37	894.4	1065.2	6.80	34.2	54.5	20.3	49.8	9.46	7.78	7.20	39.25	38.90362	0.00	NORMAL
6/17/2022 9:21	11.25	1.48	52.29	894.2	1065.8	6.80	34.2	54.4	20.3	49.8	9.47	7.77	7.20	39.25	38.90417	0.00	NORMAL
6/17/2022 9:22	12.00	6.60	81.20	894.1	1065.6	6.80	34.2	54.4	20.2	49.8	9.47	7.76	7.20	39.25	38.90428	0.00	NORMAL
6/17/2022 9:23	11.62	5.36	52.99	893.9	1062.8	6.80	34.2	54.4	20.2	49.8	9.47	7.77	7.19	39.25	38.90467	0.00	NORMAL
6/17/2022 9:24	11.82	1.50	58.20	893.7	1063.2	6.80	34.2	54.4	20.2	49.8	9.46	7.77	7.20	39.25	38.90489	0.00	NORMAL
6/17/2022 9:25	12.32	23.59	75.24	893.5	1060.9	6.81	34.2	54.4	20.2	49.8	9.47	7.77	7.20	39.25	38.90478	0.00	NORMAL
6/17/2022 9:26	11.87	11.29	38.84	893.4	1058.2	6.81	34.2	54.5	20.2	49.8	9.47	7.77	7.20	39.25	38.90583	0.00	NORMAL
6/17/2022 9:27	12.22	2.09	50.15	893.3	1060.3	6.81	34.2	54.5	20.2	49.8	9.47	7.77	7.20	39.25	38.90667	0.00	NORMAL
6/17/2022 9:28	12.34	41.59	63.59	893.2	1056.0	6.81	34.2	54.5	20.2	49.8	9.48	7.77	7.20	39.25	38.90662	0.00	NORMAL
6/17/2022 9:29	12.08	14.58	34.01	893.2	1054.9	6.81	34.3	54.5	20.2	49.8	9.49	7.77	7.20	39.26	38.90734	0.00	NORMAL
6/17/2022 9:30	12.14	2.44	51.89	893.1	1059.0	6.81	34.3	54.5	20.2	49.8	9.50	7.78	7.20	39.26	38.90722	0.00	NORMAL
6/17/2022 9:31	12.07	32.25	60.65	893.1	1055.1	6.81	34.3	54.4	20.2	49.9	9.51	7.79	7.20	39.26	38.90644	0.00	NORMAL
6/17/2022 9:32	11.90	9.01	33.56	893.1	1054.9	6.81	34.3	54.4	20.2	49.9	9.52	7.80	7.20	39.26	38.90672	0.00	NORMAL
6/17/2022 9:33	11.87	2.64	52.19	893.0	1058.6	6.81	34.3	54.4	20.1	49.9	9.52	7.79	7.20	39.26	38.90661	0.00	NORMAL
6/17/2022 9:34	11.90	43.37	58.12	892.9	1052.8	6.81	34.3	54.4	20.2	49.9	9.51	7.78	7.20	39.26	38.90689	0.00	NORMAL
6/17/2022 9:35	12.04	11.34	30.45	892.9	1049.5	6.81	34.3	54.4	20.2	49.9	9.51	7.77	7.20	39.26	38.90733	0.00	NORMAL
6/17/2022 9:36	12.07	1.49	36.22	892.8	1053.2	6.81	34.3	54.4	20.2	49.9	9.50	7.77	7.20	39.26	38.90778	0.00	NORMAL
6/17/2022 9:37	11.50	1.03	38.72	892.8	1054.2	6.81	34.3	54.5	20.2	49.9	9.50	7.77	7.20	39.26	38.90828	0.00	NORMAL
6/17/2022 9:38	11.70	1.09	37.70	892.7	1054.8	6.81	34.3	54.5	20.2	49.9	9.51	7.77	7.20	39.26	38.90872	0.00	NORMAL
6/17/2022 9:39	12.36	20.67	59.59	892.7	1054.1	6.81	34.3	54.5	20.2	49.9	9.51	7.77	7.19	39.26	38.91027	0.00	NORMAL
6/17/2022 9:40	11.84	16.71	31.14	892.7	1051.6	6.81	34.3	54.5	20.1	49.9	9.52	7.78	7.19	39.26	38.91094	0.00	NORMAL
6/17/2022 9:41	11.88	1.93	31.24	892.7	1049.6	6.81	34.3	54.5	20.1	49.9	9.52	7.78	7.19	39.26	38.91155	0.00	NORMAL
6/17/2022 9:42	11.58	1.18	36.21	892.7	1050.3	6.81	34.3	54.4	20.1	49.9	9.52	7.78	7.19	39.26	38.91272	0.00	NORMAL
6/17/2022 9:43	11.93	4.07	78.78	892.7	1047.5	6.81	34.3	54.4	20.1	49.9	9.51	7.77	7.20	39.26	38.91372	0.00	NORMAL
6/17/2022 9:44	12.03	3.68	51.45	892.6	1052.7	6.81	34.4	54.4	20.1	49.9	9.50	7.77	7.20	39.26	38.91478	0.00	NORMAL
6/17/2022 9:45	11.20	0.89	54.37	892.6	1059.3	6.81	34.4	54.4	20.1	49.9	9.50	7.77	7.20	39.26	38.91444	0.00	NORMAL
6/17/2022 9:46	11.67	12.56	75.55	892.6	1057.2	6.81	34.4	54.5	20.1	49.9	9.49	7.77	7.19	39.27	38.91556	0.00	NORMAL

Waste Feed Data

Time	Anatomical	Cytotoxic	Rx	Contract	Total Kg
8:00	116.5	248.2	141.8		506.6
9:00	118.4	252.2	144.1		514.7
10:00	116.2	247.5	141.4		505
11:00	28.0	59.6	34.0		121.6
12:00	70.4	149.9	85.7		306
13:00	144.5	307.8	175.9		628.1
14:00	121.3	258.3	147.6		527.2
15:00	134.5	286.5	163.7		584.6
16:00	59.8	127.4	72.8		260
Totals	**909.4**	**1937.4**	**1107.1**	**0.0**	**3953.8**

24 hour total Kg **5087.4**

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/17/2022 9:47	11.66	6.60	40.31	892.6	1053.4	6.81	34.4	54.5	20.1	49.9	9.49	7.77	7.19	39.26	38.91661	0.00	NORMAL
6/17/2022 9:48	11.78	0.81	46.18	892.7	1057.8	6.81	34.4	54.5	20.0	49.9	9.49	7.76	7.19	39.27	38.91845	0.00	NORMAL
6/17/2022 9:49	11.77	3.79	77.81	892.6	1055.7	6.81	34.4	54.5	20.0	49.9	9.50	7.76	7.19	39.27	38.91967	0.00	NORMAL
6/17/2022 9:50	12.04	10.39	48.55	892.6	1050.7	6.81	34.5	54.5	20.0	49.9	9.49	7.76	7.19	39.27	38.92073	0.00	NORMAL
6/17/2022 9:51	12.11	1.21	42.55	892.6	1055.6	6.81	34.5	54.5	20.0	49.9	9.48	7.76	7.20	39.27	38.92134	0.00	NORMAL
6/17/2022 9:52	11.53	1.16	59.82	892.5	1056.9	6.81	34.5	54.5	20.0	49.9	9.47	7.76	7.20	39.27	38.92089	0.00	NORMAL
6/17/2022 9:53	12.10	12.34	71.21	892.5	1050.7	6.81	34.5	54.4	19.9	49.9	9.46	7.76	7.20	39.26	38.92184	0.00	NORMAL
6/17/2022 9:54	12.04	2.69	42.47	892.4	1055.0	6.81	34.5	54.4	19.9	49.9	9.45	7.76	7.20	39.26	38.92234	0.00	NORMAL
6/17/2022 9:55	11.64	1.39	66.50	892.3	1058.9	6.81	34.6	54.4	19.9	49.9	9.45	7.76	7.19	39.26	38.92122	0.00	NORMAL
6/17/2022 9:56	11.91	15.30	63.29	892.3	1054.4	6.81	34.6	54.4	19.9	49.9	9.45	7.76	7.19	39.26	38.92117	0.00	NORMAL
6/17/2022 9:57	11.74	2.97	35.01	892.2	1055.9	6.81	34.6	54.5	19.9	49.9	9.45	7.76	7.19	39.26	38.92056	0.00	NORMAL
6/17/2022 9:58	11.58	1.15	49.21	892.1	1061.5	6.81	34.6	54.5	19.9	50.0	9.45	7.76	7.19	39.26	38.92006	0.00	NORMAL
6/17/2022 9:59	11.64	14.48	74.04	892.1	1057.1	6.81	34.6	54.5	19.9	50.0	9.45	7.76	7.19	39.26	38.92139	0.00	NORMAL
6/17/2022 10:00	11.50	3.96	34.21	892.1	1058.5	6.81	34.6	54.5	19.9	50.0	9.44	7.76	7.19	39.26	38.92217	0.00	NORMAL
6/17/2022 10:01	11.41	3.84	53.44	892.1	1060.4	6.81	34.6	54.5	19.8	50.0	9.42	7.76	7.19	39.26	38.923	0.00	NORMAL
6/17/2022 10:02	11.45	33.78	60.37	892.0	1051.0	6.81	34.6	54.5	19.8	50.0	9.41	7.76	7.19	39.26	38.92389	0.00	NORMAL
6/17/2022 10:03	11.42	6.61	33.39	892.0	1043.9	6.82	34.6	54.4	19.8	50.0	9.40	7.76	7.19	39.26	38.92512	0.00	NORMAL
6/17/2022 10:04	11.11	0.97	47.36	892.0	1046.4	6.82	34.6	54.4	19.8	50.0	9.39	7.76	7.19	39.26	38.9264	0.00	NORMAL
6/17/2022 10:05	10.01	0.71	71.94	892.0	1047.2	6.82	34.7	54.4	19.8	50.0	9.39	7.76	7.19	39.26	38.92628	0.00	NORMAL
6/17/2022 10:06	10.52	0.54	95.33	891.9	1050.7	6.82	34.7	54.5	19.8	50.0	9.39	7.77	7.19	39.26	38.92579	0.00	NORMAL
6/17/2022 10:07	10.75	0.00	88.86	891.8	1059.9	6.82	34.7	54.5	19.8	50.0	9.39	7.79	7.19	39.26	38.92534	0.00	NORMAL
6/17/2022 10:08	10.11	0.61	82.35	891.6	1066.4	6.82	34.7	54.5	19.8	50.0	9.39	7.79	7.19	39.26	38.92573	0.00	NORMAL
6/17/2022 10:09	10.20	0.53	79.97	891.3	1069.3	6.82	34.7	54.5	19.7	50.0	9.39	7.78	7.18	39.26	38.92706	0.00	NORMAL
6/17/2022 10:10	10.75	0.44	102.41	891.0	1068.1	6.82	34.8	54.5	19.7	50.0	9.39	7.77	7.19	39.26	38.92734	0.00	NORMAL
6/17/2022 10:11	11.31	0.54	88.32	890.7	1066.6	6.82	34.8	54.5	19.7	50.0	9.37	7.77	7.19	39.26	38.92773	0.00	NORMAL
6/17/2022 10:12	10.97	0.44	74.29	890.3	1067.1	6.82	34.8	54.5	19.7	50.0	9.35	7.76	7.19	39.26	38.9284	0.00	NORMAL
6/17/2022 10:13	10.73	0.47	88.64	890.1	1067.6	6.82	34.9	54.5	19.6	50.0	9.34	7.76	7.19	39.26	38.92834	0.00	NORMAL
6/17/2022 10:14	10.81	0.43	98.04	889.8	1066.2	6.82	35.0	54.5	19.5	50.1	9.33	7.76	7.19	39.26	38.92735	0.00	NORMAL
6/17/2022 10:15	10.98	0.39	87.90	889.6	1066.8	6.82	35.0	54.5	19.5	50.1	9.32	7.76	7.19	39.26	38.92585	0.00	NORMAL
6/17/2022 10:16	10.84	0.60	100.41	889.4	1068.1	6.82	35.1	54.5	19.4	50.1	9.32	7.77	7.19	39.26	38.92451	0.00	NORMAL
6/17/2022 10:17	10.94	0.35	91.95	889.2	1066.2	6.82	35.2	54.5	19.3	50.1	9.31	7.79	7.18	39.25	38.92374	0.00	NORMAL
6/17/2022 10:18	11.15	0.50	75.40	889.0	1064.6	6.82	35.2	54.5	19.3	50.1	9.31	7.79	7.18	39.25	38.92295	0.00	NORMAL
6/17/2022 10:19	10.87	0.32	69.98	888.8	1065.0	6.82	35.3	54.5	19.2	50.1	9.31	7.79	7.19	39.25	38.9234	0.00	NORMAL
6/17/2022 10:20	10.92	0.22	96.14	888.6	1063.5	6.82	35.4	54.5	19.1	50.2	9.31	7.78	7.19	39.25	38.92229	0.00	NORMAL
6/17/2022 10:21	11.06	0.42	89.66	888.4	1061.8	6.83	35.4	54.5	19.0	50.2	9.31	7.77	7.19	39.25	38.92067	0.00	NORMAL
6/17/2022 10:22	11.12	0.42	89.38	888.2	1061.9	6.83	35.5	54.5	19.0	50.2	9.30	7.77	7.19	39.25	38.91851	0.00	NORMAL
6/17/2022 10:23	10.81	0.29	81.58	888.0	1062.2	6.83	35.5	54.5	18.9	50.2	9.28	7.77	7.18	39.25	38.9169	0.00	NORMAL
6/17/2022 10:24	10.80	0.49	86.35	887.8	1060.9	6.83	35.6	54.5	18.9	50.3	9.27	7.77	7.18	39.25	38.91562	0.00	NORMAL
6/17/2022 10:25	11.28	0.21	85.13	887.6	1060.3	6.83	35.7	54.5	18.8	50.3	9.26	7.77	7.18	39.25	38.91367	0.00	NORMAL
6/17/2022 10:26	11.11	0.30	87.55	887.5	1060.4	6.83	35.7	54.5	18.8	50.3	9.25	7.77	7.18	39.25	38.91145	0.00	NORMAL
6/17/2022 10:27	11.16	0.33	85.52	887.3	1060.2	6.83	35.8	54.5	18.7	50.3	9.25	7.78	7.18	39.25	38.91	0.00	NORMAL
6/17/2022 10:28	10.91	0.36	68.98	887.1	1059.8	6.83	35.8	54.5	18.7	50.4	9.25	7.78	7.18	39.25	38.90778	0.00	NORMAL
6/17/2022 10:29	10.77	0.18	64.47	886.9	1059.6	6.84	35.9	54.5	18.6	50.4	9.25	7.78	7.18	39.25	38.90628	0.00	NORMAL
6/17/2022 10:30	10.65	0.28	66.98	886.8	1059.3	6.84	35.9	54.5	18.6	50.4	9.24	7.78	7.18	39.24	38.90456	0.00	NORMAL
6/17/2022 10:31	10.28	0.34	60.32	886.6	1059.7	6.84	36.0	54.5	18.5	50.4	9.22	7.78	7.18	39.24	38.9035	0.00	NORMAL
6/17/2022 10:32	10.20	0.09	74.39	886.4	1060.0	6.84	36.0	54.5	18.4	50.4	9.21	7.78	7.18	39.24	38.90322	0.00	NORMAL
6/17/2022 10:33	10.24	0.33	74.61	886.2	1058.2	6.84	36.1	54.5	18.4	50.5	9.20	7.78	7.18	39.24	38.90133	0.00	NORMAL
6/17/2022 10:34	10.17	0.26	53.53	886.0	1057.0	6.84	36.1	54.5	18.4	50.5	9.20	7.77	7.18	39.24	38.89872	0.00	NORMAL
6/17/2022 10:35	10.04	0.25	62.57	885.8	1057.7	6.84	36.1	54.5	18.4	50.5	9.20	7.76	7.18	39.24	38.89672	0.00	NORMAL
6/17/2022 10:36	10.14	0.39	78.67	885.7	1056.9	6.84	36.2	54.5	18.3	50.5	9.20	7.75	7.18	39.24	38.89478	0.00	NORMAL
6/17/2022 10:37	10.56	0.44	76.24	885.5	1055.7	6.84	36.2	54.5	18.3	50.5	9.20	7.75	7.18	39.24	38.89227	0.00	NORMAL
6/17/2022 10:38	10.38	0.69	58.15	885.4	1057.1	6.84	36.3	54.5	18.2	50.6	9.18	7.76	7.18	39.24	38.89122	0.00	NORMAL
6/17/2022 10:39	9.86	0.33	69.55	885.3	1058.5	6.84	36.3	54.5	18.2	50.6	9.17	7.77	7.18	39.24	38.88944	0.00	NORMAL
6/17/2022 10:40	10.29	0.00	82.20	885.2	1056.6	6.84	36.4	54.5	18.1	50.6	9.16	7.78	7.18	39.23	38.88683	0.00	NORMAL
6/17/2022 10:41	10.44	0.18	61.20	885.1	1055.2	6.84	36.4	54.5	18.1	50.6	9.15	7.78	7.18	39.23	38.88522	0.00	NORMAL
6/17/2022 10:42	10.20	0.17	64.57	884.9	1056.8	6.84	36.4	54.5	18.1	50.6	9.14	7.78	7.18	39.23	38.88344	0.00	NORMAL
6/17/2022 10:43	9.92	0.18	88.70	884.8	1057.8	6.84	36.5	54.5	18.0	50.7	9.14	7.78	7.18	39.23	38.88182	0.00	NORMAL
6/17/2022 10:44	10.35	0.66	90.64	884.7	1057.3	6.84	36.5	54.5	18.0	50.7	9.14	7.78	7.18	39.23	38.88121	0.00	NORMAL
6/17/2022 10:45	10.42	0.94	81.50	884.6	1058.9	6.84	36.6	54.5	17.9	50.7	9.14	7.78	7.18	39.23	38.88033	0.00	NORMAL
6/17/2022 10:46	10.48	0.47	90.61	884.5	1058.9	6.84	36.6	54.5	17.9	50.7	9.14	7.77	7.18	39.23	38.87949	0.00	NORMAL
6/17/2022 10:47	10.45	0.88	66.18	884.4	1057.5	6.85	36.7	54.5	17.8	50.7	9.14	7.76	7.19	39.23	38.87838	0.00	NORMAL
6/17/2022 10:48	10.34	0.89	67.00	884.3	1058.4	6.85	36.7	54.5	17.8	50.8	9.14	7.76	7.19	39.23	38.8766	0.00	NORMAL
6/17/2022 10:49	10.35	0.46	93.91	884.2	1061.5	6.85	36.8	54.5	17.7	50.8	9.12	7.77	7.19	39.23	38.87521	0.00	NORMAL
6/17/2022 10:50	10.17	0.59	101.66	884.1	1064.1	6.85	36.9	54.5	17.7	50.8	9.11	7.78	7.18	39.23	38.8746	0.00	NORMAL
6/17/2022 10:51	10.85	0.53	120.80	884.0	1062.4	6.85	36.9	54.5	17.6	50.8	9.10	7.78	7.18	39.23	38.87383	0.00	NORMAL
6/17/2022 10:52	10.39	1.41	57.06	883.9	1062.0	6.85	36.9	54.5	17.6	50.8	9.09	7.78	7.18	39.22	38.87299	0.00	NORMAL
6/17/2022 10:53	10.13	0.54	68.75	883.8	1062.6	6.85	37.0	54.5	17.5	50.9	9.08	7.78	7.19	39.22	38.87066	0.00	NORMAL
6/17/2022 10:54	10.52	0.30	99.70	883.8	1062.8	6.85	37.0	54.5	17.5	50.9	9.08	7.78	7.19	39.22	38.86889	0.00	NORMAL
6/17/2022 10:55	10.91	0.95	122.68	883.7	1058.0	6.85	37.1	54.5	17.4	50.9	9.08	7.78	7.19	39.22	38.86777	0.00	NORMAL
6/17/2022 10:56	10.87	9.45	69.50	883.6	1060.5	6.85	37.1	54.5	17.4	50.9	9.07	7.78	7.19	39.22	38.86772	0.00	NORMAL
6/17/2022 10:57	9.94	591.81	66.33	883.6	1063.8	6.85	37.2	54.5	17.3	51.0	9.07	7.79	7.19	39.22	38.86644	0.00	NORMAL
6/17/2022 10:58	10.71	135.66	108.20	883.5	1056.9	6.85	37.2	54.5	17.3	51.0	9.07	7.79	7.19	39.22	38.8655	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/17/2022 10:59	10.76	2.69	51.48	883.4	1052.1	6.85	37.2	54.5	17.2	51.0	9.07	7.79	7.18	39.22	38.86455	0.00	NORMAL
6/17/2022 11:00	10.25	1.15	67.33	883.4	1057.1	6.85	37.3	54.5	17.2	51.0	9.07	7.78	7.19	39.22	38.86294	0.00	NORMAL
6/17/2022 11:01	10.23	1.16	118.96	883.3	1056.4	6.85	37.3	54.5	17.1	51.0	9.07	7.78	7.19	39.22	38.86144	0.00	NORMAL
6/17/2022 11:02	10.51	11.65	82.15	883.3	1052.1	6.85	37.4	54.5	17.1	51.1	9.07	7.78	7.19	39.22	38.86005	0.00	NORMAL
6/17/2022 11:03	10.33	623.75	55.32	883.3	1059.8	6.85	37.4	54.5	17.1	51.1	9.07	7.78	7.19	39.21	38.85844	0.00	NORMAL
6/17/2022 11:04	10.20	241.17	114.86	883.2	1058.4	6.85	37.5	54.5	17.0	51.1	9.07	7.78	7.19	39.21	38.85695	0.00	NORMAL
6/17/2022 11:05	10.60	5.20	65.09	883.1	1053.6	6.85	37.5	54.5	17.0	51.1	9.07	7.78	7.19	39.21	38.85528	0.00	NORMAL
6/17/2022 11:06	10.44	221.81	63.04	883.1	1057.7	6.85	37.5	54.5	17.0	51.1	9.07	7.78	7.19	39.21	38.85545	0.00	NORMAL
6/17/2022 11:07	10.74	62.32	137.01	883.0	1056.0	6.85	37.6	54.5	17.0	51.2	9.08	7.78	7.19	39.21	38.85505	0.00	NORMAL
6/17/2022 11:08	10.49	3.35	61.01	882.9	1050.2	6.85	37.6	54.5	16.9	51.2	9.08	7.78	7.19	39.21	38.85472	0.00	NORMAL
6/17/2022 11:09	10.59	1.09	62.56	882.9	1055.8	6.85	37.6	54.5	16.9	51.2	9.06	7.77	7.19	39.21	38.85461	0.00	NORMAL
6/17/2022 11:10	10.34	1.55	117.29	882.8	1056.2	6.86	37.7	54.5	16.9	51.2	9.04	7.76	7.19	39.21	38.85411	0.00	NORMAL
6/17/2022 11:11	10.61	2.33	79.11	882.7	1050.4	6.86	37.7	54.5	16.8	51.2	9.02	7.76	7.19	39.21	38.85272	0.00	NORMAL
6/17/2022 11:12	10.57	0.70	60.43	882.6	1057.2	6.86	37.7	54.5	16.8	51.2	9.00	7.76	7.19	39.20	38.85167	0.00	NORMAL
6/17/2022 11:13	10.20	0.66	117.92	882.5	1059.0	6.86	37.8	54.5	16.7	51.2	8.98	7.75	7.19	39.20	38.85072	0.00	NORMAL
6/17/2022 11:14	10.35	3.67	87.87	882.5	1054.1	6.86	37.8	54.5	16.7	51.3	8.96	7.75	7.19	39.20	38.85078	0.00	NORMAL
6/17/2022 11:15	10.29	17.39	70.26	882.5	1058.4	6.86	37.9	54.5	16.6	51.3	8.93	7.76	7.19	39.20	38.85067	0.00	NORMAL
6/17/2022 11:16	10.41	0.84	128.51	882.5	1060.0	6.86	37.9	54.5	16.6	51.3	8.91	7.77	7.19	39.20	38.85073	0.00	NORMAL
6/17/2022 11:17	10.30	0.86	83.36	882.5	1054.7	6.86	37.9	54.5	16.6	51.3	8.89	7.78	7.19	39.20	38.85151	0.00	NORMAL
6/17/2022 11:18	10.39	0.44	77.82	882.5	1057.4	6.86	38.0	54.5	16.6	51.3	8.86	7.78	7.19	39.20	38.85356	0.00	NORMAL
6/17/2022 11:19	10.27	0.51	114.89	882.6	1062.1	6.86	38.0	54.6	16.5	51.3	8.84	7.78	7.19	39.20	38.85517	0.00	NORMAL
6/17/2022 11:20	10.09	0.19	108.48	882.7	1061.6	6.86	38.1	54.6	16.5	51.4	8.82	7.78	7.19	39.20	38.85645	0.00	NORMAL
6/17/2022 11:21	11.41	2.29	150.05	882.8	1058.4	6.86	38.1	54.6	16.4	51.4	8.79	7.78	7.19	39.20	38.85678	0.00	NORMAL
6/17/2022 11:22	10.93	2.05	65.26	883.0	1058.9	6.86	38.2	54.5	16.4	51.4	8.77	7.79	7.19	39.20	38.85683	0.00	NORMAL
6/17/2022 11:23	10.34	0.62	80.15	883.1	1058.6	6.86	38.2	54.5	16.3	51.4	8.75	7.77	7.19	39.20	38.85645	0.00	NORMAL
6/17/2022 11:24	11.07	0.86	111.86	883.3	1057.8	6.86	38.3	54.5	16.2	51.4	8.72	7.76	7.19	39.21	38.85606	0.00	NORMAL
6/17/2022 11:25	11.21	0.56	110.97	883.4	1058.0	6.86	38.3	54.5	16.2	51.5	8.70	7.77	7.19	39.21	38.85689	0.00	NORMAL
6/17/2022 11:26	11.32	0.21	108.10	883.6	1067.1	6.86	38.4	54.5	16.1	51.5	8.67	7.77	7.19	39.21	38.85611	0.00	NORMAL
6/17/2022 11:27	11.10	0.41	153.64	883.8	1069.2	6.86	38.4	54.5	16.1	51.5	8.65	7.78	7.19	39.21	38.85506	0.00	NORMAL
6/17/2022 11:28	11.44	0.44	117.28	884.0	1069.9	6.86	38.5	54.5	16.1	51.5	8.62	7.78	7.19	39.21	38.85506	0.00	NORMAL
6/17/2022 11:29	11.65	0.61	113.39	884.2	1073.4	6.86	38.5	54.5	16.0	51.5	8.60	7.77	7.19	39.21	38.85367	0.00	NORMAL
6/17/2022 11:30	12.18	0.65	165.49	884.4	1070.8	6.86	38.5	54.5	16.0	51.5	8.57	7.78	7.19	39.21	38.85323	0.00	NORMAL
6/17/2022 11:31	12.09	0.74	101.12	884.6	1068.5	6.86	38.6	54.5	16.0	51.6	8.55	7.78	7.19	39.21	38.85278	0.00	NORMAL
6/17/2022 11:32	11.94	0.47	114.27	884.8	1074.0	6.86	38.6	54.5	15.9	51.6	8.52	7.79	7.19	39.21	38.85256	0.00	NORMAL
6/17/2022 11:33	11.97	0.55	150.92	885.0	1073.1	6.86	38.6	54.5	15.9	51.6	8.50	7.79	7.19	39.21	38.85268	0.00	NORMAL
6/17/2022 11:34	12.01	0.67	115.37	885.2	1069.7	6.86	38.7	54.5	15.8	51.6	8.47	7.79	7.19	39.20	38.85228	0.00	NORMAL
6/17/2022 11:35	12.22	0.29	116.49	885.4	1075.1	6.86	38.7	54.5	15.8	51.6	8.45	7.80	7.20	39.20	38.85128	0.00	NORMAL
6/17/2022 11:36	11.91	0.37	137.11	885.6	1075.3	6.86	38.8	54.5	15.8	51.7	8.42	7.81	7.20	39.20	38.85006	0.00	NORMAL
6/17/2022 11:37	12.28	0.70	126.27	885.8	1070.2	6.86	38.8	54.5	15.7	51.7	8.39	7.82	7.20	39.20	38.84884	0.00	NORMAL
6/17/2022 11:38	12.10	0.34	96.95	886.0	1072.2	6.86	38.9	54.5	15.7	51.7	8.37	7.82	7.21	39.20	38.84778	0.00	NORMAL
6/17/2022 11:39	12.25	7.77	77.90	886.2	1068.7	6.86	38.9	54.5	15.7	51.7	8.34	7.82	7.21	39.20	38.84589	0.00	NORMAL
6/17/2022 11:40	12.09	8.71	50.46	886.4	1065.4	6.86	38.9	54.5	15.6	51.7	8.32	7.83	7.22	39.20	38.84595	0.00	NORMAL
6/17/2022 11:41	12.18	2.86	58.95	886.6	1064.9	6.86	38.9	54.5	15.6	51.7	8.30	7.84	7.22	39.20	38.84572	0.00	NORMAL
6/17/2022 11:42	12.49	10.42	84.35	886.8	1062.7	6.86	39.0	54.5	15.6	51.8	8.27	7.85	7.23	39.20	38.84578	0.00	NORMAL
6/17/2022 11:43	11.53	2.93	45.72	887.0	1063.1	6.86	39.0	54.5	15.5	51.8	8.25	7.85	7.24	39.20	38.84583	0.00	NORMAL
6/17/2022 11:44	12.30	4.53	77.36	887.2	1064.3	6.86	39.0	54.5	15.5	51.8	8.22	7.86	7.24	39.20	38.84695	0.00	NORMAL
6/17/2022 11:45	12.04	7.48	63.25	887.4	1062.0	6.86	39.1	54.5	15.4	51.8	8.20	7.87	7.24	39.20	38.8475	0.00	NORMAL
6/17/2022 11:46	11.57	3.47	44.18	887.5	1063.7	6.86	39.1	54.5	15.4	51.8	8.17	7.88	7.25	39.20	38.84778	0.00	NORMAL
6/17/2022 11:47	12.21	6.93	79.40	887.7	1063.6	6.86	39.1	54.5	15.4	51.8	8.15	7.89	7.25	39.20	38.84761	0.00	NORMAL
6/17/2022 11:48	11.57	5.18	44.47	887.9	1060.6	6.86	39.1	54.5	15.4	51.9	8.13	7.90	7.26	39.20	38.84739	0.00	NORMAL
6/17/2022 11:49	11.91	1.19	42.86	888.0	1063.3	6.86	39.2	54.5	15.4	51.9	8.10	7.90	7.27	39.20	38.84806	0.00	NORMAL
6/17/2022 11:50	12.16	10.28	70.69	888.2	1061.1	6.86	39.2	54.5	15.4	51.9	8.08	7.91	7.27	39.19	38.84806	0.00	NORMAL
6/17/2022 11:51	11.59	4.14	35.26	888.3	1059.0	6.86	39.2	54.5	15.3	51.9	8.05	7.92	7.28	39.19	38.84855	0.00	NORMAL
6/17/2022 11:52	11.96	1.06	44.12	888.5	1063.9	6.86	39.2	54.5	15.3	51.9	8.03	7.93	7.29	39.19	38.84855	0.00	NORMAL
6/17/2022 11:53	11.99	7.62	78.40	888.6	1061.8	6.86	39.2	54.5	15.3	51.9	8.01	7.94	7.29	39.19	38.84889	0.00	NORMAL
6/17/2022 11:54	11.74	4.42	38.92	888.8	1061.9	6.86	39.3	54.5	15.3	51.9	7.98	7.94	7.30	39.19	38.84739	0.00	NORMAL
6/17/2022 11:55	12.07	1.68	50.12	889.0	1066.2	6.86	39.3	54.5	15.2	51.9	7.96	7.95	7.30	39.19	38.84727	0.00	NORMAL
6/17/2022 11:56	12.05	14.70	59.33	889.2	1062.5	6.86	39.3	54.5	15.2	51.9	7.94	7.96	7.31	39.19	38.84822	0.00	NORMAL
6/17/2022 11:57	11.92	3.87	30.61	889.4	1061.8	6.86	39.3	54.5	15.2	52.0	7.91	7.97	7.31	39.19	38.84811	0.00	NORMAL
6/17/2022 11:58	12.03	0.92	41.70	889.7	1066.5	6.86	39.3	54.5	15.2	52.0	7.89	7.99	7.32	39.19	38.84794	0.00	NORMAL
6/17/2022 11:59	11.93	5.79	61.78	889.9	1062.5	6.86	39.4	54.5	15.2	52.0	7.87	7.99	7.33	39.19	38.848	0.00	NORMAL
6/17/2022 12:00	11.87	4.13	32.89	890.2	1063.0	6.86	39.4	54.5	15.2	52.0	7.84	7.99	7.34	39.19	38.84761	0.00	NORMAL
6/17/2022 12:01	11.71	1.41	41.13	890.5	1067.6	6.86	39.4	54.5	15.1	52.0	7.82	8.00	7.34	39.18	38.84683	0.00	NORMAL
6/17/2022 12:02	11.69	16.15	56.62	890.8	1063.0	6.86	39.5	54.5	15.1	52.0	7.80	8.01	7.35	39.18	38.84528	0.00	NORMAL
6/17/2022 12:03	11.69	5.03	29.76	891.1	1061.7	6.85	39.5	54.5	15.0	52.0	7.78	8.03	7.35	39.18	38.84478	0.00	NORMAL
6/17/2022 12:04	11.54	1.22	37.80	891.4	1066.4	6.85	39.5	54.5	15.0	52.0	7.76	8.04	7.36	39.18	38.84333	0.00	NORMAL
6/17/2022 12:05	11.61	13.57	69.18	891.7	1062.5	6.85	39.5	54.5	15.0	52.0	7.74	8.04	7.36	39.18	38.84189	0.00	NORMAL
6/17/2022 12:06	11.84	13.33	39.33	892.0	1061.5	6.85	39.5	54.5	15.0	52.1	7.73	8.04	7.37	39.17	38.8415	0.00	NORMAL
6/17/2022 12:07	11.69	1.84	40.67	892.3	1068.1	6.85	39.6	54.5	14.9	52.1	7.71	8.05	7.38	39.17	38.84066	0.00	NORMAL
6/17/2022 12:08	11.50	3.05	64.40	892.6	1066.4	6.85	39.6	54.5	14.9	52.1	7.69	8.06	7.39	39.17	38.83966	0.00	NORMAL
6/17/2022 12:09	12.11	11.11	46.43	892.9	1063.7	6.85	39.6	54.5	14.9	52.1	7.68	8.08	7.39	39.17	38.83805	0.00	NORMAL
6/17/2022 12:10	12.03	2.42	38.40	893.2	1067.5	6.85	39.6	54.5	14.9	52.1	7.66	8.09	7.39	39.17	38.83788	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/17/2022 12:11	12.02	13.95	72.26	893.5	1062.9	6.85	39.6	54.5	14.9	52.1	7.64	8.08	7.40	39.17	38.83766	0.00	NORMAL
6/17/2022 12:12	12.08	10.12	38.98	893.8	1059.1	6.85	39.6	54.5	14.9	52.1	7.63	8.09	7.40	39.17	38.83733	0.00	NORMAL
6/17/2022 12:13	12.15	1.92	39.31	894.0	1060.2	6.85	39.7	54.5	14.8	52.1	7.62	8.10	7.41	39.17	38.83783	0.00	NORMAL
6/17/2022 12:14	12.32	14.65	66.11	894.3	1056.5	6.85	39.7	54.5	14.8	52.1	7.60	8.11	7.42	39.17	38.83794	0.00	NORMAL
6/17/2022 12:15	11.71	4.20	39.57	894.6	1056.5	6.85	39.7	54.5	14.8	52.1	7.59	8.12	7.42	39.17	38.83771	0.00	NORMAL
6/17/2022 12:16	12.14	3.39	50.32	894.9	1060.1	6.85	39.7	54.5	14.8	52.1	7.57	8.12	7.43	39.16	38.83793	0.00	NORMAL
6/17/2022 12:17	11.98	7.43	61.29	895.1	1057.6	6.85	39.7	54.5	14.8	52.2	7.56	8.12	7.43	39.16	38.83732	0.00	NORMAL
6/17/2022 12:18	11.76	3.33	34.93	895.4	1058.5	6.85	39.7	54.5	14.8	52.2	7.55	8.12	7.44	39.16	38.83838	0.00	NORMAL
6/17/2022 12:19	12.03	1.03	46.42	895.7	1064.8	6.85	39.8	54.5	14.8	52.2	7.54	8.13	7.44	39.16	38.8381	0.00	NORMAL
6/17/2022 12:20	11.77	3.63	58.24	896.0	1062.4	6.85	39.8	54.6	14.8	52.2	7.53	8.14	7.45	39.16	38.83765	0.00	NORMAL
6/17/2022 12:21	12.18	6.92	48.73	896.2	1063.4	6.85	39.8	54.6	14.8	52.2	7.52	8.15	7.45	39.16	38.83749	0.00	NORMAL
6/17/2022 12:22	11.79	1.47	46.93	896.5	1068.8	6.85	39.9	54.6	14.7	52.2	7.51	8.15	7.46	39.16	38.83727	0.00	NORMAL
6/17/2022 12:23	11.97	6.58	78.59	896.8	1064.2	6.85	39.9	54.6	14.7	52.2	7.50	8.14	7.46	39.16	38.83704	0.00	NORMAL
6/17/2022 12:24	12.26	7.33	39.74	897.0	1061.2	6.85	39.9	54.5	14.6	52.2	7.49	8.15	7.46	39.16	38.83671	0.00	NORMAL
6/17/2022 12:25	11.93	1.67	41.09	897.3	1064.3	6.85	39.9	54.5	14.6	52.2	7.48	8.15	7.46	39.16	38.83671	0.00	NORMAL
6/17/2022 12:26	12.13	6.47	69.72	897.5	1061.4	6.85	40.0	54.5	14.5	52.2	7.47	8.16	7.47	39.16	38.83532	0.00	NORMAL
6/17/2022 12:27	11.77	5.21	44.67	897.7	1061.5	6.85	40.0	54.5	14.5	52.2	7.46	8.16	7.47	39.16	38.83437	0.00	NORMAL
6/17/2022 12:28	12.15	3.39	58.84	897.9	1065.8	6.86	40.0	54.5	14.5	52.3	7.45	8.17	7.47	39.16	38.83437	0.00	NORMAL
6/17/2022 12:29	11.99	7.67	60.93	898.1	1064.9	6.86	40.1	54.5	14.5	52.3	7.44	8.18	7.47	39.16	38.83321	0.00	NORMAL
6/17/2022 12:30	11.54	3.70	37.24	898.4	1066.0	6.86	40.1	54.5	14.5	52.3	7.43	8.17	7.47	39.16	38.83326	0.00	NORMAL
6/17/2022 12:31	12.20	5.95	65.50	898.6	1067.5	6.86	40.1	54.6	14.5	52.3	7.42	8.17	7.48	39.16	38.83471	0.00	NORMAL
6/17/2022 12:32	11.87	12.53	48.77	898.9	1064.5	6.86	40.1	54.6	14.4	52.3	7.42	8.17	7.48	39.16	38.83432	0.00	NORMAL
6/17/2022 12:33	11.78	2.90	39.63	899.2	1067.1	6.86	40.2	54.6	14.4	52.3	7.41	8.18	7.48	39.16	38.83471	0.00	NORMAL
6/17/2022 12:34	11.98	2.85	72.65	899.4	1068.6	6.86	40.2	54.6	14.3	52.3	7.40	8.18	7.48	39.15	38.83426	0.00	NORMAL
6/17/2022 12:35	11.64	3.00	60.07	899.7	1066.6	6.86	40.3	54.6	14.3	52.3	7.39	8.19	7.48	39.15	38.83382	0.00	NORMAL
6/17/2022 12:36	12.04	1.20	61.04	900.0	1070.2	6.86	40.3	54.5	14.2	52.4	7.39	8.19	7.48	39.15	38.83254	0.00	NORMAL
6/17/2022 12:37	12.04	4.91	68.78	900.4	1069.5	6.86	40.4	54.5	14.1	52.4	7.38	8.20	7.48	39.15	38.83171	0.00	NORMAL
6/17/2022 12:38	11.47	6.17	41.96	900.7	1068.7	6.86	40.4	54.5	14.1	52.4	7.38	8.21	7.48	39.15	38.83087	0.00	NORMAL
6/17/2022 12:39	12.19	5.09	67.61	901.0	1069.4	6.86	40.5	54.5	14.0	52.4	7.37	8.22	7.48	39.15	38.82915	0.00	NORMAL
6/17/2022 12:40	12.38	13.54	76.59	901.3	1066.0	6.86	40.5	54.5	14.0	52.4	7.37	8.21	7.49	39.15	38.82854	0.00	NORMAL
6/17/2022 12:41	11.85	3.86	47.00	901.5	1066.2	6.86	40.5	54.5	14.0	52.4	7.37	8.21	7.48	39.15	38.82782	0.00	NORMAL
6/17/2022 12:42	12.29	3.12	87.32	901.7	1067.0	6.86	40.6	54.5	14.0	52.4	7.36	8.21	7.48	39.15	38.82676	0.00	NORMAL
6/17/2022 12:43	12.12	10.86	83.75	902.0	1063.8	6.86	40.6	54.6	14.0	52.5	7.36	8.21	7.48	39.15	38.82537	0.00	NORMAL
6/17/2022 12:44	11.99	2.89	55.40	902.2	1067.3	6.86	40.6	54.6	14.0	52.5	7.36	8.22	7.48	39.15	38.82515	0.00	NORMAL
6/17/2022 12:45	12.25	3.09	96.83	902.3	1068.1	6.86	40.7	54.6	13.9	52.5	7.36	8.22	7.48	39.15	38.82437	0.00	NORMAL
6/17/2022 12:46	11.99	4.74	61.47	902.5	1064.5	6.86	40.7	54.6	13.9	52.5	7.36	8.23	7.49	39.15	38.82315	0.00	NORMAL
6/17/2022 12:47	12.06	1.70	44.70	902.6	1067.8	6.86	40.7	54.6	13.8	52.5	7.36	8.24	7.49	39.15	38.8222	0.00	NORMAL
6/17/2022 12:48	12.15	3.82	75.06	902.7	1066.8	6.86	40.7	54.5	13.8	52.5	7.36	8.24	7.49	39.14	38.82132	0.00	NORMAL
6/17/2022 12:49	11.76	7.24	55.65	902.8	1064.9	6.86	40.8	54.5	13.8	52.5	7.36	8.23	7.48	39.14	38.82032	0.00	NORMAL
6/17/2022 12:50	12.24	13.87	57.27	903.0	1068.8	6.86	40.8	54.5	13.7	52.6	7.36	8.23	7.48	39.14	38.81865	0.00	NORMAL
6/17/2022 12:51	12.18	6.05	64.33	903.1	1068.1	6.86	40.8	54.5	13.7	52.6	7.36	8.23	7.48	39.14	38.81804	0.00	NORMAL
6/17/2022 12:52	11.55	2.91	42.91	903.2	1067.7	6.86	40.9	54.5	13.7	52.6	7.36	8.23	7.48	39.14	38.81832	0.00	NORMAL
6/17/2022 12:53	12.34	3.32	67.11	903.3	1068.2	6.86	40.9	54.6	13.7	52.6	7.36	8.24	7.48	39.14	38.8191	0.00	NORMAL
6/17/2022 12:54	12.14	6.20	57.32	903.4	1065.2	6.86	40.9	54.6	13.7	52.6	7.36	8.24	7.48	39.14	38.82027	0.00	NORMAL
6/17/2022 12:55	11.83	2.09	50.79	903.6	1066.2	6.86	40.9	54.6	13.6	52.6	7.36	8.25	7.48	39.14	38.82132	0.00	NORMAL
6/17/2022 12:56	12.33	4.00	90.55	903.7	1066.2	6.86	41.0	54.6	13.6	52.6	7.37	8.26	7.48	39.15	38.82221	0.00	NORMAL
6/17/2022 12:57	11.87	41.27	52.11	903.9	1064.7	6.86	41.0	54.6	13.5	52.7	7.37	8.26	7.48	39.15	38.82299	0.00	NORMAL
6/17/2022 12:58	12.01	489.81	57.14	904.0	1067.5	6.86	41.1	54.6	13.5	52.7	7.37	8.26	7.48	39.15	38.8251	0.00	NORMAL
6/17/2022 12:59	12.28	46.58	86.93	904.1	1064.9	6.86	41.1	54.5	13.5	52.7	7.37	8.25	7.48	39.15	38.82494	0.00	NORMAL
6/17/2022 13:00	11.78	7.28	46.18	904.2	1062.9	6.87	41.1	54.5	13.4	52.7	7.38	8.25	7.48	39.15	38.82616	0.00	NORMAL
6/17/2022 13:01	12.28	2.70	59.51	904.3	1065.1	6.87	41.1	54.5	13.4	52.7	7.38	8.25	7.48	39.15	38.82671	0.00	NORMAL
6/17/2022 13:02	12.29	9.16	72.31	904.4	1062.0	6.87	41.2	54.5	13.3	52.7	7.39	8.26	7.48	39.15	38.82666	0.00	NORMAL
6/17/2022 13:03	11.90	3.43	41.97	904.5	1062.5	6.87	41.2	54.5	13.3	52.7	7.39	8.26	7.48	39.15	38.82644	0.00	NORMAL
6/17/2022 13:04	12.54	5.17	66.00	904.7	1065.0	6.87	41.3	54.5	13.3	52.7	7.40	8.27	7.48	39.15	38.82483	0.00	NORMAL
6/17/2022 13:05	12.21	16.71	50.12	904.8	1061.6	6.87	41.3	54.6	13.3	52.8	7.40	8.28	7.48	39.15	38.82433	0.00	NORMAL
6/17/2022 13:06	12.08	2.95	40.53	905.0	1062.8	6.87	41.3	54.6	13.3	52.8	7.41	8.27	7.47	39.15	38.82483	0.00	NORMAL
6/17/2022 13:07	12.34	3.53	57.72	905.2	1064.1	6.87	41.3	54.6	13.3	52.8	7.42	8.26	7.47	39.15	38.82588	0.00	NORMAL
6/17/2022 13:08	12.20	18.48	44.81	905.3	1059.9	6.87	41.3	54.5	13.2	52.8	7.42	8.26	7.47	39.15	38.82627	0.00	NORMAL
6/17/2022 13:09	12.13	3.23	39.45	905.5	1063.1	6.87	41.3	54.5	13.2	52.8	7.43	8.27	7.47	39.15	38.82577	0.00	NORMAL
6/17/2022 13:10	12.27	7.35	65.02	905.7	1062.7	6.87	41.3	54.5	13.2	52.8	7.44	8.27	7.47	39.15	38.82644	0.00	NORMAL
6/17/2022 13:11	12.06	13.66	37.48	905.9	1058.4	6.87	41.3	54.5	13.2	52.8	7.45	8.28	7.47	39.15	38.82688	0.00	NORMAL
6/17/2022 13:12	12.12	2.17	36.68	906.1	1060.9	6.87	41.3	54.5	13.2	52.8	7.45	8.28	7.47	39.15	38.82727	0.00	NORMAL
6/17/2022 13:13	11.89	1.48	44.37	906.3	1065.0	6.86	41.2	54.5	13.2	52.8	7.46	8.29	7.47	39.15	38.82772	0.00	NORMAL
6/17/2022 13:14	11.99	9.48	51.76	906.4	1060.3	6.86	41.2	54.5	13.3	52.8	7.47	8.29	7.47	39.15	38.82877	0.00	NORMAL
6/17/2022 13:15	12.38	16.90	32.90	906.6	1062.1	6.86	41.2	54.5	13.3	52.8	7.48	8.30	7.47	39.15	38.82955	0.00	NORMAL
6/17/2022 13:16	11.55	2.52	39.71	906.8	1066.6	6.86	41.2	54.5	13.3	52.8	7.48	8.29	7.47	39.15	38.82994	0.00	NORMAL
6/17/2022 13:17	11.89	7.97	60.99	907.0	1062.7	6.86	41.1	54.5	13.4	52.8	7.49	8.28	7.47	39.15	38.83005	0.00	NORMAL
6/17/2022 13:18	12.32	14.92	38.76	907.2	1059.3	6.86	41.1	54.5	13.4	52.8	7.50	8.28	7.47	39.15	38.8305	0.00	NORMAL
6/17/2022 13:19	11.93	2.24	37.43	907.5	1064.1	6.86	41.1	54.6	13.5	52.8	7.51	8.28	7.46	39.15	38.8301	0.00	NORMAL
6/17/2022 13:20	11.77	3.00	51.72	907.7	1063.9	6.86	41.1	54.6	13.5	52.8	7.52	8.29	7.46	39.15	38.83083	0.00	NORMAL
6/17/2022 13:21	12.19	18.46	42.54	908.0	1059.4	6.86	41.1	54.6	13.5	52.8	7.53	8.29	7.46	39.15	38.83183	0.00	NORMAL
6/17/2022 13:22	11.92	4.07	33.31	908.3	1063.8	6.86	41.0	54.5	13.5	52.8	7.53	8.30	7.46	39.15	38.83289	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/17/2022 13:23	11.94	6.71	55.12	908.6	1062.9	6.86	41.0	54.5	13.5	52.8	7.54	8.30	7.46	39.15	38.83361	0.00	NORMAL
6/17/2022 13:24	12.20	25.13	36.66	908.8	1057.7	6.86	41.0	54.5	13.5	52.7	7.55	8.31	7.46	39.15	38.83355	0.00	NORMAL
6/17/2022 13:25	12.10	3.50	30.49	909.0	1059.8	6.86	40.9	54.5	13.5	52.7	7.56	8.31	7.46	39.15	38.83494	0.00	NORMAL
6/17/2022 13:26	11.94	1.62	40.09	909.3	1064.2	6.86	40.9	54.5	13.5	52.7	7.57	8.31	7.46	39.15	38.83516	0.00	NORMAL
6/17/2022 13:27	11.69	1.45	38.69	909.5	1063.4	6.86	40.9	54.5	13.6	52.7	7.58	8.30	7.46	39.15	38.83527	0.00	NORMAL
6/17/2022 13:28	12.80	21.95	47.19	909.8	1062.3	6.86	40.9	54.5	13.6	52.7	7.58	8.30	7.46	39.15	38.83622	0.00	NORMAL
6/17/2022 13:29	11.87	7.40	29.18	910.0	1065.7	6.86	40.9	54.5	13.6	52.7	7.59	8.30	7.46	39.15	38.83699	0.00	NORMAL
6/17/2022 13:30	11.45	1.32	38.30	910.3	1066.7	6.86	40.9	54.6	13.6	52.7	7.60	8.30	7.46	39.15	38.83733	0.00	NORMAL
6/17/2022 13:31	12.19	6.96	51.24	910.5	1062.1	6.86	40.9	54.6	13.7	52.7	7.61	8.31	7.46	39.15	38.83733	0.00	NORMAL
6/17/2022 13:32	12.24	13.14	37.14	910.7	1059.0	6.86	40.9	54.6	13.7	52.7	7.62	8.31	7.46	39.15	38.8376	0.00	NORMAL
6/17/2022 13:33	11.93	1.93	33.03	911.0	1063.4	6.86	40.9	54.6	13.7	52.7	7.62	8.32	7.46	39.15	38.83933	0.00	NORMAL
6/17/2022 13:34	11.56	1.68	38.73	911.1	1064.7	6.85	40.9	54.5	13.7	52.6	7.63	8.32	7.46	39.15	38.84066	0.00	NORMAL
6/17/2022 13:35	12.05	0.99	36.79	911.3	1064.8	6.85	40.9	54.5	13.6	52.6	7.64	8.32	7.46	39.15	38.84222	0.00	NORMAL
6/17/2022 13:36	12.55	5.84	45.85	911.5	1064.9	6.85	40.8	54.5	13.6	52.6	7.65	8.33	7.46	39.15	38.84355	0.00	NORMAL
6/17/2022 13:37	12.39	27.46	30.78	911.7	1063.8	6.85	40.8	54.5	13.6	52.6	7.66	8.34	7.46	39.15	38.84467	0.00	NORMAL
6/17/2022 13:38	11.86	3.01	28.24	911.9	1063.3	6.85	40.8	54.4	13.6	52.6	7.66	8.33	7.46	39.15	38.84478	0.00	NORMAL
6/17/2022 13:39	12.23	1.63	36.95	912.1	1063.5	6.85	40.8	54.5	13.6	52.6	7.67	8.32	7.46	39.15	38.84494	0.00	NORMAL
6/17/2022 13:40	12.00	1.76	39.89	912.3	1061.7	6.85	40.8	54.5	13.7	52.6	7.68	8.32	7.45	39.15	38.84572	0.00	NORMAL
6/17/2022 13:41	12.74	41.83	62.20	912.5	1058.4	6.85	40.8	54.5	13.7	52.6	7.69	8.32	7.45	39.15	38.84589	0.00	NORMAL
6/17/2022 13:42	12.14	13.78	28.31	912.7	1058.4	6.85	40.8	54.5	13.7	52.6	7.69	8.32	7.45	39.15	38.84589	0.00	NORMAL
6/17/2022 13:43	11.69	1.29	31.59	912.9	1057.8	6.85	40.8	54.6	13.8	52.6	7.70	8.33	7.45	39.15	38.84639	0.00	NORMAL
6/17/2022 13:44	12.17	0.46	38.45	913.1	1056.7	6.85	40.7	54.6	13.8	52.6	7.71	8.33	7.45	39.15	38.84639	0.00	NORMAL
6/17/2022 13:45	12.16	1.16	37.05	913.3	1057.4	6.85	40.7	54.5	13.8	52.6	7.72	8.33	7.45	39.15	38.84661	0.00	NORMAL
6/17/2022 13:46	12.08	1.08	36.66	913.5	1064.6	6.85	40.7	54.5	13.8	52.5	7.73	8.34	7.45	39.15	38.84678	0.00	NORMAL
6/17/2022 13:47	12.03	25.58	68.89	913.7	1062.0	6.85	40.7	54.5	13.8	52.5	7.73	8.34	7.45	39.15	38.84634	0.00	NORMAL
6/17/2022 13:48	12.13	16.45	37.14	913.8	1058.9	6.85	40.7	54.5	13.8	52.5	7.74	8.35	7.45	39.15	38.8475	0.00	NORMAL
6/17/2022 13:49	12.08	1.61	40.80	914.0	1058.9	6.85	40.7	54.5	13.8	52.5	7.75	8.33	7.45	39.15	38.84789	0.00	NORMAL
6/17/2022 13:50	11.94	0.74	50.40	914.2	1059.8	6.85	40.6	54.5	13.8	52.5	7.76	8.33	7.45	39.15	38.84856	0.00	NORMAL
6/17/2022 13:51	12.21	11.06	72.05	914.4	1056.3	6.85	40.6	54.5	13.9	52.5	7.77	8.33	7.45	39.14	38.84917	0.00	NORMAL
6/17/2022 13:52	12.27	14.71	46.18	914.5	1061.6	6.85	40.6	54.5	13.9	52.5	7.78	8.33	7.45	39.15	38.84972	0.00	NORMAL
6/17/2022 13:53	11.33	2.08	47.46	914.7	1066.3	6.85	40.6	54.5	13.9	52.5	7.79	8.33	7.45	39.15	38.85061	0.00	NORMAL
6/17/2022 13:54	12.06	30.81	66.18	914.9	1062.2	6.85	40.5	54.5	14.0	52.5	7.80	8.33	7.45	39.15	38.85144	0.00	NORMAL
6/17/2022 13:55	12.17	20.20	35.47	915.1	1059.5	6.85	40.5	54.5	14.0	52.4	7.80	8.34	7.44	39.15	38.85211	0.00	NORMAL
6/17/2022 13:56	12.01	2.01	40.50	915.3	1064.1	6.85	40.5	54.5	14.0	52.4	7.81	8.34	7.44	39.15	38.85183	0.00	NORMAL
6/17/2022 13:57	11.99	5.03	52.78	915.5	1062.3	6.85	40.5	54.5	14.1	52.4	7.82	8.34	7.44	39.15	38.85122	0.00	NORMAL
6/17/2022 13:58	12.38	26.70	45.74	915.7	1057.9	6.85	40.5	54.5	14.1	52.4	7.83	8.33	7.45	39.15	38.85183	0.00	NORMAL
6/17/2022 13:59	12.20	3.35	34.32	915.8	1062.3	6.85	40.5	54.5	14.1	52.4	7.84	8.32	7.45	39.15	38.85239	0.00	NORMAL
6/17/2022 14:00	11.71	1.29	42.14	916.0	1064.4	6.85	40.5	54.5	14.1	52.4	7.85	8.32	7.44	39.15	38.85284	0.00	NORMAL
6/17/2022 14:01	12.01	1.15	39.62	916.2	1063.7	6.85	40.5	54.5	14.1	52.4	7.86	8.32	7.44	39.14	38.85239	0.00	NORMAL
6/17/2022 14:02	12.31	1.27	39.48	916.3	1066.9	6.85	40.5	54.5	14.0	52.4	7.87	8.33	7.44	39.14	38.85283	0.00	NORMAL
6/17/2022 14:03	12.06	1.27	38.88	916.5	1070.8	6.84	40.5	54.5	14.1	52.4	7.88	8.33	7.44	39.14	38.85311	0.00	NORMAL
6/17/2022 14:04	11.86	1.04	39.60	916.6	1071.2	6.84	40.4	54.5	14.1	52.3	7.88	8.33	7.44	39.14	38.85361	0.00	NORMAL
6/17/2022 14:05	12.34	1.03	42.02	916.8	1071.4	6.84	40.5	54.5	14.1	52.3	7.89	8.34	7.44	39.14	38.85433	0.00	NORMAL
6/17/2022 14:06	12.28	1.13	40.66	916.9	1071.7	6.84	40.5	54.5	14.1	52.3	7.90	8.33	7.44	39.14	38.85327	0.00	NORMAL
6/17/2022 14:07	12.30	1.05	39.51	917.1	1071.9	6.84	40.5	54.5	14.1	52.3	7.91	8.32	7.44	39.14	38.85255	0.00	NORMAL
6/17/2022 14:08	12.31	1.52	38.64	917.3	1071.9	6.84	40.5	54.5	14.0	52.3	7.92	8.31	7.44	39.14	38.85266	0.00	NORMAL
6/17/2022 14:09	12.36	1.31	38.65	917.4	1070.9	6.84	40.5	54.5	14.1	52.3	7.93	8.31	7.44	39.14	38.8521	0.00	NORMAL
6/17/2022 14:10	12.38	1.88	37.43	917.6	1069.0	6.84	40.5	54.5	14.1	52.3	7.94	8.32	7.44	39.14	38.85205	0.00	NORMAL
6/17/2022 14:11	12.40	1.16	38.02	917.9	1066.9	6.84	40.5	54.5	14.0	52.3	7.95	8.32	7.44	39.14	38.85227	0.00	NORMAL
6/17/2022 14:12	12.49	1.33	39.55	918.1	1064.9	6.84	40.5	54.5	14.0	52.3	7.95	8.32	7.44	39.14	38.85216	0.00	NORMAL
6/17/2022 14:13	12.56	2.07	37.92	918.2	1062.7	6.83	40.5	54.5	14.0	52.3	7.96	8.33	7.44	39.14	38.85244	0.00	NORMAL
6/17/2022 14:14	12.60	2.29	36.01	918.4	1060.9	6.83	40.5	54.5	14.0	52.3	7.97	8.33	7.44	39.14	38.85288	0.00	NORMAL
6/17/2022 14:15	12.59	2.24	34.81	918.6	1059.6	6.83	40.4	54.5	14.1	52.3	7.98	8.32	7.43	39.14	38.85299	0.00	NORMAL
6/17/2022 14:16	12.29	1.65	32.84	918.8	1060.5	6.83	40.4	54.5	14.1	52.3	7.99	8.31	7.44	39.14	38.85338	0.00	NORMAL
6/17/2022 14:17	12.32	1.90	43.38	918.9	1061.7	6.83	40.4	54.5	14.1	52.3	8.00	8.30	7.44	39.14	38.85299	0.00	NORMAL
6/17/2022 14:18	12.32	2.41	38.30	919.1	1062.5	6.83	40.4	54.5	14.1	52.3	8.01	8.30	7.44	39.14	38.85266	0.00	NORMAL
6/17/2022 14:19	12.32	2.55	37.46	919.2	1062.9	6.83	40.4	54.5	14.1	52.2	8.02	8.31	7.44	39.14	38.85126	0.00	NORMAL
6/17/2022 14:20	12.28	1.29	36.79	919.2	1063.3	6.83	40.4	54.5	14.1	52.2	8.02	8.31	7.44	39.14	38.84993	0.00	NORMAL
6/17/2022 14:21	12.20	1.56	36.86	919.3	1062.7	6.83	40.4	54.5	14.1	52.2	8.03	8.31	7.44	39.14	38.84966	0.00	NORMAL
6/17/2022 14:22	12.22	1.08	38.36	919.4	1064.1	6.82	40.4	54.5	14.1	52.2	8.04	8.31	7.43	39.14	38.85032	0.00	NORMAL
6/17/2022 14:23	12.18	1.04	44.54	919.4	1066.7	6.82	40.4	54.5	14.1	52.2	8.05	8.31	7.43	39.13	38.85121	0.00	NORMAL
6/17/2022 14:24	12.05	1.65	41.05	919.5	1069.5	6.82	40.4	54.5	14.1	52.2	8.06	8.31	7.43	39.13	38.85216	0.00	NORMAL
6/17/2022 14:25	12.41	20.33	54.17	919.5	1067.0	6.82	40.4	54.5	14.1	52.2	8.07	8.31	7.43	39.13	38.85226	0.00	NORMAL
6/17/2022 14:26	12.12	24.22	31.00	919.6	1066.1	6.82	40.3	54.5	14.1	52.2	8.08	8.30	7.44	39.13	38.85349	0.00	NORMAL
6/17/2022 14:27	11.75	2.41	40.17	919.6	1065.9	6.82	40.3	54.5	14.1	52.2	8.09	8.30	7.44	39.13	38.85527	0.00	NORMAL
6/17/2022 14:28	12.22	11.62	56.88	919.6	1061.3	6.82	40.3	54.5	14.1	52.2	8.10	8.29	7.44	39.13	38.85638	0.00	NORMAL
6/17/2022 14:29	12.04	7.92	46.26	919.6	1059.5	6.82	40.3	54.5	14.2	52.2	8.11	8.28	7.43	39.13	38.85782	0.00	NORMAL
6/17/2022 14:30	11.87	1.38	44.92	919.6	1065.3	6.82	40.3	54.5	14.2	52.2	8.12	8.28	7.43	39.13	38.85899	0.00	NORMAL
6/17/2022 14:31	11.68	8.39	60.55	919.6	1064.1	6.81	40.3	54.5	14.2	52.1	8.13	8.27	7.43	39.13	38.8591	0.00	NORMAL
6/17/2022 14:32	12.01	26.66	46.27	919.6	1060.6	6.81	40.3	54.5	14.3	52.1	8.14	8.26	7.43	39.13	38.85938	0.00	NORMAL
6/17/2022 14:33	11.96	3.14	44.92	919.5	1065.0	6.81	40.3	54.5	14.3	52.1	8.14	8.25	7.43	39.13	38.85893	0.00	NORMAL
6/17/2022 14:34	11.73	2.07	53.40	919.5	1065.2	6.81	40.3	54.5	14.3	52.1	8.15	8.24	7.43	39.13	38.85904	0.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/17/2022 14:35	12.33	25.57	67.20	919.5	1059.4	6.81	40.2	54.5	14.3	52.1	8.16	8.24	7.43	39.13	38.85904	0.00	NORMAL
6/17/2022 14:36	12.10	8.32	38.84	919.4	1061.4	6.81	40.2	54.5	14.3	52.1	8.17	8.22	7.42	39.13	38.85882	0.00	NORMAL
6/17/2022 14:37	11.79	1.55	48.28	919.4	1064.1	6.81	40.2	54.5	14.3	52.1	8.18	8.21	7.42	39.14	38.85976	0.00	NORMAL
6/17/2022 14:38	11.76	1.29	43.93	919.3	1063.1	6.81	40.2	54.5	14.3	52.1	8.19	8.20	7.41	39.13	38.86049	0.00	NORMAL
6/17/2022 14:39	12.20	1.59	42.87	919.3	1064.7	6.81	40.2	54.5	14.3	52.1	8.20	8.19	7.41	39.14	38.86293	0.00	NORMAL
6/17/2022 14:40	12.00	0.91	42.73	919.2	1070.0	6.80	40.2	54.5	14.3	52.0	8.21	8.18	7.40	39.14	38.86427	0.00	NORMAL
6/17/2022 14:41	12.12	26.19	73.37	919.2	1064.9	6.80	40.2	54.5	14.4	52.0	8.22	8.17	7.40	39.14	38.86483	0.00	NORMAL
6/17/2022 14:42	12.53	26.63	35.69	919.2	1060.1	6.80	40.2	54.5	14.4	52.0	8.23	8.16	7.39	39.14	38.86522	0.00	NORMAL
6/17/2022 14:43	12.18	1.97	36.68	919.2	1058.3	6.80	40.1	54.6	14.4	52.0	8.24	8.14	7.39	39.14	38.86605	0.00	NORMAL
6/17/2022 14:44	12.18	1.17	43.35	919.1	1056.6	6.80	40.1	54.5	14.4	52.0	8.25	8.13	7.38	39.14	38.86666	0.00	NORMAL
6/17/2022 14:45	12.10	1.28	45.17	919.1	1056.8	6.80	40.2	54.5	14.4	52.0	8.26	8.12	7.37	39.14	38.86677	0.00	NORMAL
6/17/2022 14:46	12.18	1.70	51.41	919.1	1062.5	6.80	40.2	54.5	14.4	52.0	8.27	8.11	7.37	39.14	38.86666	0.00	NORMAL
6/17/2022 14:47	12.05	17.15	68.94	919.0	1063.0	6.80	40.1	54.5	14.4	52.0	8.27	8.09	7.36	39.14	38.86683	0.00	NORMAL
6/17/2022 14:48	11.55	7.83	36.27	919.0	1065.1	6.80	40.2	54.5	14.3	52.0	8.28	8.09	7.36	39.13	38.86816	0.00	NORMAL
6/17/2022 14:49	12.02	4.23	56.33	919.0	1064.8	6.80	40.1	54.5	14.3	52.0	8.29	8.09	7.35	39.13	38.86883	0.00	NORMAL
6/17/2022 14:50	12.28	28.02	52.01	919.0	1060.6	6.80	40.1	54.5	14.3	51.9	8.30	8.09	7.35	39.14	38.86961	0.00	NORMAL
6/17/2022 14:51	11.71	4.69	39.65	919.0	1062.4	6.79	40.2	54.5	14.3	51.9	8.31	8.08	7.34	39.14	38.86994	0.00	NORMAL
6/17/2022 14:52	12.03	6.26	58.36	919.1	1064.7	6.79	40.2	54.5	14.4	51.9	8.32	8.07	7.33	39.14	38.87072	0.00	NORMAL
6/17/2022 14:53	11.70	11.00	50.80	919.1	1062.0	6.79	40.2	54.5	14.4	51.9	8.32	8.06	7.33	39.13	38.87061	0.00	NORMAL
6/17/2022 14:54	11.79	2.51	41.38	919.1	1064.4	6.79	40.2	54.6	14.4	51.9	8.33	8.05	7.32	39.13	38.87017	0.00	NORMAL
6/17/2022 14:55	12.21	17.37	63.39	919.0	1063.9	6.79	40.2	54.6	14.4	51.9	8.34	8.03	7.31	39.13	38.87133	0.00	NORMAL
6/17/2022 14:56	11.60	297.28	35.07	919.0	1062.7	6.79	40.2	54.5	14.4	51.9	8.35	8.02	7.31	39.13	38.87128	1.00	NORMAL
6/17/2022 14:57	11.98	267.23	56.11	918.9	1066.1	6.79	40.2	54.5	14.4	51.9	8.36	8.01	7.30	39.13	38.87189	1.00	NORMAL
6/17/2022 14:58	11.85	8.93	64.71	918.9	1067.2	6.79	40.2	54.5	14.3	51.9	8.36	8.00	7.30	39.13	38.87233	1.00	NORMAL
6/17/2022 14:59	11.42	2.15	59.59	918.8	1067.9	6.78	40.2	54.5	14.3	51.9	8.37	7.98	7.29	39.13	38.87378	1.00	NORMAL
6/17/2022 15:00	12.23	7.34	85.67	918.7	1069.5	6.78	40.2	54.5	14.3	51.9	8.38	7.97	7.28	39.13	38.87511	1.00	NORMAL
6/17/2022 15:01	11.51	135.60	61.80	918.6	1070.1	6.78	40.2	54.5	14.3	51.9	8.39	7.96	7.28	39.13	38.87544	1.00	NORMAL
6/17/2022 15:02	11.57	627.06	68.76	918.5	1071.0	6.78	40.2	54.5	14.3	51.9	8.39	7.95	7.27	39.13	38.87616	1.00	NORMAL
6/17/2022 15:03	12.09	20.07	85.03	918.4	1070.3	6.78	40.2	54.5	14.3	51.9	8.40	7.93	7.26	39.13	38.87655	1.00	NORMAL
6/17/2022 15:04	11.70	4.13	61.13	918.3	1070.9	6.78	40.3	54.5	14.3	51.9	8.41	7.92	7.26	39.13	38.87683	1.00	NORMAL
6/17/2022 15:05	12.00	3.16	78.57	918.2	1074.7	6.78	40.3	54.5	14.2	51.9	8.41	7.92	7.25	39.14	38.87767	1.00	NORMAL
6/17/2022 15:06	11.91	5.24	83.56	918.1	1072.1	6.78	40.3	54.5	14.2	51.9	8.42	7.92	7.25	39.14	38.87794	1.00	NORMAL
6/17/2022 15:07	11.82	2.45	65.40	918.0	1072.2	6.78	40.3	54.5	14.2	51.9	8.43	7.91	7.24	39.14	38.87778	1.00	NORMAL
6/17/2022 15:08	12.27	3.56	82.37	917.9	1073.9	6.78	40.3	54.5	14.2	51.9	8.43	7.91	7.23	39.14	38.87822	1.00	NORMAL
6/17/2022 15:09	12.07	3.49	79.34	917.8	1072.0	6.77	40.4	54.5	14.2	51.9	8.44	7.90	7.23	39.14	38.879	1.00	NORMAL
6/17/2022 15:10	12.02	1.55	67.92	917.7	1074.4	6.77	40.4	54.6	14.1	51.9	8.45	7.89	7.22	39.14	38.87901	1.00	NORMAL
6/17/2022 15:11	12.21	2.99	86.12	917.5	1076.4	6.77	40.4	54.6	14.1	51.9	8.45	7.87	7.21	39.14	38.87906	1.00	NORMAL
6/17/2022 15:12	12.19	4.60	73.81	917.4	1073.2	6.77	40.5	54.6	14.1	51.9	8.46	7.86	7.21	39.14	38.87917	1.00	NORMAL
6/17/2022 15:13	12.14	1.83	54.77	917.3	1075.9	6.77	40.5	54.6	14.1	51.9	8.47	7.85	7.20	39.14	38.87789	1.00	NORMAL
6/17/2022 15:14	12.25	5.20	78.51	917.3	1074.4	6.77	40.5	54.6	14.1	51.9	8.47	7.84	7.20	39.14	38.87695	1.00	NORMAL
6/17/2022 15:15	12.20	4.83	63.60	917.2	1071.1	6.77	40.6	54.6	14.0	51.9	8.48	7.83	7.19	39.14	38.87584	1.00	NORMAL
6/17/2022 15:16	12.39	1.95	61.00	917.1	1073.0	6.77	40.6	54.5	14.0	51.9	8.48	7.82	7.19	39.14	38.87533	1.00	NORMAL
6/17/2022 15:17	12.53	5.12	77.80	917.1	1071.5	6.77	40.6	54.5	13.9	51.9	8.49	7.81	7.18	39.14	38.87484	1.00	NORMAL
6/17/2022 15:18	12.31	8.94	50.30	917.0	1068.6	6.77	40.6	54.5	13.9	51.9	8.49	7.80	7.17	39.14	38.87411	1.00	NORMAL
6/17/2022 15:19	12.54	2.72	56.09	916.9	1070.0	6.77	40.6	54.5	13.9	51.9	8.50	7.79	7.17	39.14	38.87373	1.00	NORMAL
6/17/2022 15:20	12.70	19.67	75.80	916.8	1066.3	6.77	40.6	54.5	13.9	51.9	8.51	7.78	7.17	39.14	38.87362	1.00	NORMAL
6/17/2022 15:21	12.07	5.12	48.87	916.7	1066.4	6.77	40.6	54.5	13.9	51.9	8.51	7.79	7.16	39.14	38.87373	1.00	NORMAL
6/17/2022 15:22	12.43	5.68	76.43	916.6	1068.8	6.77	40.6	54.5	13.9	51.9	8.52	7.79	7.16	39.14	38.87367	1.00	NORMAL
6/17/2022 15:23	12.27	7.30	75.43	916.5	1067.2	6.76	40.7	54.6	13.9	51.9	8.52	7.79	7.15	39.14	38.87312	1.00	NORMAL
6/17/2022 15:24	11.90	2.83	47.77	916.3	1068.4	6.76	40.7	54.6	13.9	51.9	8.53	7.79	7.15	39.14	38.87223	1.00	NORMAL
6/17/2022 15:25	12.45	12.09	69.65	916.2	1068.6	6.76	40.7	54.6	13.9	51.9	8.53	7.78	7.15	39.14	38.87084	1.00	NORMAL
6/17/2022 15:26	11.95	13.68	45.27	916.1	1065.6	6.76	40.7	54.6	13.9	51.9	8.53	7.77	7.14	39.14	38.87006	1.00	NORMAL
6/17/2022 15:27	12.30	2.55	49.59	916.0	1066.8	6.76	40.7	54.6	13.9	51.9	8.54	7.77	7.14	39.14	38.87056	1.00	NORMAL
6/17/2022 15:28	12.48	13.48	63.52	915.9	1065.5	6.76	40.7	54.6	13.8	51.9	8.54	7.76	7.14	39.14	38.86979	1.00	NORMAL
6/17/2022 15:29	11.70	193.78	42.01	915.8	1065.3	6.76	40.8	54.5	13.8	51.9	8.55	7.75	7.14	39.14	38.87006	1.00	NORMAL
6/17/2022 15:30	12.34	124.21	66.05	915.6	1066.5	6.76	40.8	54.5	13.7	51.9	8.55	7.75	7.14	39.14	38.869	1.00	NORMAL
6/17/2022 15:31	12.22	28.95	51.09	915.5	1063.5	6.76	40.8	54.5	13.7	51.9	8.55	7.74	7.14	39.14	38.86862	1.00	NORMAL
6/17/2022 15:32	11.69	4.34	37.59	915.3	1063.6	6.76	40.8	54.5	13.7	51.9	8.56	7.73	7.13	39.14	38.86834	1.00	NORMAL
6/17/2022 15:33	12.30	7.96	62.82	915.1	1064.3	6.76	40.8	54.5	13.7	51.9	8.56	7.72	7.13	39.15	38.86762	1.00	NORMAL
6/17/2022 15:34	11.99	17.58	43.36	914.9	1060.6	6.76	40.8	54.5	13.7	51.9	8.56	7.72	7.13	39.15	38.8674	1.00	NORMAL
6/17/2022 15:35	12.04	7.97	38.56	914.7	1063.3	6.75	40.8	54.5	13.8	51.9	8.57	7.73	7.13	39.15	38.86723	1.00	NORMAL
6/17/2022 15:36	12.39	30.91	73.14	914.5	1062.2	6.75	40.8	54.6	13.8	51.9	8.57	7.73	7.13	39.15	38.86673	1.00	NORMAL
6/17/2022 15:37	11.95	22.79	37.01	914.2	1058.5	6.75	40.7	54.6	13.8	51.9	8.57	7.73	7.13	39.15	38.86596	1.00	NORMAL
6/17/2022 15:38	12.14	2.17	39.87	914.0	1061.9	6.75	40.7	54.6	13.8	51.9	8.57	7.73	7.13	39.15	38.8649	1.00	NORMAL
6/17/2022 15:39	12.20	15.00	58.30	913.7	1061.0	6.75	40.7	54.6	13.8	51.9	8.58	7.72	7.13	39.14	38.86368	1.00	NORMAL
6/17/2022 15:40	12.09	23.72	36.30	913.6	1057.7	6.75	40.8	54.6	13.8	51.9	8.58	7.72	7.13	39.14	38.86218	1.00	NORMAL
6/17/2022 15:41	12.27	2.85	36.56	913.4	1063.6	6.75	40.8	54.6	13.8	51.8	8.58	7.71	7.13	39.14	38.86057	1.00	NORMAL
6/17/2022 15:42	12.08	21.78	57.42	913.3	1062.5	6.75	40.8	54.6	13.8	51.8	8.58	7.71	7.13	39.14	38.86007	1.00	NORMAL
6/17/2022 15:43	12.11	28.13	33.99	913.2	1059.2	6.74	40.8	54.5	13.7	51.8	8.58	7.70	7.13	39.14	38.85951	1.00	NORMAL
6/17/2022 15:44	12.12	2.90	34.24	913.2	1063.6	6.74	40.8	54.5	13.7	51.8	8.58	7.69	7.13	39.14	38.85812	1.00	NORMAL
6/17/2022 15:45	11.92	4.92	47.49	913.2	1064.4	6.74	40.8	54.5	13.7	51.8	8.58	7.69	7.13	39.14	38.85757	1.00	NORMAL
6/17/2022 15:46	12.06	20.47	42.53	913.3	1061.1	6.74	40.8	54.5	13.7	51.8	8.58	7.68	7.13	39.14	38.85624	1.00	NORMAL

TheDate	OX6min	COmin	NOXmin	PrimTemp	SecTemp	SNCR	DemTemp	CarbTemp	DiffTemp	IDFanTemp	QunchPH	CondPH	AtomPH	AtomA	AtomB	HEPADP	OpMode
6/17/2022 15:47	11.93	3.99	34.77	913.3	1066.0	6.74	40.9	54.5	13.7	51.8	8.58	7.67	7.13	39.14	38.85479	1.00	NORMAL
6/17/2022 15:48	11.93	29.44	58.22	913.3	1065.0	6.74	40.9	54.6	13.7	51.8	8.58	7.67	7.13	39.14	38.85329	1.00	NORMAL
6/17/2022 15:49	11.99	50.89	36.03	913.4	1061.0	6.74	40.9	54.6	13.7	51.8	8.58	7.66	7.13	39.14	38.85179	1.00	NORMAL
6/17/2022 15:50	11.93	4.38	33.53	913.4	1063.4	6.73	40.9	54.6	13.7	51.8	8.58	7.67	7.14	39.14	38.85124	1.00	NORMAL
6/17/2022 15:51	12.01	6.09	49.43	913.5	1063.3	6.73	40.9	54.6	13.7	51.8	8.58	7.68	7.14	39.14	38.8499	1.00	NORMAL
6/17/2022 15:52	12.03	42.02	36.91	913.5	1058.7	6.73	40.9	54.6	13.7	51.8	8.58	7.68	7.14	39.14	38.84851	1.00	NORMAL
6/17/2022 15:53	11.94	23.00	34.54	913.5	1063.1	6.73	40.9	54.6	13.6	51.8	8.58	7.67	7.14	39.14	38.84706	1.00	NORMAL
6/17/2022 15:54	11.88	12.90	58.28	913.6	1062.6	6.73	40.9	54.6	13.6	51.8	8.58	7.67	7.14	39.14	38.84595	1.00	NORMAL
6/17/2022 15:55	12.06	26.46	49.75	913.6	1057.2	6.73	40.9	54.5	13.6	51.8	8.58	7.66	7.14	39.14	38.8454	1.00	NORMAL
6/17/2022 15:56	12.00	2.21	44.88	913.6	1059.8	6.73	40.9	54.5	13.6	51.8	8.58	7.66	7.14	39.14	38.84429	1.00	NORMAL
6/17/2022 15:57	11.77	2.43	71.06	913.6	1062.3	6.72	41.0	54.5	13.6	51.8	8.57	7.65	7.14	39.14	38.84312	1.00	NORMAL
6/17/2022 15:58	11.97	32.95	51.55	913.5	1057.2	6.72	41.0	54.5	13.5	51.8	8.57	7.64	7.14	39.14	38.84162	1.00	NORMAL
6/17/2022 15:59	11.93	6.87	28.89	913.5	1060.6	6.72	41.0	54.5	13.5	51.8	8.57	7.64	7.14	39.13	38.8414	1.00	NORMAL
6/17/2022 16:00	11.51	1.34	48.89	913.5	1065.7	6.72	41.0	54.6	13.5	51.8	8.57	7.63	7.15	39.13	38.83995	1.00	NORMAL
6/17/2022 16:01	11.79	15.69	67.62	913.5	1061.3	6.72	41.0	54.6	13.5	51.8	8.56	7.63	7.15	39.13	38.8389	1.00	NORMAL
6/17/2022 16:02	12.10	16.30	30.99	913.5	1060.8	6.72	41.1	54.6	13.5	51.8	8.56	7.62	7.15	39.13	38.83784	1.00	NORMAL
6/17/2022 16:03	11.76	1.50	46.22	913.5	1065.4	6.71	41.1	54.6	13.5	51.8	8.55	7.63	7.15	39.13	38.83712	1.00	NORMAL
6/17/2022 16:04	11.83	21.10	65.48	913.5	1061.6	6.71	41.1	54.6	13.5	51.8	8.55	7.64	7.15	39.13	38.83668	1.00	NORMAL
6/17/2022 16:05	11.95	7.12	31.54	913.4	1060.6	6.71	41.1	54.6	13.4	51.8	8.54	7.63	7.15	39.13	38.83601	1.00	NORMAL
6/17/2022 16:06	11.91	1.52	47.16	913.4	1064.6	6.71	41.2	54.6	13.4	51.8	8.53	7.63	7.15	39.13	38.83601	1.00	NORMAL
6/17/2022 16:07	12.01	33.36	64.02	913.4	1060.6	6.71	41.2	54.6	13.4	51.8	8.53	7.63	7.16	39.13	38.83451	1.00	NORMAL
6/17/2022 16:08	11.82	13.14	25.38	913.3	1058.9	6.71	41.2	54.5	13.4	51.8	8.52	7.62	7.16	39.13	38.83406	1.00	NORMAL
6/17/2022 16:09	11.88	1.94	42.61	913.3	1062.9	6.71	41.2	54.5	13.3	51.8	8.51	7.62	7.16	39.13	38.83329	1.00	NORMAL
6/17/2022 16:10	11.99	23.67	70.66	913.3	1058.8	6.71	41.2	54.5	13.3	51.8	8.50	7.61	7.16	39.13	38.83162	1.00	NORMAL
6/17/2022 16:11	12.09	10.20	30.94	913.3	1058.5	6.71	41.3	54.6	13.3	51.8	8.50	7.61	7.16	39.13	38.83117	1.00	NORMAL
Average	**11.71**	**19.49**	**61.23**	**901.40**	**1062.60**	**6.82**	**38.46**	**54.51**	**16.05**	**51.43**	**8.46**	**7.95**	**7.29**	**39.18**	**38.87**	**0.17**	
Min	**9.86**	**0.00**	**25.38**	**882.49**	**1043.92**	**6.71**	**33.60**	**54.42**	**13.22**	**49.52**	**7.36**	**7.61**	**7.13**	**39.13**	**38.82**	**0.00**	**Normal(on)**
Max	**12.80**	**738.58**	**165.49**	**919.62**	**1076.37**	**6.87**	**41.31**	**54.60**	**20.87**	**52.81**	**9.52**	**8.35**	**7.49**	**39.27**	**38.93**	**1.00**	

APPENDIX **M**

Modelling Results - Test Contaminants - ECA Contaminants

Scenario	Contaminant	CAS Number	Total Facility Emission Rate (g/s)	Air Dispersion Model Used	Maximum POI Concentration (µg/m³)	Averaging Period (Hrs)	ACB (µg/m³) [1]	Limiting Effect	Regulation Schedule #	Benchmark Category [2]	Percentage of MECP Standard (%)
Normal	1,2,4-Trichlorobenzene	120-82-1	8.81E-08	AERMOD	2.59E-05	24	400	Health	Guideline	B1	< 1%
	Aluminum Oxide	1344-28-1	2.83E-04	AERMOD	8.32E-02	24	120	Health	Guideline	B1	< 1%
	Arsenic (As)	7440-38-2	8.33E-07	AERMOD	2.45E-04	24	0.3	Health	Guideline	B1	< 1%
	Barium (Ba)	7440-39-3	8.91E-06	AERMOD	2.62E-03	24	10	Health	Guideline	B1	< 1%
[3][4]	PCDD/F (ITEQ)	n/a	8.84E-11	AERMOD	2.60E-08	24	1.00E-07	Health	Standard	B1	26%
[3][4]	PCDD/F (ITEQ)	n/a	8.84E-11	AERMOD	2.60E-08	24	1.00E-06	Health	URT	URT	3%
	Pentachlorophenol	87-86-5	8.81E-08	AERMOD	2.59E-05	24	20	Health	Guideline	B1	< 1%
	Phosphorus (P)	10026-13-8	9.37E-05	AERMOD	2.75E-02	24	10	Health	Guideline	B1	< 1%
	Total PCB	1336-36-3	8.86E-07	AERMOD	2.60E-04	24	0.15	Health	Guideline	B1	< 1%
	Selenium (Se)	7782-49-2	2.08E-06	AERMOD	6.12E-04	24	10	Health	Guideline	B1	< 1%
	Cadmium	7440-43-9	5.50E-07	AERMOD	1.62E-04	24	0.025	Health	Standard	B1	< 1%
	Cadmium	7440-43-9	5.50E-07	AERMOD	1.62E-04	24	0.25	Health	URT	URT	< 1%
	Carbon Monoxide	630-08-0	1.08E-02	AERMOD	1.00E+01	0.5	6000	Health	Standard	B1	< 1%
	Hydrochloric Acid	7647-01-0	8.97E-03	AERMOD	2.64E+00	24	20	Health	Standard	B1	13%
	Hydrochloric Acid	7647-01-0	8.97E-03	AERMOD	2.64E+00	24	200	Health	URT	URT	1%
	Lead	7439-92-1	4.88E-06	AERMOD	1.43E-03	24	0.5	Health	Standard	B1	< 1%
	Lead	7439-92-1	4.88E-06	AERMOD	2.62E-04	720	0.2	Health	Standard	B1	< 1%
	Lead	7439-92-1	4.88E-06	AERMOD	1.43E-03	24	2	Health	URT	URT	< 1%
	Mercury	7439-97-6	1.47E-05	AERMOD	4.32E-03	24	2	Health	Standard	B1	< 1%
	Oxides of Nitrogen	10102-44-0	2.28E-01	AERMOD	1.76E+02	1	400	Health	Standard	B1	44%
	Oxides of Nitrogen	10102-44-0	2.28E-01	AERMOD	6.70E+01	24	200	Health	Standard	B1	33%
	Particulate Matter	n/a	6.97E-03	AERMOD	2.05E+00	24	120	Visibility	Standard	B1	2%
	Sulphur dioxide	7446-09-5	5.47E-03	AERMOD	4.21E+00	1	690	Health	Standard	B1	< 1%
	Sulphur dioxide	7446-09-5	5.47E-03	AERMOD	1.61E+00	24	275	Health	Standard	B1	< 1%
	Sulphur dioxide	7446-09-5	5.47E-03	AERMOD	4.21E+00	1	690	Health	URT	URT	< 1%
[5]	Sulphur dioxide	7446-09-5	5.47E-03	AERMOD	4.21E+00	1	100	Health	Standard	B1	4%
[5]	Sulphur dioxide	7446-09-5	5.47E-03	AERMOD	2.24E-01	8760	10	Health	Standard	B1	2%

*Modelling was updated in September, 2022. Meterological data was run using MECP Suburban Met. Data Set (v.19191) and modelling was completed using AERMOD v.19191

Notes:

[1] The term "MECP POI Limit" identified in Table D-4 of Guideline A-10 refers to the following information (there may be more than one relevant MECP POI Limit for each contaminant):

- Air quality Standards, Guidelines or SL-JSLs set out the MECP publication, "Air Contaminants Benchmark (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", 01 April 2018;
- The Daily Assessment Values (DAV) from the MECP ACB List;
- The Annual Assessment Values (AAV) from the MECP ACB List; or,
- Human Risk Threshold (HRT) from the MECP ACB List

[2] Benchmark Categories are set out in the MECP ACB List; Benchmark 1 (B1) refers to Standards or Guidelines, Benchmark 2 (B2) refers to Screening Levels.

[3] The PCDD/F (ITEQ) based on the total toxicity equivalent for all individual compounds based on stack sampling program conducted by RWDI

[4] Concentrations in micrograms per cubic metre

[5] New ACB Standard for Sulphur Dioxide, effective date July 1, 2023.

[6] AERMOD maximum 1-hour predicted concentrations multiplied by factor of 1.2 to derive equivalent 1/2 hour concentrations.

1 g/sec modelling rates results in a maximum half-hour POI of 925 µg/m^3

1 g/sec modelling rates results in a maximum 1-hour POI of (from Mode 770 µg/m^3

1 g/sec modelling rates results in a maximum 24-hour POI of (from Mode 294 µg/m^3

1 g/sec modelling rates results in a maximum Monthly POI of (from Mod 54 µg/m^3

1 g/sec modelling rates results in a maximum Annual Average POI of (fro 29 µg/m^3

Any Annual POI Concentrations in Table 12 were obtained by multiplying the contaminant emission rate by the Annual Average unit dispersion factor with that result multiplied by 140% as specified in MECP Guideline A-10, Secion 11.1.5.

APPENDIX **N**

List of Participants

Individuals	Role	Company	Contact Information
Kirk Easto	Project Management	RWDI	Kirk.Easto@rwdi.com
Mitchell Southwell, B.Sc., QSTI	Stack Sampling - Team lead	RWDI	Mitchell.Southwell@rwdi.com
Oluwatobi Odumoye, E.I.T., QSTI	Stack Sampling	RWDI	Oluwatobi.Odumoye@rwdi.com
Hayden Edworthy	Stack Sampling	RWDI	Hayden.Edworthy@rwdi.com
Sean Ratcliffe	Stack Sampling	RWDI	Sean.Ratcliffe@rwdi.com
Dan Kokol	EHS Specialist	Stericycle	DKokol@stericycle.com
Conan Fonseca	Facility Manager, Incinerator	Stericycle	Conan.Fonseca@stericycle.com
Clayton Johnson	Lab Analysis	Bureau Veritas Labs	Clayton.Johnson@bureauveritas.com

Source Evaluation Society

P. O. Box 12124
Research Triangle Park
North Carolina 27709

October 26, 2021

Oluwatobi O. Odumoye
RWDI
15 Columbus Crescent
Guelph, Ontario N1G 3A7
CANADA

Subject: Qualified Source Tester Certificate No. 2021-1102

Qualification Notice - Manual Gas Volume Measurements and Isokinetic Particulate Sampling Methods (exam date: 3/3/21)
Qualification Notice - Gaseous Pollutants Instrumental Sampling Methods (exam date: 6/27/21)
Qualification Notice – Hazardous Metals Measurement Sampling Methods (exam date: 3/26/21)

Dear Mr. Odumoye:

It is my pleasure to inform you that you have satisfied the requirements of the Source Evaluation Society Qualified Source Test Individual program for group exam(s) listed above. As a member of the successful candidates in this SES program, you should be proud of this distinction within the source emissions testing community. I am confident that you will continue to uphold the standards of technical excellence and ethical conduct embodied in the SES mission statement.

The enclosed Qualification Notice(s) and SES identification card are your permanent record of this achievement. This status is valid for the period shown on the Qualification Notices.

Congratulations on your achievement and I wish you continued success in your future endeavors.

Sincerely yours,

Peter R. Westlin
SES QSTI/QSTO Review Committee Chairman

cc: Glenn England, SES QSTI/QSTO Review Board Member
Karen D. Kajiya-Mills, SES QSTI/QSTO Review Board Member
Peter S. Pakalnis, SES QSTI/QSTO Review Board Member
Theresa M. Lowe, SES QSTI/QSTO Review Committee Administrator
Bruce C. Randall, SES QSTI/QSTO Review Board Member
J. Wade Bice, SES QSTI/QSTO Review Board Member
Tina Sanderson, SES QSTI/QSTO Review Board Member

Source Evaluation Society

P. O. Box 12124
Research Triangle Park
North Carolina 27709

An idea was introduced at the 2006 SSSAAP conference to list those individuals who have received their QSTI qualification approvals on the SES web site. The SES Board of Directors determined that individuals would have to approve in writing before making public such information. The QSTI Committee would like your permission to post the information shown below on the SES web site for public view. This information will be provided on the website as a link to an Excel spreadsheet. Your information will be listed as below or with any changes you indicate:

Name Company City/State/Zip:	Oluwatobi O. Odumoye RDWI Guelph, Ontario N1G 3A7		
Contact Info.:	oo@rwdi.com; iodumoye@gmail.com		
Any Addlt. Info:			
Passed:	Group 1	Exam Date: 3/3/21	Valid From - To: 03/03/2021 to 03/02/2026
	Group 3	Exam Date: 6/27/21	Valid From - To: 06/27/21 to 06/26/2026
	Group 4	Exam Date: 3/26/21	Valid From - To: 03/26/2021 to 03/25/2026
QSTI Certificate #:	2021-1102		

You may view the current spreadsheet format at the SES website at www.sesnews.org. If you agree to your name and information being posted, please sign below and email to Theresa Lowe at qstiprogram@gmail.com. Also, if you wish to have your contact information listed other than your email address, please note any changes above (*e.g.*, an address, telephone or a cell phone number, etc.). Any further changes or additions will need to be made in writing and emailed to Theresa Lowe at qstiprogram@gmail.com.

Thank you,

Theresa Lowe
SES QSTI/QSTO Review Committee Administrator

I give the SES QSTI/QSTO Review Committee approval to have my name and information as outlined above to be posted on the SES web site. Any changes have been noted above. This approval extends to any future exams for which I receive a QSTI or QSTO Qualification Approval(s).

Signature: _____ Date: _____

DO YOU APPROVE SES RELEASING INFORMATION, UPON REQUEST, ABOUT WHETHER YOU HAVE PASSED A METHOD GROUP EXAM? (The information released will be if you passed an exam and the date of the exam. This information is in support of ASTM D-7036-D.) YES ☐ NO ☐ IF YOU AGREE, PLEASE SIGN BELOW.

Signature: _____ Date: _____

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

OLUWATOBI O. ODUMOYE

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GAS VOLUME MEASUREMENTS AND ISOKINETIC PARTICULATE SAMPLING METHODS

ISSUED THIS 3RD DAY OF MARCH 2021 AND EFFECTIVE UNTIL MARCH 2ND, 2026

Peter R. Westlin, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

Tina Sanderson, QSTI/QSTO Review Board

J. Wade Bice, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Bruce Randall QSTI/QSTO Review Board

CERTIFICATE NO. 2021-1102

SOURCE EVALUATION SOCIETY INCORPORATED 1995 NORTH CAROLINA

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

OLUWATOBI O. ODUMOYE

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

GASEOUS POLLUTANTS INSTRUMENTAL SAMPLING METHODS

ISSUED THIS 27TH DAY OF JUNE 2021 AND EFFECTIVE UNTIL JUNE 26TH, 2026

Peter R. Westlin, QSTI/QSTO Review Board

J. Wade Bice, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Tina Sanderson, QSTI/QSTO Review Board

Bruce Randall QSTI/QSTO Review Board

CERTIFICATE NO. 2021-1102

SOURCE EVALUATION SOCIETY 1995 NORTH CAROLINA

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

OLUWATOBI O. ODUMOYE

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

HAZARDOUS METALS MEASUREMENT SAMPLING METHODS

ISSUED THIS 26TH DAY OF MARCH 2021 AND EFFECTIVE UNTIL MARCH 25TH, 2026

Peter R. Westlin, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

Tina Sanderson, QSTI/QSTO Review Board

J. Wade Bice, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Bruce Randall QSTI/QSTO Review Board

CERTIFICATE NO. 2021-1102

SOURCE EVALUATION SOCIETY INCORPORATED 1995 NORTH CAROLINA

Source Evaluation Society

P. O. Box 12124
Research Triangle Park
North Carolina 27709

November 30, 2021

Mitchell O. Southwell
RWDI
600 Southgate Drive
Guelph, Ontario N1G 3W6
CANADA

Subject: Qualified Source Tester Certificate No. 2021-1108

Qualification Notice - Manual Gas Volume Measurements and Isokinetic Particulate Sampling Methods (exam date: 3/4/21)
Qualification Notice - Manual Gaseous Pollutants Source Sampling Methods (exam date: 3/25/21)
Qualification Notice – Hazardous Metals Measurement Sampling Methods (exam date: 4/8/21)

Dear Mr. Southwell:

It is my pleasure to inform you that you have satisfied the requirements of the Source Evaluation Society Qualified Source Test Individual program for group exam(s) listed above. As a member of the successful candidates in this SES program, you should be proud of this distinction within the source emissions testing community. I am confident that you will continue to uphold the standards of technical excellence and ethical conduct embodied in the SES mission statement.

The enclosed Qualification Notice(s) and SES identification card are your permanent record of this achievement. This status is valid for the period shown on the Qualification Notices.

Congratulations on your achievement and I wish you continued success in your future endeavors.

Sincerely yours,

Peter R. Westlin
SES QSTI/QSTO Review Committee Chairman

cc: Glenn England, SES QSTI/QSTO Review Board Member
Karen D. Kajiya-Mills, SES QSTI/QSTO Review Board Member
Peter S. Pakalnis, SES QSTI/QSTO Review Board Member
Theresa M. Lowe, SES QSTI/QSTO Review Committee Administrator
Bruce C. Randall, SES QSTI/QSTO Review Board Member
J. Wade Bice, SES QSTI/QSTO Review Board Member
Tina Sanderson, SES QSTI/QSTO Review Board Member

Source Evaluation Society

P. O. Box 12124
Research Triangle Park
North Carolina 27709

An idea was introduced at the 2006 SSSAAP conference to list those individuals who have received their QSTI qualification approvals on the SES web site. The SES Board of Directors determined that individuals would have to approve in writing before making public such information. The QSTI Committee would like your permission to post the information shown below on the SES web site for public view. This information will be provided on the website as a link to an Excel spreadsheet. Your information will be listed as below or with any changes you indicate:

Name Company City/State/Zip:	Mitchell O. Southwell RWDI Guelph, Ontario N1G 3W6		
Contact Info.:	mitchellsouthwell@gmail.com		
Any Addlt. Info:			
Passed:	Group 1	Exam Date: 3/4/21	Valid From - To: 03/04/2021 to 03/03/2026
	Group 2	Exam Date: 3/25/21	Valid From - To: 03/25/2021 to 03/24/2026
	Group 4	Exam Date: 4/8/21	Valid From - To: 04/08/2021 to 04/07/2026
QSTI Certificate #:	2021-1108		

You may view the current spreadsheet format at the SES website at www.sesnews.org. If you agree to your name and information being posted, please sign below and email to Theresa Lowe at qstiprogram@gmail.com. Also, if you wish to have your contact information listed other than your email address, please note any changes above (*e.g.,* an address, telephone or a cell phone number, etc.). Any further changes or additions will need to be made in writing and emailed to Theresa Lowe at qstiprogram@gmail.com.

Thank you,

Theresa Lowe
SES QSTI/QSTO Review Committee Administrator

I give the SES QSTI/QSTO Review Committee approval to have my name and information as outlined above to be posted on the SES web site. Any changes have been noted above. This approval extends to any future exams for which I receive a QSTI or QSTO Qualification Approval(s).

Signature: _____ Date: _____

DO YOU APPROVE SES RELEASING INFORMATION, UPON REQUEST, ABOUT WHETHER YOU HAVE PASSED A METHOD GROUP EXAM? (The information released will be if you passed an exam and the date of the exam. *This information is in support of ASTM D-7036-D.)* YES ☐ NO ☐ IF YOU AGREE, PLEASE SIGN BELOW.

Signature: _____ Date: _____

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

MITCHELL O. SOUTHWELL

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GAS VOLUME MEASUREMENTS AND ISOKINETIC PARTICULATE SAMPLING METHODS

ISSUED THIS 4TH DAY OF MARCH 2021 AND EFFECTIVE UNTIL MARCH 3RD, 2026

Peter R. Westlin, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

Tina Sanderson, QSTI/QSTO Review Board

J. Wade Bice, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Bruce Randall QSTI/QSTO Review Board

CERTIFICATE NO. 2021-1108

SOURCE EVALUATION SOCIETY CORPORATE SEAL 1995 NORTH CAROLINA

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

MITCHELL O. SOUTHWELL

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GASEOUS POLLUTANTS SOURCE SAMPLING METHODS

ISSUED THIS 25TH DAY OF MARCH 2021 AND EFFECTIVE UNTIL MARCH 24TH, 2026

Peter R. Westlin, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

Tina Sanderson, QSTI/QSTO Review Board

J. Wade Bice, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Bruce Randall QSTI/QSTO Review Board

CERTIFICATE NO. 2021-1108

SOURCE EVALUATION SOCIETY CORPORATE SEAL 1995 NORTH CAROLINA

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

MITCHELL O. SOUTHWELL

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

HAZARDOUS METALS MEASUREMENT SAMPLING METHODS

ISSUED THIS 8TH DAY OF APRIL 2021 AND EFFECTIVE UNTIL APRIL 7TH, 2026

Peter R. Westlin, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

Tina Sanderson, QSTI/QSTO Review Board

J. Wade Bice, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Bruce Randall QSTI/QSTO Review Board

CERTIFICATE NO. 2021-1108

SOURCE EVALUATION SOCIETY CORPORATE SEAL 1995 NORTH CAROLINA

APPENDIX E

Appendix F: Emergency Generator Emission Calculations

RWDI# 2204908

A new emergency diesel generator was installed in 2016, model Generac SD500, with 500kW rated power, and 762hp at rated power.
Generator testing considers a 15-minute startup time during which no control of nitrogen oxides is assumed. Emission factors during this startup period are estimated using AP-42 Table 3.3-1.
The Generac SD500 is EPA Certified for emissions, therefore emissions complying with EPA Tier 3 are assumed during normal operation following the startup period. Following MECP guidance for emergency standby generators, the significant contaminants emitted to the atmosphere from an emergency generator are nitrogen oxides, with an approval screening level of 1880 $\mu g/m^3$ maximum half-hour average at non-sensitive receptors. Therefore, only NOx is considered in the emission calculation. These calculations are provided in Step 1 and Step 2 below.

Step 1: Determining Emission Rates for startup and normal operation

Emission Rates at Startup

Contaminant	Electrical Power Rating [1] (hp)	Mechanical Power Rating [1] (bhp)	Emission Factor [2] (lb/hp-hr)	Emission Rate at startup (g/s)
NOx	762	914.4	0.031	3.57

Notes:
[1] Power rating for engine model SD500, as provided by the manufacturer. Brake horsepower was not provided and is assumed to be 20% higher.
[2] Emission factor from AP-42 Chapter 3.3 Table 3.3-1

Sample Emission Rate Calculations For NOx during unit startup:

NOx Emission Rate = Power Rating hp × Emission factor lb/hp-hr × 1 hr / 3600 seconds × 453.59237 g / 1 lb

NOx Emission Rate = 914.4 hp × 0.031 lb/hp-hr × 1 hr / 3600 seconds × 453.59237 g / 1 lb

NOx Emission Rate = 3.57 g/s

Emission Rates for Normal Operation

Contaminant	Power Rating [1] (kWe)	Emission Factor [2] (g/kW-hr)	Emission Rate, normal operation (g/s)
NOx	500	4.00	0.56

Notes:
[1] Power rating for engine model SD500, as provided by the manufacturer.
[2] Emission factor for U.S. EPA Tier 3 Nonroad and Stationary Compression Ignition Engines

Sample Emission Rate Calculations For NOx during normal operation:

NOx Emission Rate =	Power Rating	kW	Emission factor	g	1	hr
				kW-hr	3600	seconds
NOx Emission Rate =	500	kW	4	g	1	hr
				kW-hr	3600	seconds
NOx Emission Rate =	0.56	g/s				

Step 2: Determining the Weighted Emission Rates Used in the Dispersion Model

Assessed a 15 minute warm up time, where generators operate without NOx control.
After the 15 minute warm up time NOx control is assumed to U.S. EPA Tier 3 standards.

Startup	15	minutes
Normal	45	minutes

Operating Mode	Emission Rates (g/s)	Exhaust Flow		Exhaust Temperature	
	NOx	(m^3/min)	(m^3/s)	(^oC)	(^oK)
15 Minutes Startup	3.57	112	1.87	550	823
45 Minutes Normal	0.56	112	1.87	550	823
Weighted 1-Hour Average	1.31	112	1.87	550	823

Diameter	0.20	m
Exit Velocity	57.6	m/s

SD500 | 15.2L | 500 kW

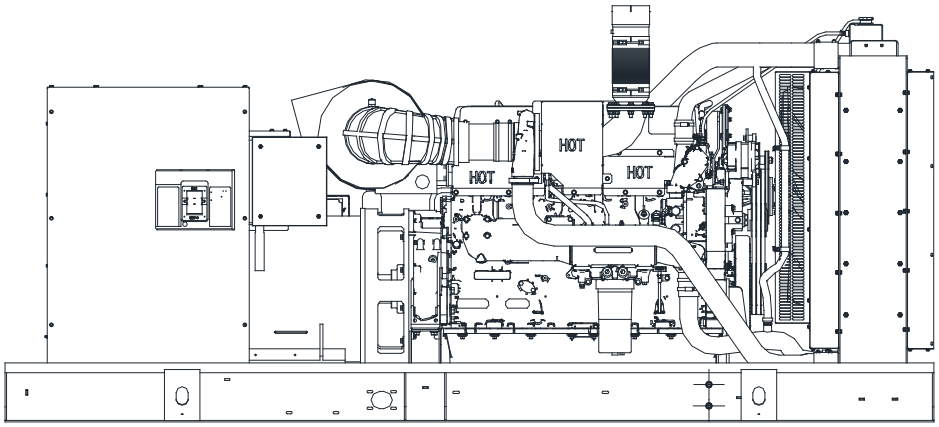
INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

STANDBY POWER RATING

500 kW, 625 kVA, 60 Hz



*Built in the USA using domestic and foreign parts

*EPA Certified Prime ratings are not available in the US or its Territories

**Certain options or customization may not hold certification valid

Image used for illustration purposes only

CODES AND STANDARDS

Generac products are designed to the following standards:

UL2200, UL508, UL142, UL498

NFPA70, 99, 110, 37

NEC700, 701, 702, 708

ISO9001, 8528, 3046, 7637, Pluses #2b, 4

NEMA ICS10, MG1, 250, ICS6, AB1

ANSI C62.41

POWERING AHEAD

For over 50 years, Generac has led the industry with innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac's gensets utilize a wide variety of options, configurations and arrangements, allowing us to met the Standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generator. We choose only engines that Have already been proven in heavy-duty industrial application under adverse conditions.

Generac is committed to ensuring out customer's service support continues after their generator purchase.

SD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

STANDARD FEATURES

ENGINE SYSTEM

General

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel flexible exhaust connection
- Critical Exhaust Silencer (enclosed only)
- Factory Filled Oil
- Radiator Duct Adapter (open set only)

Fuel System

- Fuel lockoff solenoid
- Primary fuel filter

Cooling System

- Closed Coolant Recovery System
- UV/Ozone resistant hoses
- Factory-Installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene glycol antifreeze
- 120 VAC Coolant Heater

Engine Electrical System

- Battery charging alternator
- Battery cables
- Battery tray
- Solenoid activated starter motor
- Rubber-booted engine electrical connections

ALTERNATOR SYSTEM

- UL2200 GENprotect™
- 12 leads (3-phase, non 600 V)
- Class H insulation material
- Vented rotor
- 2/3 pitch
- Skewed stator
- Auxiliary voltage regulator power winding
- Amortisseur winding
- Brushless Excitation
- Sealed Bearings
- Automated manufacturing (winding, insertion, lacing, varnishing)
- Rotor dynamically spin balanced
- Full load capacity alternator
- Protective thermal switch

GENERATOR SET

- Internal Genset Vibration Isolation
- Separation of circuits - high/low voltage
- Separation of circuits - multiple breakers
- Silencer Heat Shield
- Wrapped Exhaust Piping
- Silencer housed in discharge hood (enclosed only)
- Standard Factory Testing
- 2 Year Limited Warranty (Standby rated Units)
- 1 Year Limited Warranty (Prime rated Units)

ENCLOSURE (IF SELECTED)

- Rust-proof fasteners with nylon washers to protect finish
- High performance sound-absorbing material
- Gasketed doors
- Stamped air-intake louvers
- Air discharge hoods for radiator-upward pointing
- Stainless steel lift off door hinges
- Stainless steel lockable handles
- Rhino Coat™ - Textured polyester powder coat

TANKS (IF SELECTED)

- UL 142
- Double wall
- Vents
- Sloped top
- Sloped bottom
- Factory pressure tested (2 psi)
- Rupture basin alarm
- Fuel level
- Check valve in supply and return lines
- Rhino Coat™- Textured polyester powder coat
- Stainless hardware

CONTROL SYSTEM

Control Panel

- Digital H Control Panel - Dual 4x20 Display
- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable PLC
- RS-232/485
- All-Phase Sensing DVR
- Full System Status
- Utility Monitoring
- Low Fuel Pressure Indication
- 2-Wire Start Compatible
- Power Output (kW)
- Power Factor
- kW Hours, Total & Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/sealed Connectors
- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus protocol
- Predictive Maintenance algorithm
- Sealed Boards
- Password parameter adjustment protection
- Single point ground
- 15 channel data logging
- 0.2 msec high speed data logging
- Alarm information automatically comes up on the display

Alarms

- Oil Pressure (Pre-programmable Low Pressure Shutdown)
- Coolant Temperature (Pre-programmed High Temp Shutdown)
- Coolant Level (Pre-programmed Low Level Shutdown)
- Engine Speed (Pre-programmed Over speed Shutdown)
- Battery Voltage Warning
- Alarms & warnings time and date stamped
- Alarms & warnings for transient and steady state conditions
- Snap shots of key operation parameters during alarms & warnings
- Alarms and warnings spelled out (no alarm codes)

SD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

CONFIGURABLE OPTIONS

ENGINE SYSTEM

General

- O 50º C Ambient Cooling System
- O Heavy Duty Air Cleaner
- O Critical & Hospital Grade Silencers
- O CCV (Closed Crankcase Ventilation)

Fuel Electrical System

- O 10A & 20A UL battery charger
- O Battery Warmer

ALTERNATOR SYSTEM

- O Alternator Upsizing
- O Antl-Condensation Heather

CIRCUIT BREAKER OPTIONS

- O Main Line Circuit Breaker
- O 2nd Main Line Circuit Breaker
- O Shunt Trip and Auxiliary Contact
- O Electronic Trip Breaker

GENERATOR SET

- O Intelimonitor Communications Software (English Only)
- O 8 Load Position Load Center
- O AC Electrical Lighting Package (ELP)
- O 5 Year Warranty
- O 5 Year Extended Warranty
- O Spring Isolators (Standard/Seismic)

ENCLOSURE

- O Weather Protected Enclosure
- O Level 1 Sound Attenuation
- O Level 2 Sound Attenuation
- O Steel Enclosure
- O Aluminum Enclosure
- O 150/180 MPH Wind Rating
- O Louvers with Gravity Dampers
- O Enclosure Heaters

TANKS (Size on last page)

- O Electrical Fuel Level
- O Mechanical Fuel Level
- O 12 Hour Run Time
- O 24 Hour Run Time
- O Fuel Line Kits
- O Fuel Water Separator

CONTROL SYSTEM

- O NFPA 110 Complaint
- O Remote Relay Board (8 or 16)
- O Oil Temperature Sender with Indication Alarm
- O Remote E-Stop (Break Glass-Type, Surface Mount)
- O Remote E-Stop (Red Mushroom- Type, Surface Mount)
- O Remote E-Stop (Red Mushroom-Type, Flush Mount)
- O Remote Communication - Bridge
- O Remote Communication - Ethernet
- O 10A Run Relay, 12 outputs
- O Ground Fault Indication and Protection Functions

ENGINEERED OPTIONS

ENGINE SYSTEM

- O Fluid containment Pan
- O Oil Heater
- O Stainless Steel Hardware

ALTERNATOR SYSTEM

- O 3rd Breaker Systems
- O Unit Mounted Load Banks
- O Medium Voltage Alternators

CONTROL SYSTEM

- O Spare inputs (x4) / outputs (x4)
- O Battery Disconnect Switch

GENERATOR SET

- O Special Testing
- O 12 VDC Enclosure Lighting Kit
- O 24 VDC/120 VAC Enclosure Lighting Kit

ENCLOSURE

- O Motorized Dampers
- O Intrusion Alert Door Switch

TANKS

- O Overfill Protection Valve
- O UL2085 Tank
- O ULC S-601 Tank
- O Stainless Steel Tank
- O Special Fuel Tanks (MIDEQ and FL DEP/DERM, etc.)
- O Vent Extensions
- O Transfer Pumps and Controllers
- O Fuel Tank Heaters

RATING DEFINITIONS

Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability.

Prime - Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. A 10% overload capacity is available for 1 out of every 12 hours. The Prime Power option is only available on International applications. Power ratings in accordance with ISO 8528-1, Second Edition

SD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Perkins
EPA Emissions Compliance	Stationary Emergency
EPA Emissions Reference	See Emissions Data Sheet
Cylinder #	6
Type	In-Line
Displacement - L (cu In)	15.2
Bore - mm (in)	137 (5.39)
Stroke - mm (in)	171 (6.73)
Compression Ratio	16.0:1
Intake Air Method	Turbocharged/Intercooled
Cylinder Head Type	4 - Valve
Piston Type	Aluminum
Crankshaft Type	I-Beam Section

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	+/- 0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full-Flow Cartridge
Crankcase Capacity - L (qts)	45 (47.55)

Cooling System

Cooling System Type	Closed Recovery
Water Pump	Centrifugal Type, Belt Driven
Fan Type	Pusher
Fan Speed (rpm)	1658
Fan Diameter mm (in)	927 (36.5)
JW Coolant Heater Standard Wattage	
After Coolant Heater Standard Wattage	1500
Coolant Heater Standard Voltage	240VAC

Fuel System

Fuel Type	Ultra Low Sulfur Diesel #2
Fuel Specifications	ASTM
Fuel Filtering (microns)	Primary 10 - Secondary 2
Fuel Injection	Electronic
Fuel Pump Type	Engine Driven Gear
Injector Type	MEUI
Engine Type	Pre-Combustion
Fuel Supply Line mm (in)	12.7 (½"NPT)
Fuel Return Line mm (in)	12.7 (½"NPT)

Engine Electrical System

System Voltage	24 VDC
Battery Charging Alternator	70 Amps at 24V
Battery Size	1155 CCA
Battery Group	8D
Battery Voltage	(2) - 12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	WEG
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<3%
Telephone Interference Factor (TIF)	<50
Standard Excitation	Permanent Magnet
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Load Capacity - Standby	100%
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Digital
Regulation Accuracy (Steady State)	±0.5%

SD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

OPERATING DATA

POWER RATINGS

		Standby
Three-Phase 120/208 VAC @0.8pf	500 kW	Amps: 1735
Three-Phase 120/240 VAC @0.8pf	500 kW	Amps: 1504
Three-Phase 277/480 VAC @0.8pf	500 kW	Amps: 752
Three-Phase 346/600 VAC @0.8pf	500 kW	Amps: 601

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

		480 VAC								208/240 VAC						
Alternator	kW	10%	15%	20%	25%	30%	35%	Alternator	kW	10%	15%	20%	25%	30%	35%
Standard	500	475	686	914	1143	1371	1600	Standard	500	429	643	857	1071	1286	1500
Upsize 1	642	471	707	943	1179	1414	1650	Upsize 1	689	543	814	1086	1357	1629	1900
Upsize 2	832	757	1136	1514	1893	2271	2650	Upsize 2	723	571	857	1143	1429	1714	2000

FUEL CONSUMPTION RATES*

Fuel Pump Lift - ft (m)
12 (3.7)
Total Fuel Pump Flow (Combustion + Return) gal/hr (l/hr)
121 (457)

Diesel - gal/hr (l/hr)

Percent Load	Standby
25%	10.5 (39.7)
50%	19.5 (73.8)
75%	23.7 (89.7)
100%	31.2 (118.1)

* Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

		Standby
Coolant Flow per Minute	gal/min (l/min)	114.1 (432)
Coolant System Capacity	gal (L)	13 (49)
Heat Rejection to Coolant	BTU/hr	1,198,080
Inlet Air	cfm (m^3/hr)	30,582 (866)
Max. Operating Radiator Air Temp	F° (C°)	122 (50)
Max. Ambient Temperature (before derate)	F° (C°)	104 (40)
Maximum Radiator Backpressure	in H_2O	0.5

COMBUSTION AIR REQUIREMENTS

		Standby
Flow at Rated Power	cfm (m^3/min)	1483 (42)

ENGINE

		Standby
Rated Engine Speed	rpm	1800
Horsepower at Rated kW**	hp	762
Piston Speed	ft/min (m/min)	2020
BMEP	psi	366

** Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m^3/min)	3955 (112)
Max. Backpressure (Post Silencer)	inHg (Kpa)	2.01 (6.8)
Exhaust Temp (Rated Output)	°F (°C)	1022 (550)
Exhaust Outlet Size (Open Set)	mm (in)	127 (5)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

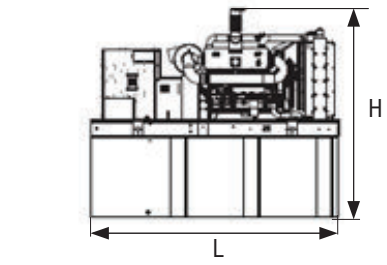
SD500 | 15.2L | 500 kW

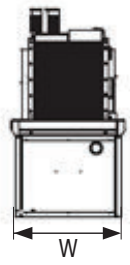
INDUSTRIAL DIESEL GENERATOR SET

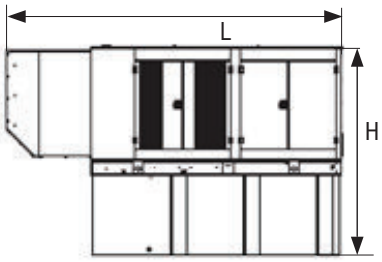
EPA Certified Stationary Emergency

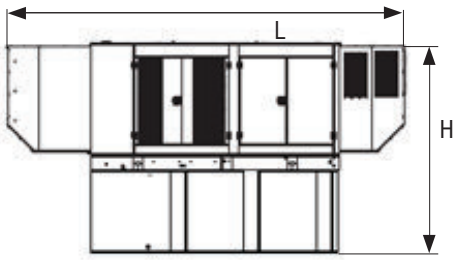
GENERAC | INDUSTRIAL POWER

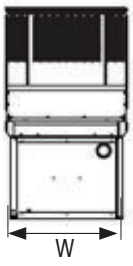
DIMENSIONS AND WEIGHTS*

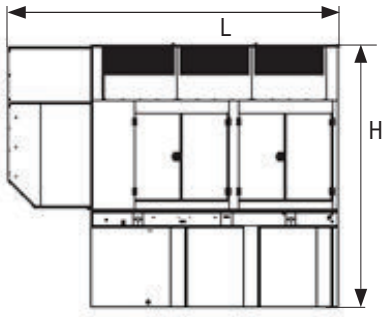


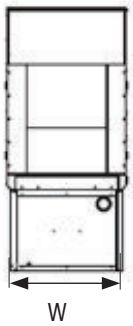












OPEN SET

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Tank & Open Set
NO TANK	-	154.4 (3923) x 71 (1803) x 67 (1702)	10580 (4799)
10	334	158.5 (4026) x 71 (1803) x 81 (2057)	12255 (5559)
32	1001	158.5 (4026) x 71 (1803) x 103 (2616)	13180 (6978)
32	1001	228 (5791) x 71 (1803) x 92 (2337)	13730 (6228)
64	2002	290 (7366) x 71 (1803) x 103 (2616)	15430 (6999)

STANDARD ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) – Enclosure Only	
			Steel	Aluminum
NO TANK	-	207.4 (5268) x 71 (1803) x 80 (2032)	1999 (907)	869 (394)
10	334	207.4 (5268) x 71 (1803) x 94 (2388)		
32	1001	207.4 (5268) x 71 (1803) x 116 (2946)		
32	1001	228 (5791) x 71 (1803) x 105 (2667)		
64	2002	290 (7366) x 71 (1803) x 116 (2946)		

LEVEL 1 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only	
			Steel	Aluminum
NO TANK	-	247.5 (6285) x 71 (1803) x 80 (2032)	2782 (1262)	1291 (586)
10	334	247.5 (6285) x 71 (1803) x 94 (2388)		
32	1001	247.5 (6285) x 71 (1803) x 116 (2946)		
32	1001	247.5 (6285) x 71 (1803) x 105 (2667)		
64	2002	290 (7366) x 71 (1803)x 116 (2946)		

LEVEL 2 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only	
			Steel	Aluminum
NO TANK	-	207.4 (5268) x 71 (1803) x 114 (2899)	3330 (1510)	1522 (692)
10	334	207.4 (5268) x 71 (1803)) x 128 (3251)		
32	1001	207.4 (5268) x 71 (1803) x 150 (3810)		
32	1001	228 (5791) x 71 (1803) x 139 (3531)		
64	2002	290 (7366) x 71 (1803) x 150 (3810)		

* All measurements are approximate and for estimation purposes only. Sound dBA can be found on the sound data sheet. Enclosure Only weight is added to Tank & Open Set weight to determine total weight.

SPEC SHEET

Generac Power Systems, Inc. | P.O. Box 8 | Waukesha, WI 53187
P: (262) 544-4811

Part No 0197160SBY
Rev. D 09/21/15

APPENDIX F

Appendix G1: Cooling Tower Visible Plume

RWDI# 2204908

Stericycle 2022 ESDM Update

Location	Toronto

Cooling Tower Specifications										Information Per Cell				Total Exit Area for Unit (m^2)	Total Exit Area for Unit type (m^2)	Total Exit Area for Group (m^2)
Description / Group Name	Source ID	Group [1]	Make / Manufacturer	Quantity of Units	Number of Cells in Unit	Total Cells	Total Cells in Group	Air Flow (total for entire group) (cfm)	(m^3/s)	Fan Diameter (m)	Length (m)	Width (m)	Area (m^2)			
BAC 33803-GS Cooling Tower	CT1	1	BAC	1	1	1	1	220150	104	3.35	-	-	8.81	8.81	8.81	8.81

Equations
$L=9.81*(Ro/u)^2*\{(\rho_a-\rho)/\rho_a\}$
$Xo=\{(2/1.05)*Ro^3/L\}^{0.5}$
X=(T-Ta)/(To-Ta)
$Xp=Xo*X^{-0.75}$

Atmospheric Conditions for the Site				
Parameter	Definition	Value	Units	Notes
To	Temperature of air leaving tower (°C)	78	°F	Value from specifications
	From Manufacturer's Specs for wet bulb temperature	25.6	°C	
Ta	Mean January Temperature for closest city	-5.5	°C	Mean January Temperature for Toronto - Provided by MECP Cooling Tower Guideline
		22.1	°F	
T	From Psychrometric Chart provided in MECP Cooling Tower Guideline	-4.0	°C	From Psychrometric Chart provided in MECP Cooling Tower Guideline
		24.8	°F	
Pa	Atmospheric pressure	101,325	Pa	Assumed value
u	Average wind speed at point of discharge	5	m/s	Assumed value based on MECP Cooling Tower Guideline
R	Ideal gas law constant	8.314	L kPa mol^{-1} K^{-1}	
MW	Molecular weight of air	28.97	g / mol	
%RH	Mean January relative humidity for nearest city	80%		From MECP mean January temperatures and humidities (Table 1)
Psat	Saturation vapor pressure at Ta using Goff-Gratch equation	405	Pa	See "Vapor Pressure" Sheet
P_{H2O}	Partial pressure of water in air (P_{H2O} = %RH*Psat)	324	Pa	
H	Humidity at %RH and Ta (H = 18.02*P_{H2O}/[28.97*(Pa-PH2O)]) - Ideal Gas Law	0.0020	g H2O/g dry air	
Hs	Specific humidity at Ta and %RH (Hs = H*28.97*Pa/8.3145*Ta) - Ideal Gas Law	2.64	g H2O/m^3 dry air	= H x MW x Pa / R / (Ta + 273.15)
Va	Specific volume of dry air at ambient conditions	12.13	ft^3/lb	From Perry's handbook - see "Specific Volumes" Sheet
Vas	Specific volume of water vapour in saturated air at ambient conditions	0.047	ft^3/lb	From Perry's Handbook - see "Specific Volumes" Sheet
Vaw	Specific volume of dry air and water vapour at ambient conditions	12.14	ft^3/lb	= Va + Vaw * %RH
Vs	Specific volume of dry air and water vapour at cooling tower temperature	14.00	ft^3/lb	From Perry's Handbook - see "Specific Volumes" Sheet
ρa	Density of dry air and water vapour at ambient conditions	0.082	lb/ft^3	= 1/Vaw
ρ	Density of air leaving tower (P = 1/Vs)	0.071	lb/ft^3	= 1/Vs
X	(X = [T - Ta]/[To - Ta])	0.048	–	

LENGTH OF VISIBLE PLUME, L

Description / Group Name	Name	Equivalent Radius for Group of Units Ro (m)	L (m)	Xo (m)	Length of Visible Plume Xp (m)	Distance to Nearest Receptor [2] (m)	Receptor Description
BAC 33803-GS Cooling Tower	CT1	1.68	0.15	7.81	**77**	800	Highway 407

Notes:

[1] Cooling Towers are treated as being grouped if all towers in the group "lie within a two-stack diameter radius of the middle of the group", as per ASHRAE 2007 guidance.

[2] Distance to nearest receptor is the distance to the point of impingement (typically the nearest major roadway).

Appendix G2: Visible Plume Sample Calculations

RWDI# 2204908

Stericycle 2022 ESDM Update

The following describes the detailed calculations for fogging emissions from the cooling towers, based on the Ministry of the Environment and Climate Change's Cooling Tower Guideline.

This sample calculation is based on source CT1 (BAC), From Cooling tower group 1.
The representative location for meteorological conditions is Toronto.

Calculation 1 - Density of ambient air & air leaving the tower, ρ_a & ρ

$$\rho = \frac{1}{(V_S)}$$

Where;

To =	25.6	ºC	= Temperature of air leaving tower (ºC) - From Manufacturer's Specs for wet bulb temperature;
Vs =	14.0	ft³/lb	= Specific volume at cooling tower temperature - From Perry's Handbook for To
ρ =	1 / 14	lb/ft³	= Density of ambient air & air leaving the tower (= 1/Vs)
ρ =	0.071	lb/ft³	

$$\rho_a = \frac{1}{(V_{aw})}$$

Where;

$$V_{aw} = V_a + \%RH \times V_{as}$$

and,

%RH =	80%		= Relative Humidity - From MECP mean January temp. and humidities (Table 1 of Cooling Tower Guideline);
T_a =	-5.5	ºC	= Mean January Temperature for Toronto
Va =	12.13	ft³/lb	= Specific volume of ambient air - From Perry's handbook for Ta
Vas =	0.047	ft³/lb	= Specific volume of water vapour in saturated air - From Perry's handbook for Ta
Vaw =	12.13 + 0.8 x 0.0468		
Vaw =	12.17	ft³/lb	

Therefore,

ρ_a =	1 / 12.17	lb/ft³
ρ_a =	0.082	lb/ft³

Calculation 2 - Scaling Length, L

$$L = g \times \left(\frac{R_O}{u}\right)^2 \times \left(\frac{(\rho_a - \rho)}{\rho_a}\right)$$

Where;

g =	9.81	m/s²	= Gravitational constant
Ro =	1.68	m	= Equivalent fan radius for the 1 cooling tower(s) in Group 1;
u =	5	m/s	= Wind speed - typical based on MECP guidance;
ρa =	0.082	lb/ft³	= Density of ambient air - as above (Calculation 1); and,
ρ =	0.071	lb/ft³	= Density of air leaving the tower - as above (Calculation 1).

L = 9.81 x [(1.68)/(5)]² x [(0.082 - 0.071)/(0.082)]
L = 0.15 m

Calculation 3 - Initial Length of Visible Plume, X_o

$$X_O = \left[\left(\frac{2}{1.05}\right) \bullet \left(\frac{R_O{}^3}{L}\right)\right]^{0.5}$$

Where;

L =	0.1477	m	= Parameter calculated in Calculation 2
R_o =	1.68	m	= Equivalent fan radius for the 1 cooling tower(s) in Group 1;

X_o = [(2/1.05) x (1.68³/0.148)]^0.5
X_o = 7.8 m

Calculation 4 - Determine Temperature from Psychometric chart (°C), T

The first point on the chart (Point A) would be the temperature of air leaving the tower (T_O):

To = 25.6 °C = Temperature of air leaving the tower

As the tower is in the Toronto region, the ambient temerature would be:

Ta = -5.5 °C = Mean ambient January temperature for Toronto

The relative humidity would be:

%RH = 80% = Mean ambient January relative humidity for Toronto;

Using the Goff-Gratch equation at Ta, the saturation vapor pressure would be:

Psat = 405 Pa = Saturation vapor pressure at Ta;

While;

P_{H2O} = %RH x Psat Pa = Partial Pressure of water in air

P_{H2O} = 324.4 Pa = Partial Pressure of water in air

And;

Pa = 101,325 Pa = Atmospheric pressure

Based on these values the humidity can be determined:

$$H = \frac{(18.02 \times P_{H2O})}{28.97(P_a - P_{H2O})}$$

H = 0.0020 g H2O/g dry air

Also the specific humidity can be determined:

$$H_S = \frac{(H \times 28.97 \times Pa)}{(8.3145 \times (T_a + 237.15))}$$

Hs = 2.64 g H2O/m³ dry air

The coordinates of (T_a, H_S) constitute Point B on the chart.
The two points (A & B) are joined, the location where this line crosses the saturation curve of the chart is Point C.
The temperature at Point C is the Temperature value needed to perform the plume length calculation, therefore,

T = -4.0 °C = Temperature from Psychrometric chart

Calculation 5 - Plume Length Temperature Correction, X

$$X = \frac{(T - T_a)}{(T_O - T_a)}$$

Where;

T_O = 25.6 °C = Temperature of air leaving the tower

Ta = -5.5 °C = Mean ambient January temperature for Toronto

T = -4.0 °C = Temperature from Psychrometric chart

X = [-4 - (-5.5)]/[25.6 - (-5.5)]

X = 0.048

Calculation 6 - Length of Visible Plume X_p

$$X_P = X_O \times X^{-0.75}$$

Where,

X_O = 7.82 m = Initial Length of Visible Plume
X = 0.048 = Parameter calculated in Calculation 5 (dimensionless)

X_P = 7.82 x (0.048)^-0.75
X_P = 77 m

Thus the length of the visible plume is 77m

Appendix G3: Cooling Tower Particulate Emissions

RWDI# 2204908

Stericycle 2022 ESDM Update

Source Label	Tower Size (cooling ton)	Circulating Water Flow [1]		Drift Loss [2]			Total Dissolved Solids [3]		PM-10 Emission Factor	PM-10 Emission Rate [4]
		(gal/min)	(L/s)	(%)	(L/s)	(g/s)	(ppm)	(g/L)	(g/L)	(g/s)
CT1	405	1215	77	0.02%	0.0153	15.3	1,000	1.0	2.0E-04	1.53E-02
									Total =	1.53E-02

Notes:

[1] Circulating water flow based on typical cooling tower ratio of 3 gal/min per cooling ton.

[2] Drift loss based on US-EPA AP-42 (Chapter 13.4) estimated Total Liquid drift and density of water (1 kg/L).

[3] Total dissolved solids (TDS) based on manufacturer's (BAC) maximum allowable TDS concentration in cooling water (1,000 ppm).

[4] PM emissions assume 100% of TDS are emitted as PM-10 once water component evaporates off.

Example Calculation for *(CT1)*

Circulating Water Flow =	77	L/s		
Drift Loss =	0.020%			
Water Density =	1,000	g/L		
TDS concentration =	1,000	ppm	=	1.00E-03 g/g

The particulate emission calculation is:

PM-10 Emissions = circulating water flow (L/s) x drift loss (%) x water density (g/L) x TDS conc (g/g)

$$\text{PM-10 Emissions} = \frac{77\ \text{L}}{1\ \text{s}} \quad \frac{0.020\%}{} \quad \frac{1{,}000\ \text{g}}{1\ \text{L}} \quad \frac{1.00\text{E-}03\ \text{ppm}}{}$$

PM-10 Emissions = 0.015330919 g/s

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OCT 18 2000

SUBMITTAL DATA FORM

CUSTOMER	MEDICAL WASTE MANAGEMENT, INC. 95 DEERHURST DRIVE BRAMPTON, ONTARIO L6T 5R7	DATE P.O. NO. B.A.C. NO. MODEL NO. SHIP DATE	10/17/00 C000143201 33803-GS 12/15/00

PROJECT:	MEDICAL WASTE MANAGEMENT, INC.
ENGINEER:	GYRPHON INTERNATIONAL ENGINEERING – ST. CATHARINES, ON
B.A.C. REP:	H.E. RIECKELMAN, INC. – MISSISSAUGA, ON

COOLING TOWER

ALL INFORMATION IS PER UNIT

CERTIFIED CAPACITY: 1215 USGPM OF WATER FROM 105°F TO 80°F AT 73°F ENTERING WET BULB

FAN MOTOR(S): (1) 60 HP, 1800/900 RPM, 3 PHASE, 60 HERTZ, SUITABLE 575 VOLTS, TWO SPEED, ONE WIND, TEFC ENCLOSURE. FAN DRIVES BASED ON 0" ESP. FAN MOTOR IS EXTERNALLY MOUNTED.

NOTE:

- **Two speed fan motors and/or Energy Miser Fan Systems require a starter that incorporates a 15 second time delay when switching from high to low speed.**

3 COPIES OF SUBMITTAL PACKAGE

DRAWINGS	FEATURES
UNIT PRINT (BAC-19048A)	REMOTE SUMP APPLICATION, LESS FLOAT VALVE AND STRAINER
STEEL SUPPORT (BAC-18623A)	EXTERNALLY MOUNTED MOTOR
CONDUIT / WIRING (BAC-18658A & BAC-7092A)	GEAR DRIVEN FAN SYSTEM
OUTLET LOCATION (BAC-18783B)	TOP WATER INLET WITH BALANCING VALVES
INLET ARRANGEMENT (BAC18669B)	MECHANICAL VIBRATION CUTOUT SWITCH
LADDER (BAC-18662A)	EXTENDED LUBRICATION LINES
VIBRATION CUTOUT LOCATION / WIRING (BAC-17491A & BAC-11493A)	ALUMINUM LADDER WITH GALVANIZED STEEL SAFETY CAGE AND HAND RAILS TO (TO SHIP LOOSE)

THANK YOU FOR YOUR ORDER ACCEPTED AT THE B.A.C. GEORGETOWN, CANADA PLANT ON: SEPTEMBER 27, 2000

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P.O. BOX 317, PAXTON, ILLINOIS 60957 / TELE: (217) 379-2311 / FAX: (217) 379-3522
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Terms and Conditions of Sale

Pricing: Prices shall remain firm, provided this order is released for fabrication within six (6) months after receipt of the order by Seller and shipped within Seller's standard published factory leadtimes. For each additional month or portion thereof, one percent (1%) of the price per month will be added for a period not to exceed six (6) months, after which the price in effect at time of shipment will apply. In the event that Buyer requests for its convenience that Seller delay delivery of products subject to this order beyond the scheduled delivery date, pricing shall be subject to the same adjustment.

Payments: If the Buyer shall fail to make any payments in accordance with the terms and conditions of sale, the Seller, in addition to its other rights and remedies but not in limitation thereof, may, at its option, without prior notice, cancel this order as to any undelivered products or defer shipments or deliveries hereunder, or under any other agreement between Buyer and Seller, except upon Seller's receipt of cash before shipment or such security as Seller considers satisfactory. Seller reserves the right to impose an interest charge (not exceeding the lawful maximum) on the balance of each invoice not paid on its due date for the period from the due date to the date of receipt of payment by Seller. In the event Buyer's failure to make timely payments to Seller results in Seller incurring additional costs, including but not limited to collection expenses and attorneys' fees, said costs shall be added to the amount due Seller from Buyer. Buyer shall have no right to any retainage and shall not withhold payment on Seller's invoice in any amount.

Taxes: Unless listed on the front (reverse) side of this document, prices do not include any federal, state or local sales, use or value-added taxes payable in connection with this order. All such taxes shall be paid by Buyer.

Allocation of Risk: Deliveries shall be considered made when the products subject to this order are loaded on the carrier. At such time, title to the goods and all risk of loss, damage or shortage shall pass to Buyer, and any claims based thereon must be filed by Buyer with the carrier.

Force Majeure: Seller shall under no circumstances be liable for any loss or damage resulting from delay or failure in the performance of its obligations under this contract to the extent that such performance is delayed or prevented by: fires, floods, war, riots, strikes, freight embargoes or transportation delays, shortage of labor, inability to secure fuel, material, supplies or power at current prices, or on account of shortages thereof; acts of God or of the public enemy; any existing or future laws or acts of the federal, state or local government (including specifically, but not exclusively, any orders, rules or regulations issued by any official or agency of any such government) affecting the conduct of Seller's business with which Seller in its judgment and discretion deems it advisable to comply as a legal or patriotic duty, or to any case beyond the Seller's reasonable control.

Warranties: Seller warrants that the products sold under this contract shall be free from defects in material and workmanship for a period of twelve (12) months from the date of equipment startup or eighteen (18) months from the date of shipment , whichever occurs first. The following mechanical equipment components only are warranted against defects in materials and workmanship for a period of five (5) years from date of shipment: fans, fan shafts, bearings, sheaves, gearboxes, driveshafts, couplings, mechanical equipment supports and fan motors. Written notice of any defect shall be given to Seller immediately upon discovery by Buyer, and shall fully describe the claimed defect. Defective parts shall be repaired or replaced F.O.B. point of shipment, provided that inspection by Seller verifies the claimed defect(s). This shall be Buyer's exclusive remedy. **This warranty does not cover the costs of removing, shipping or reinstalling the equipment. Repairs made without the prior written approval of Seller shall void all warranties covering material and workmanship.** Any descriptions of the product(s) in the contract are for the sole purpose of identification and do not constitute a warranty. In the interest of product improvement, Seller reserves the right to change specifications and product design without incurring any liability therefor. The foregoing express warranties are the only warranties of Seller applicable to the product(s) sold under this contract. **All other warranties, whether verbal or written, and all warranties implied by law, including any warranties of merchantability or fitness for a particular purpose, are hereby excluded. Failure on the part of Buyer or of other parties to properly maintain the product(s) sold under this contract, or the operation of such product(s), by Buyer and/or other parties under conditions more severe than those for which such product(s) were designed, shall void all warranties covering materials and workmanship. Seller's warranties do not apply to defects in product(s) for which payment in full has not been received by Seller, and said warranties do not cover normal wear and tear or the erosion, corrosion and/or deterioration of the product(s) from unusual causes. No warranties by Seller shall apply to accessories manufactured by others,** inasmuch as they are warranted separately by their respective manufacturers, except as stated above. **Seller shall in no event be liable for consequential, incidental or special damages arising out of a breach of any of its warranties or of any other obligations hereunder.** Buyer assumes liability for and shall bear the costs of compliance with all laws, regulations, codes standards or ordinances applicable to the location, operation and maintenance of the product(s) sold under this contract, including those requirements pertaining to the distances between such product(s) and air-conditioning system duct intakes. No representative or agent of Seller is authorized to enlarge upon the express warranties of Seller.

Cancellation/Changes/Returns: Cancellation of or changes in any order by Buyer shall not be effective without Buyer's notice thereof received, agreed to, and confirmed in writing by Seller. If Seller, in its absolute discretion, approves Buyer's cancellation of an order, Buyer agrees to pay a reasonable cancellation charge. Seller's prior written consent must be obtained before Buyer returns any products, and when so returned will be subject to a handling charge and transportation costs payable by Buyer.

Indemnification: Buyer shall hold harmless and indemnify Seller from and against all liability, claims, losses, damages, and expenses (including attorneys' fees) for personal injury and property damage arising out of Buyer's improper unloading, handling, or use of the products subject to this order, and for Buyer's infringement of another's property rights.

Government Contracts: If Buyer's purchase order is for products to be used in the performance of a U.S. Government contract, those clauses of applicable procurement regulations mandatorily required by federal law to be included in U.S. Government subcontracts shall be incorporated herein by reference.

Export Transactions: Buyer shall comply with all applicable export laws and regulations of the U.S. Government, and shall hold harmless and indemnify Seller from and against all liability, damages, and expenses (including attorneys' fees) incurred by Seller as a result of Buyer's violation of any U.S. Government export and/or international antiboycott laws or regulations.

Agreement of Sale: Buyer's order is accepted on the terms and conditions stated herein and Seller's acceptance of Buyer's order is expressly made conditional upon Buyer's assent to such terms and conditions, including any of Seller's terms and conditions which may be additional to or different from those contained in Buyer's purchase order or otherwise. Such assent shall be deemed to have been given unless written notice of objection to any such terms and conditions (including inconsistencies between Buyer's purchase order and this acceptance) is given by Buyer to Seller promptly upon receipt of this acknowledgment. Any agreement or understanding, oral or written, which modifies or waives the terms and conditions herein (whether contained in Buyer's purchase order or other documentation) shall be deemed material and shall be rejected unless hereafter agreed to in writing and signed by Seller's authorized officer. Waiver by Seller of any breach or default hereunder shall not be deemed a waiver by Seller of any other or subsequent breach or default which may thereafter occur. Neither the rights nor the obligations of either Buyer or Seller are assignable without the prior written consent of the other party. This agreement of sale and all rights and obligations of Buyer and Seller shall be governed by and construed in accordance with the laws of the State of Maryland.

(Revised 05/16/97)

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SUBMITTAL DATA FORM

CUSTOMER	MEDICAL WASTE MANAGEMENT, INC. 95 DEERHURST DRIVE BRAMPTON, ONTARIO L6T 5R7	DATE P.O. NO. B.A.C. NO. MODEL NO. SHIP DATE	10/17/00 C000143201 33803-GS 12/15/00

PROJECT: ENGINEER: B.A.C. REP:	MEDICAL WASTE MANAGEMENT, INC. GYRPHON INTERNATIONAL ENGINEERING – ST. CATHARINES, ON H.E. RIECKELMAN, INC. – MISSISSAUGA, ON

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October 17, 2000

Baltimore Aircoil Company

Series 3000 Cooling Tower
Mechanical Specifications

G-235 (Z700 metric) Hot-Dip Galvanized Steel Structural Elements with FRP Casing Panels

Project Name:	Medical Waste Management, Inc.
Customer Name:	Medical Waste Management, Inc. - Brampton, ON
Purchase Order No.:	
Engineer Name:	Gryphon International Engineering - St. Catharines, ON
Model Number:	33803-GS
B.A.C. Serial No.:	C000143201

Unit Type:

Factory assembled, induced draft, crossflow cooling tower with vertical air discharge. Principal structural construction is of heavy gauge G-235 (Z700 metric) hot-dip galvanized steel angles and channels. The edges of the hot-dip galvanized steel components are given a protective coat of zinc-rich compound.

Thermal Performance:

Thermal performance is certified by the Cooling Technology Institute in accordance with CTI Certification Standard STD-201.

Quality Assurance:

Each unit is manufactured under closely-controlled conditions using standardized parts to ensure each unit is built precisely to the same high-quality design and construction standards. The design, manufacture, and business processes are ISO 9001 certified.

Cold Water Basin:

Constructed of heavy gauge G-235 (Z700 metric) hot-dip galvanized steel. Basin includes a depressed center section with drain/clean-out connection. Basin area under the fill sections are sloped toward the depressed center section for easy cleaning.

Connections:

All cold water basin connections four inches (4") (102 mm) and larger are both beveled for welding and grooved for mechanical coupling. Connections less than four inches (4") (102 mm) are provided with male pipe thread (MPT).

Water Level Control:

Water level control and strainer are omitted for remote sump application.

Casing:

Casing is constructed of fiberglass-reinforced polyester (FRP) panels.

Access Doors:

Hinged 34" X 35" (864 mm X 889 mm) access doors are provided on both side walls of the tower for access to eliminators and fan plenum section. The doors are made of G-235 (Z700 metric) hot-dip galvanized steel with an exterior overlay of fiberglass-reinforced polyester (FRP).

Air Inlet Louvers: Air inlet louvers are wave-formed, fiberglass-reinforced polyester (FRP), spaced to minimize air resistance and prevent water splash-out.

Water Distribution System: Two (2) 150# (68 kg) stud circle hot water inlet connections (per cell) are located at the top of the unit. A butterfly valve for each inlet connection is shipped loose for field mounting by others.

Hot Water Basins: Hot water distribution basins are open gravity type constructed of heavy gauge, G-235 (Z700 metric) hot-dip galvanized steel with G-235 (Z700 metric) hot-dip galvanized steel basin covers. Polypropylene metering orifices are provided to assure even distribution of water over the wet deck surface.

Wet Deck & Eliminators: The BACross® Wet Deck Surface and integral drift eliminators are formed from polyvinyl chloride (PVC). They are impervious to rot, decay, and fungus or biological attack and have a flame spread rating of 5 per ASTM Standard E84-77a. The eliminators are designed to effectively strip entrained moisture from the leaving airstream with a minimum of air resistance. This wet deck is suitable for a maximum entering water temperature of 120°F (48.8°C).

Gear Speed Reducer: Speed reducer is a right angle, gear drive designed specifically for cooling tower service. Spiral bevel or spiral bevel/helical gears are designed in accordance with the Cooling Tower Institute STD-111, "Gear Speed Reducers". All gears have a minimum service factor of 2.0 based on design fan horsepower and are for both forward and reverse operation. An oil level fill port and sight glass are located on the gear drive to facilitate routine inspection and maintenance. The gear drive motor(s), mounting base(s), and drive shaft(s) must be field installed. The drive shaft(s) must also be properly aligned after installation by qualified personnel to ensure satisfactory operation.

Composite Drive Shaft: The composite drive shaft is a high misalignment coupling designed for cooling tower applications. The male and female coupling tube halves are also made of compression molded composite material. Only the hubs and mounting hardware are galvanized steel.

Mechanical Support: The mechanical equipment support consists of a tubular steel assembly designed to maintain alignment of rotating parts during start-up and operating conditions.

Fan Shaft and Bearings: Fan(s) and steel fan shaft(s) are supported by heavy-duty, self-aligning, grease-packed, relubricatable ball bearings with special seals for protection against dust and moisture. All bearings are designed for minimum L10 life of 40,000 hours (280,000 hours average life).

TEFC Fan Motor(s): Fan motor(s) is totally enclosed, two speed, one wind, fan-cooled (TEFC) ball bearing type with 1.15 service factor, and suitable for outdoor service. It is mounted outside the moist discharge air stream.

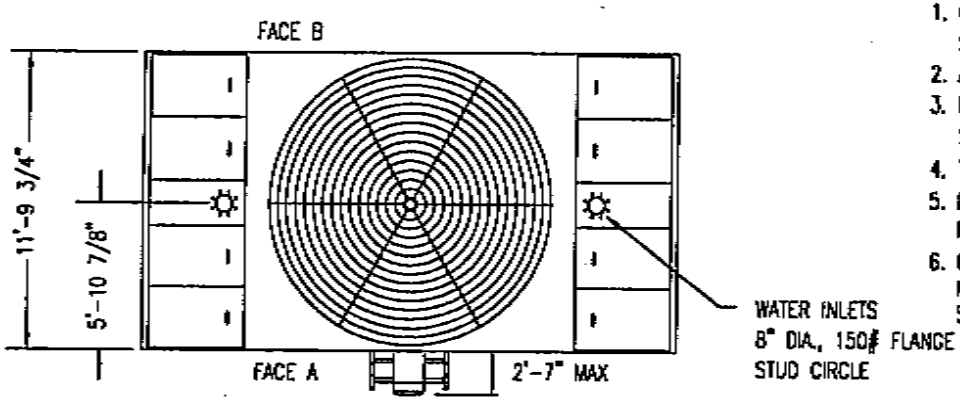
Fan and Fan Cylinder: Fan(s) are fixed pitch, heavy duty, cast aluminum, axial flow. The heavy gauge, G-235 (Z700) hot-dip galvanized fan cylinder(s) are designed for streamlined air entry and minimum tip clearances for maximum fan efficiency.

Fan Guard: A heavy gauge, hot-dip galvanized steel wire fan guard is provided over each fan cylinder.

Extended Lubrication Lines: Bearing lubrication lines are extended to grease fittings located on the face of the unit.

Vibration Cutout Switch: Each fan driver is equipped with a vibration cutout switch to prevent further catastrophic failure of fans once the failure begins to occur. The vibration switch(es) is mechanically tripped with a frequency range of 0 to 3,600 RPM and trip point of 0.2 to 2.0 g's. No input power is required. Switch rating is 15 amperes at 125 VAC or 480 VAC, 1/2 ampere at 125 Vdc and 1/4 ampere at 250 Vdc.

External Access: An aluminum ladder, galvanized steel safety cage, and perimeter safety railing constructed of 1-1/4" (32 mm) galvanized steel pipe are provided to access the top of the unit. These items meet pertinent OSHA standards and ship loose for field assembly and installation by others.



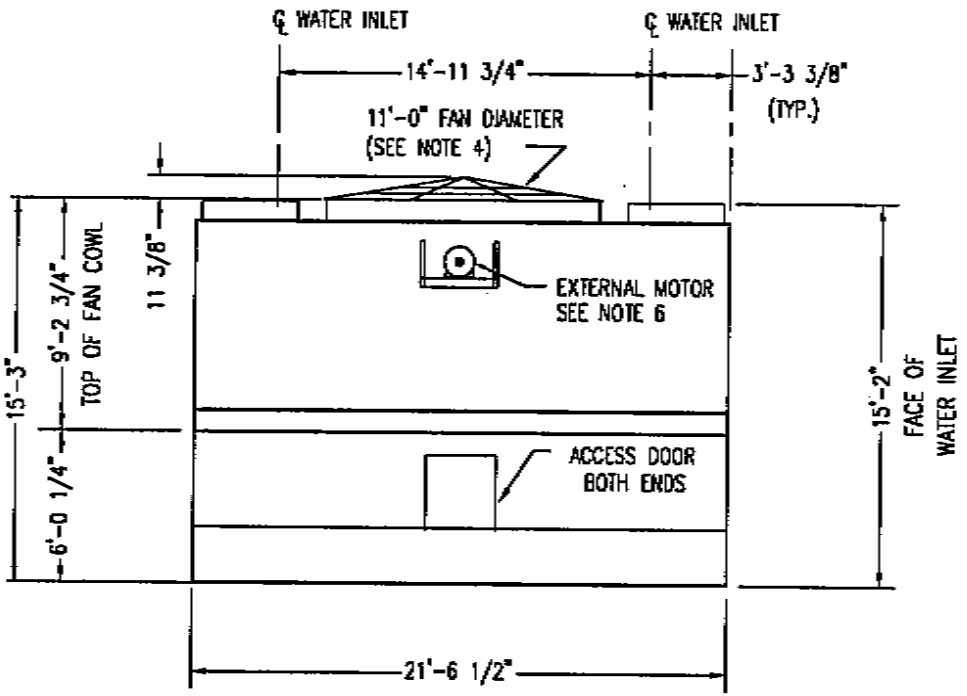
PLAN VIEW

NOTES:

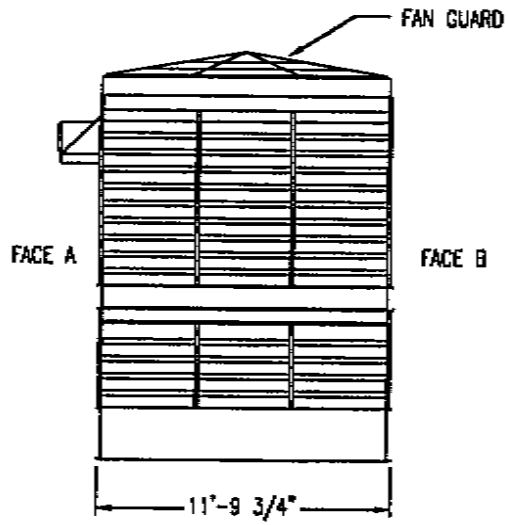
1. CONNECTIONS 3" & SMALLER ARE MPT. CONNECTIONS 4" & LARGER ARE GROOVED TO SUIT A MECHANICAL COUPLING AND BEVELED FOR WELDING.
2. ALL DIMENSIONS ARE IN FEET AND INCHES. WEIGHTS ARE IN POUNDS.
3. FOR WEIGHT LOADING AND SUPPORT REQUIREMENTS REFER TO THE SUGGESTED STEEL SUPPORT DRAWING.
4. THE AREA ABOVE THE DISCHARGE OF THE FAN MUST BE UNOBSTRUCTED.
5. REFER TO TOP WATER INLET DRAWING FOR DETAILS OF TOP WATER INLETS AND SUPPORTS. REFER TO BOTTOM WATER OUTLET DRAWING FOR DETAILS OF BOTTOM CONNECTIONS.
6. GEAR DRIVE MOTOR, MOUNTING BASE, AND DRIVE SHAFT MUST BE FIELD INSTALLED. DRIVE SHAFT MUST ALSO BE PROPERLY ALIGNED AFTER INSTALLATION BY QUALIFIED PERSONNEL TO ENSURE SATISFACTORY OPERATION.

MODEL NUMBER	SHIPPING WEIGHT	HEAVIEST SECTION	OPERATING WEIGHT
33707	12900	7740	34690
JE3707			
33758	~~12960~~	~~7800~~	~~34750~~
JE3758			
33803GS	13120	7960	34910
JE3803			

UPPER SECTION IS HEAVIEST SECTION



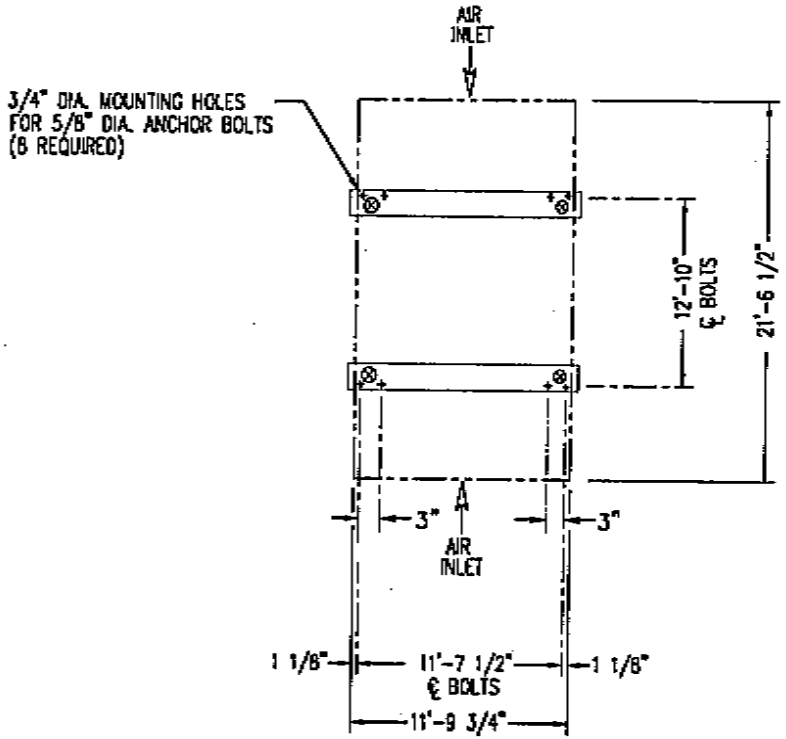
END ELEVATION (FACE A)



SIDE ELEVATION

UNIT WITH GEAR DRIVE AND EXT. MOTOR

B.A.C. ORDER NO: C000143201	BALTIMORE AIRCOIL COMPANY	SERIES 3000/JE COOLING TOWER TOP WATER INLET/BOTTOM OUTLET
DATE: 10/17/00		DRAWING NUMBER: BAC-19048A A



PLAN VIEW

MODEL NO.	SHIPPING WEIGHT (LBS)	OPERATING WEIGHT (LBS)	WEIGHT AT ⊗ (LBS)	WIND REACTIONS (30 PSF) MAX. VERT. REACTION AT ⊗ (LBS)	WIND REACTIONS (30 PSF) MAX. HORIZ. REACTION AT ⊗ (LBS)	SEISMIC REACTIONS (UBC-ZONE 4) MAX. VERT. REACTION AT ⊗ (LBS)	SEISMIC REACTIONS (UBC-ZONE 4) MAX. HORIZ. REACTION AT ⊗ (LBS)
33707 JE3707	12900	34690	8673	+/- 3285	2465	+/- 6150	5235
~~33758 JE3758~~	~~12960~~	~~34750~~	~~8688~~	~~+/- 3285~~	~~2465~~	~~+/- 6150~~	~~5235~~
33803 JE3803	13120	34910	8728	+/- 3285	2465	+/- 6150	5235

WIND OR SEISMIC REACTIONS ARE ADDITIVE TO OPERATING WEIGHT.

NOTES:

1. SUPPORTING STEELWORK AND ANCHOR BOLTS TO BE DESIGNED AND FURNISHED BY OTHERS.
2. ALL SUPPORTING STEEL MUST BE LEVEL AT TOP.
3. BEAMS SHOULD BE SELECTED IN ACCORDANCE WITH ACCEPTED STRUCTURAL PRACTICE, MAXIMUM DEFLECTION OF BEAM UNDER UNIT TO BE 1/360 OF SPAN, NOT TO EXCEED 1/2 INCH.
4. ALTERNATELY THE TOWER MAY BE SUPPORTED ON COLUMNS AT THE ANCHOR POINTS SHOWN. COLUMNS MUST PROVIDE A MINIMUM OF 12" X 12" BEARING SURFACE UNDER EACH OF THE CONCENTRATED LOAD POINTS.
5. IF VIBRATION ISOLATION RAILS ARE USED BETWEEN TOWER AND SUPPORTING STEEL, BE CERTAIN TO ALLOW FOR THE LENGTH OF THE VIBRATION RAILS WHEN DETERMINING LENGTH OF SUPPORTING STEEL. VIBRATION RAIL LENGTH AND MOUNTING HOLE LOCATION MAY DIFFER FROM THOSE OF THE COOLING TOWER. REFER TO VIBRATION ISOLATOR DRAWINGS FOR THIS DATA.
6. OPERATING WEIGHT AND WEIGHT LOADING ARE FOR TOWER WITH WATER LEVEL IN PAN AT OVERFLOW.
7. WEIGHTS SHOWN ARE FOR STANDARD UNIT. SOME ACCESSORIES MAY REQUIRE WEIGHT ADDS. SEE RESPECTIVE ACCESSORY SUBMITTAL DRAWING FOR WEIGHT ADD.

B.A.C. ORDER NO: C000143201

DATE: 10/17/00

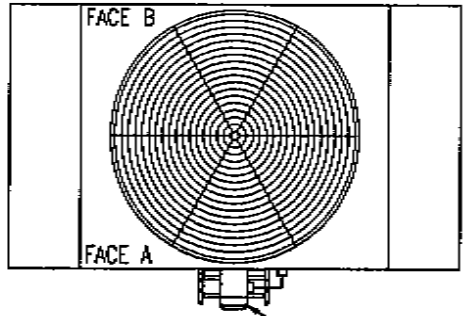
BALTIMORE AIRCOIL COMPANY

SERIES 3000/JE PREMIER
SUGGESTED STEEL SUPPORT-PLAN A

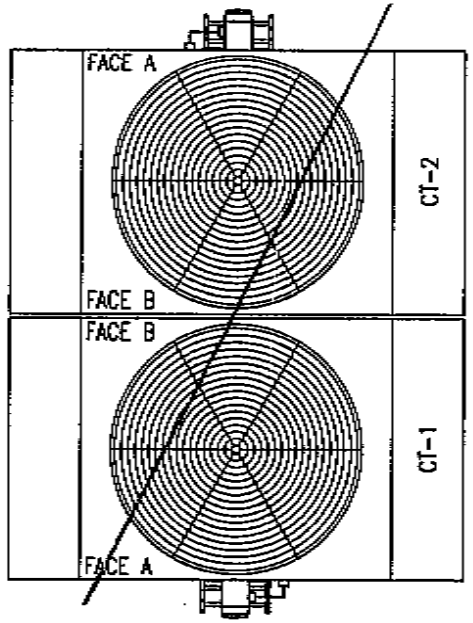
DRAWING NUMBER: BAC-18623A

A

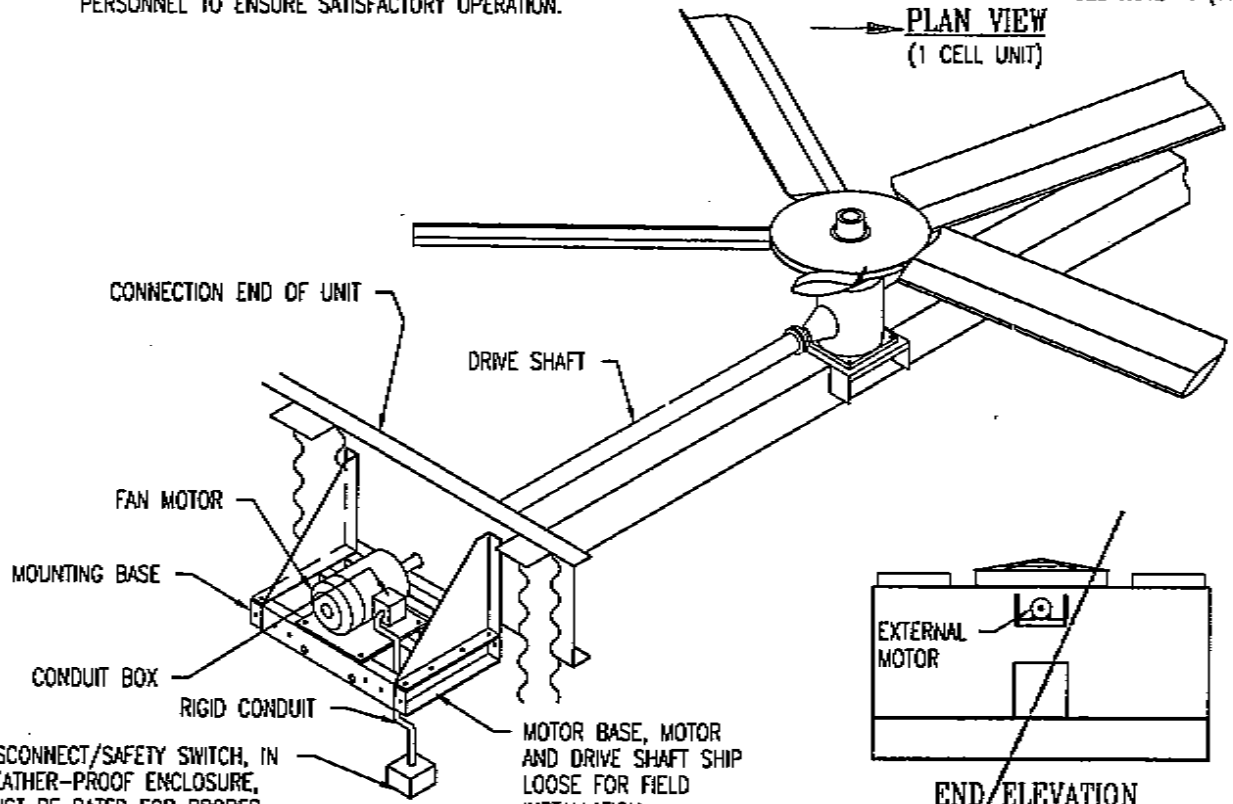
NOTES:
1. CONDUIT MUST BE WATER TIGHT AND PITCHED DOWNWARD TO ALLOW CONDENSATION TO DRAIN AWAY FROM FAN MOTOR CONDUIT BOX.
2. ALL WIRING MUST CONFORM TO LOCAL AND NATIONAL ELECTRICAL CODES.
3. RIGID CONDUIT MUST TURN DOWN TO JUNCTION BOX.
4. EXTERNAL MOTOR, MOUNTING BASE AND DRIVE SHAFT MUST BE FIELD INSTALLED. DRIVE SHAFT MUST ALSO BE PROPERLY ALIGNED AFTER INSTALLATION BY QUALIFIED PERSONNEL TO ENSURE SATISFACTORY OPERATION.



PLAN VIEW
(1 CELL UNIT)

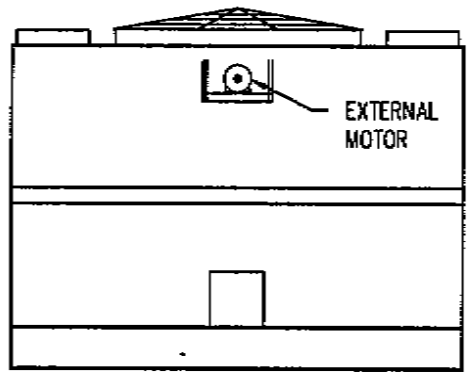


PLAN VIEW
(2 CELL UNIT)



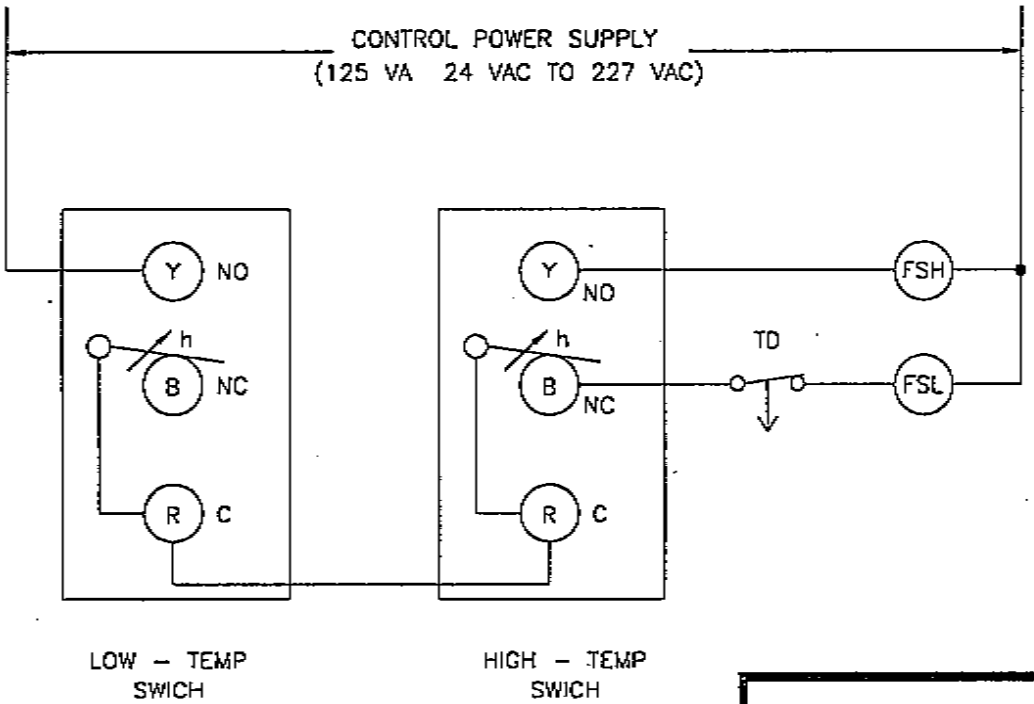
EXTERNAL FAN MOTOR DETAIL

END ELEVATION
MODELS 33235 THRU 33646
MODELS JE3235 THRU JE3646



END ELEVATION
MODELS 33707 THRU 331055
MODELS JE3707 THRU JE31055

B.A.C. ORDER NO: C000143201	BALTIMORE AIRCOIL COMPANY	SERIES 3000 / JE PREMIER MOTOR LOCATION/CONDUIT INSTALLATION
DATE: 10/17/00		DRAWING NUMBER: BAC-18658A



NOTES:
1. A 15 SECOND TIME DELAY IS REQUIRED BEFORE ENERGIZING THE LOW SPEED CIRCUIT WHEN SWITCHING FROM HIGH SPEED.
2. THE LOW SPEED AND HIGH SPEED FAN CIRCUITS SHOULD BE WIRED SUCH THAT BOTH FAN CONTROL CIRCUITS DO NOT ENERGIZE AT THE SAME TIME.
3. AT LOW SPEED, LOW TEMPERATURE SWITCH WILL BE IN NORMALLY OPEN POSITION AND HIGH TEMPERATURE SWITCH WILL BE IN NORMALLY CLOSED POSITION. AT HIGH SPEED, BOTH SWITCHES WILL BE IN NORMALLY OPEN POSITIONS.

SYMBOL	DESCRIPTION
FSH	HIGH SPEED FAN CONTROL CONTACTOR COIL
FSL	LOW SPEED FAN CONTROL CONTACTOR COIL
NO	NORMALLY OPEN CONTACT
NC	NORMALLY CLOSED CONTACT
C	COMMON
TD	TIME DELAY CONTACTOR COIL (NORMALLY CLOSED – INSTANT OPEN, TIME CLOSED DELAY OFF)

DANGER – POTENTIAL HIGH VOLTAGE HAZARD

WHEN A POWER FACTOR CORRECTION CAPACITOR IS USED WITH THE LOW SPEED MOTOR OF THE ENERGY MISER FAN SYSTEM, THE POWER FACTOR CORRECTION CAPACITOR MUST BE DISCONNECTED FROM THE LOW SPEED MOTOR POWER CIRCUIT WHEN THE LOW SPEED MOTOR IS DE-ENERGIZED. THIS IS NECESSARY IN ORDER TO PREVENT THE POWER FACTOR CORRECTION CAPACITOR FROM ALLOWING THE LOW SPEED MOTOR TO ACT AS A GENERATOR AND PRODUCE HIGH VOLTAGES IN THE LOW SPEED MOTOR CIRCUIT WHEN THE HIGH SPEED MOTOR IS OPERATING. THEREFORE, THE LOW SPEED MOTOR POWER FACTOR CORRECTION CAPACITOR MUST BE WIRED TO THE LOW SPEED MOTOR POWER CIRCUIT THROUGH A SET OF NORMALLY OPEN CONTACTS WHICH WILL DISCONNECT THE CAPACITOR FROM THE POWER CIRCUIT WHEN THE LOW SPEED MOTOR STARTER CIRCUIT IS DE-ENERGIZED, i.e., WHEN THE LOW SPEED MOTOR IS TURNED OFF.

TYPICAL WIRING DIAGRAM FOR TWO SPEED MOTOR OR ENERGY-MISER® FAN SYSTEM USING TWO SPDT THERMOSTATS

(ALL COMPONENTS AND WIRING SUPPLIED BY OTHERS)

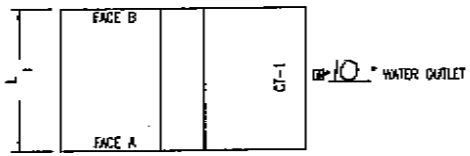
B.A.C.
ORDER NO: C000143201

DATE: 10/17/00

BALTIMORE AIRCOIL COMPANY

DRAWING NUMBER:
BAC-7092 A

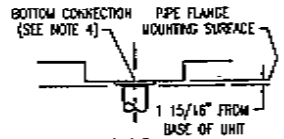
K



PLAN VIEW OF 1-CELL UNIT

TABLE-1 CONNECTION LOCATIONS

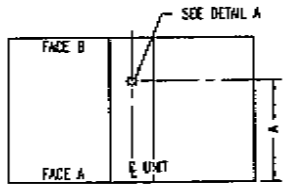
MODEL NUMBER	A
33235 THRU 33315	5'-10"
JE3235 THRU JE3315	
33341 THRU 33424	6'-9 1/4"
JE3341 THRU JE3424	
33427 THRU 33485	8'-8"
JE3427 THRU JE3485	
33491 THRU 33646	8'-8"
JE3491 THRU JE3646	
33707 THRU 33803	8'-8"
JE3707 THRU JE3803	
33813 THRU 33860	8'-8"
JE3813 THRU JE3860	
33935 THRU 334055	8'-9 1/8"
JE3935 THRU JE34055	



DETAIL A
ELEVATION VIEW
BOTTOM OUTLET

TABLE-2 MAXIMUM FLOW RATE PER PAN BOTTOM CONNECTIONS (GPM)

CONN. SIZE	WATER OUTLET
6"	350
8"	600
10"	1250
12"	1700
14"	2300
16"	3000
16"	3200
20"	4650



BOTTOM OUTLET

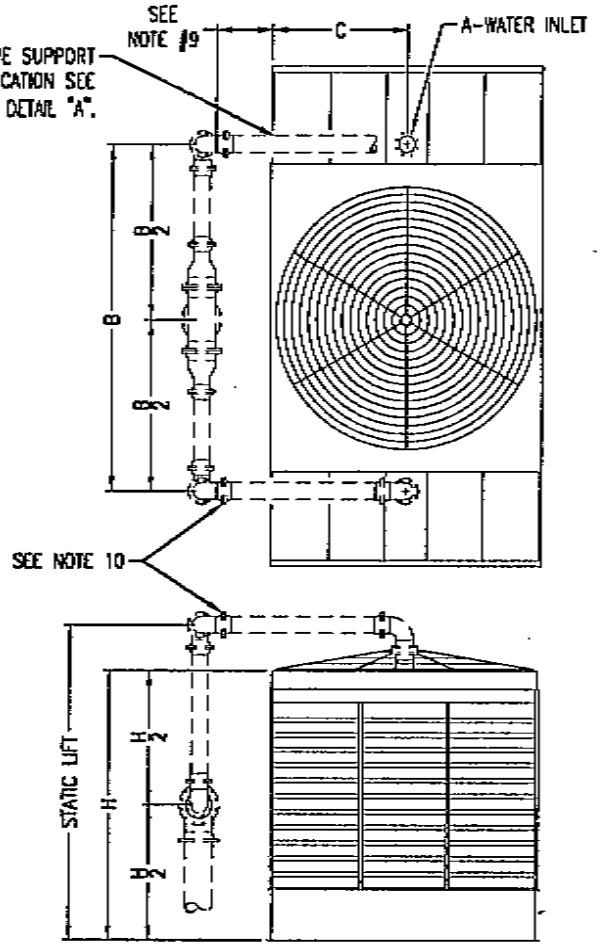
TABLE-3 CELL FACE LOCATION

MODEL NUMBER	L
33235 THRU 33315	7'-9 5/8"
JE3235 THRU JE3315	
33341 THRU 33424	9'-9 1/4"
JE3341 THRU JE3424	
33427 THRU 33860	11'-9 3/4"
JE3427 THRU JE3850	
33935 THRU 334055	12'-11 3/8"
JE3935 THRU JE34055	

CONNECTION LOCATION
TYPICAL EACH CELL
(SEE TABLES 1 & 2)

NOTES:
1. DO NOT SUPPORT PIPING FROM COOLING TOWER. ALL NECESSARY PIPING SUPPLIED BY OTHERS.
2. FIELD PIPING SHOULD BE FABRICATED AT TIME OF INSTALLATION. PRE-FABRICATION OF PIPE WORK IS NOT RECOMMENDED.
3. FLOW RATES ARE GIVEN FOR REMOTE SUMP (GRAVITY FLOW) APPLICATIONS. THEY ARE BASED ON THE MAXIMUM HEAD AVAILABLE TO MOVE WATER FROM THE BASIN INTO THE OUTLET PIPING.
4. THE BOLT HOLE PATTERN IS DRILLED TO MATCH THE BOLT HOLE PATTERN OF A 150 POUND FLAT FACE AMERICAN STANDARD FLANGE. THE FLAT FACE FLANGE AND FULL FACE GASKET IS TO BE FURNISHED BY OTHERS FOR MATING WITH THE UNIT.

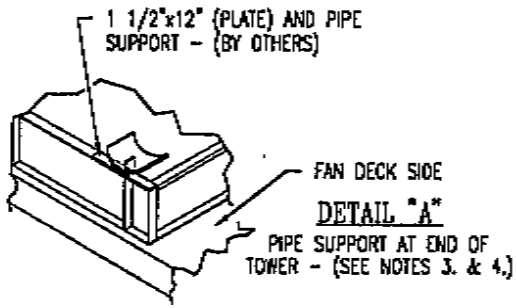
B.A.C. ORDER NO: C000143201	BALTIMORE AIRCOIL COMPANY	SERIES 3000/ JE PREMIER BTM OUTLET- REMOTE SUMP
DATE: 10/17/00		DRAWING NUMBER: BAC-18783B



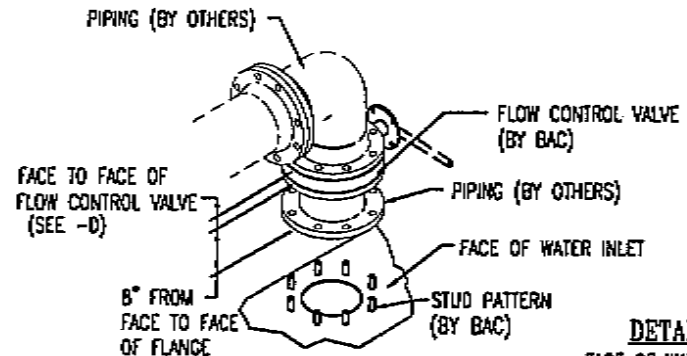
NOTES:

1. ALL PIPING SHOWN BY DASHED LINES IS TO BE FURNISHED BY OTHERS. REFER TO UNIT CERTIFIED DRAWING FOR DETAILS OF THE COOLING TOWER.
2. FIELD PIPING SHOULD BE FABRICATED AT THE TIME OF UNIT INSTALLATION. PRE-FABRICATION OF PIPE WORK IS NOT RECOMMENDED.
3. SUPPLY PIPING TO COOLING TOWER INLET CONNECTIONS MAY BE SUPPORTED FROM TOWER STRUCTURE ONLY AT THE PIPE SUPPORT SUPPORT LOCATIONS SHOWN. PIPING MUST NOT BE SUPPORTED BY THE TOWER INLET CONNECTIONS. PIPING OUTSIDE OF THE PERIMETER OF THE TOWER MUST NOT BE SUPPORTED FROM THE TOWER.
4. SUPPLY PIPING SUPPORTS MUST BE DESIGNED TO REST ON THE WALLS OF THE HOT WATER DISTRIBUTION BASINS AT LOCATIONS INDICATED. (SEE DETAIL "A").
5. ALL PIPING SUPPORTS TO BE DESIGNED, FURNISHED AND INSTALLED BY OTHERS.
6. MAXIMUM DIAMETER OF INLET HEADER PIPING THAT CAN BE SUPPORTED BY THE COOLING TOWER WATER DISTRIBUTION BASINS IS 14 INCHES.
7. REQUIRED STATIC PUMPING HEAD FROM BASE OF COOLING TOWER IS INDICATED BY STATIC LIFT DIMENSION.
8. WHEN TOWER IS EQUIPPED WITH SAFETY RAILING PACKAGE, INLET PIPING SHOULD BE DESIGNED TO CLEAR THE RAILING. ADJUST STATIC LIFT AS REQUIRED.
9. PROVIDE ADEQUATE SPACE BETWEEN COOLING TOWER AND RISER PIPING TO ALLOW FOR ENTRY INTO THE COOLING TOWER ACCESS DOORS.
10. FOR UNITS BEING INSTALLED ON VIBRATION ISOLATION RAILS, FLEXIBLE CONNECTIONS SHOULD BE INSTALLED IN THE PIPING JUST BEFORE THE TOWER PERIMETER.

MODEL NO.	A INLET SIZE	B	C	D	H
33235 THRU 33315 JE3235 THRU JE3315	6"	11'-5 3/4"	3'-10 13/16"	2 1/8"	9'-9 3/4"
33341 THRU 33424 JE3341 THRU JE3424	8"	13'-5 3/4"	4'-10 5/8"	2 1/2"	9'-9 3/4"
33427 THRU 33485 JE3427 THRU JE3485	8"	14'-11 3/4"	5'-10 7/8"	2 1/2"	9'-9 3/4"
~~33491 THRU 33646~~ ~~JE3491 THRU JE3646~~	~~8"~~	~~14'-11 3/4"~~	~~5'-10 7/8"~~	~~2 1/2"~~	~~11'-9"~~
33707 THRU 33803 JE3707 THRU JE3803	8"	14'-11 3/4"	5'-10 7/8"	2 1/2"	15'-2"
~~33813 THRU 33860~~ ~~JE3813 THRU JE3860~~	~~8"~~	~~14'-11 3/4"~~	~~5'-10 7/8"~~	~~2 1/2"~~	~~17'-10"~~
33935 THRU 331055 JE3935 THRU JE31055	10"	17'-5 3/4"	6'-11 9/16"	2 1/2"	17'-10"



DETAIL "A"
PIPE SUPPORT AT END OF TOWER - (SEE NOTES 3. & 4.)

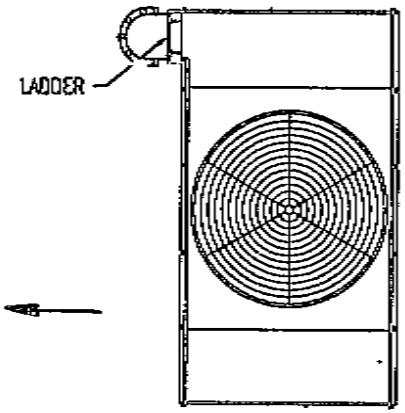


DETAIL "B"
FACE OF WATER INLET AT HOT WATER DISTRIBUTION BASIN.

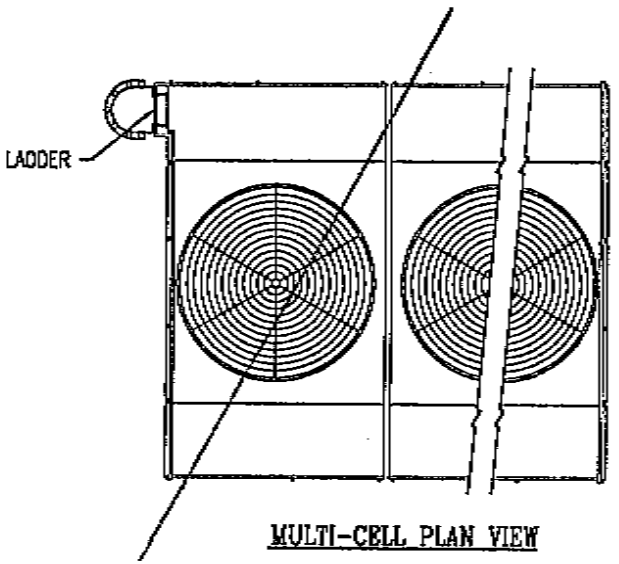
PIPING BY OTHERS / FLOW CONTROL VALVES BY BAC AND INSTALLED BY OTHERS

B.A.C. ORDER NO: C000143201 DATE: 10/17/00	BALTIMORE AIRCOIL COMPANY	SERIES 3000/JE PREMIER TOP INLET TYP. PIPING ARRANGEMENT DRAWING NUMBER: BAC-18669A A

MODEL NUMBER	H	LADDER WEIGHT (LBS) SEE NOTE 2	HANDRAIL WEIGHT (LBS) SEE NOTE 2	SAFETY CAGE WEIGHT (LBS) SEE NOTE 2
33235 THRU 33485 JE3235 THRU JE3485	9'-9 3/4"	30	190	80
33491 THRU 33646 JE3491 THRU JE3646	11'-9"	30	190	100
33707 THRU 33803 JE3707 THRU JE3803	15'-2"	40	190	140
33813 THRU 331055 JE3813 THRU JE31055	17'-10"	50	210	160

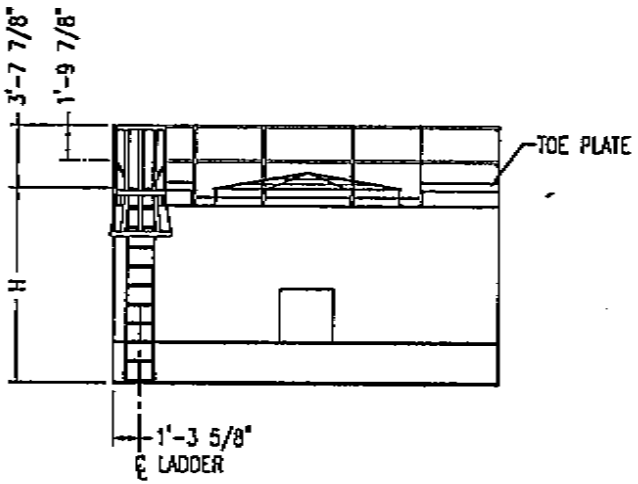


1-CELL PLAN VIEW

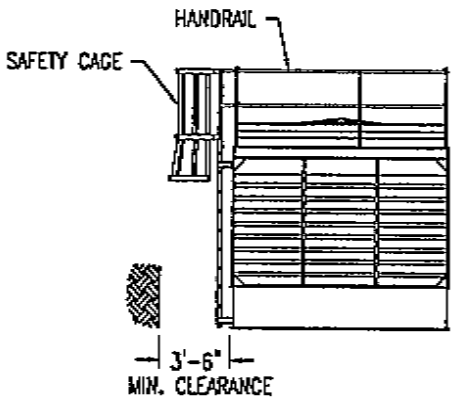


MULTI-CELL PLAN VIEW

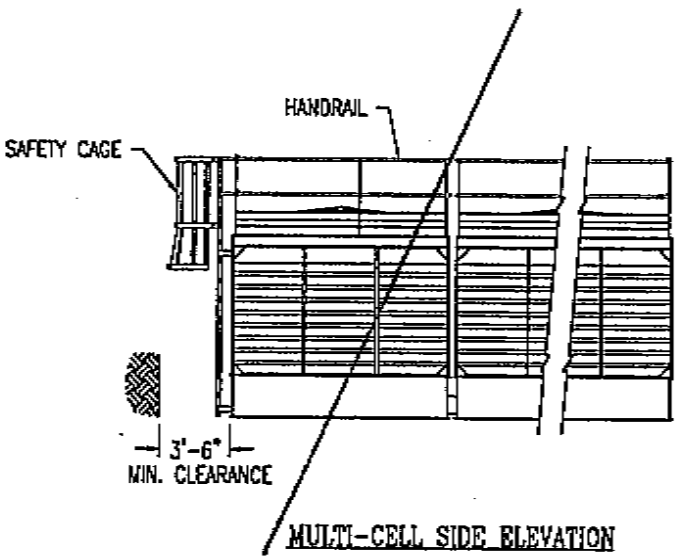
NOTE:
1. LADDER, HANDRAIL & SAFETY CAGE REQUIRES FIELD ASSEMBLY.
2. WEIGHTS GIVEN ARE FOR LADDER, HANDRAIL & SAFETY CAGE RESPECTIVELY AND SHOULD BE ADDED TO STANDARD UNIT WEIGHT.



END ELEVATION



1-CELL SIDE ELEVATION



MULTI-CELL SIDE ELEVATION

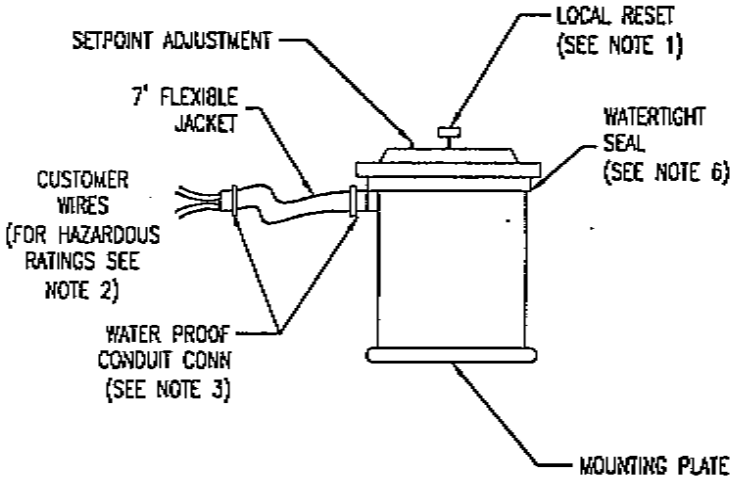
B.A.C. ORDER NO: C000143201 DATE: 10/17/00	BALTIMORE AIRCOIL COMPANY	SERIES 3000 / JE PREMIER STD. LADDER, SAFTY CAGE, HANDRAIL DRAWING NUMBER: BAC-18662A A

NOTES:

1. LOCAL PUSH BUTTON RESET.
2. TO MAINTAIN HAZARDOUS DUTY RATINGS, THE FACTORY INSTALLED WATER TIGHT CONDUIT/CABLE CONNECTION FITTINGS MUST BE REMOVED AND THE FOUR CONDUCTOR CABLE MUST BE ROUTED INSIDE OF A SUITABLE EXPLOSION PROOF CONDUIT. NOTE: THE CONNECTORS CAN EASILY BE REMOVED WITHOUT HAVING TO UN-WIRE THE CONDUCTORS FROM INSIDE THE CUTOUT SWITCH.
3. THE MECHANICAL VIBRATION CUTOUT SWITCH COMES WITH TWO WATER TIGHT CONDUIT/CABLE CONNECTORS. ONE CONNECTOR IS USED TO PROVIDE A WATER TIGHT CONNECTION TO THE VIBRATION CUTOUT SWITCH AND THE OTHER IS PROVIDED FOR THE ELECTRICIAN TO CONNECT THE WIRE CABLE TO A JUNCTION BOX LOCATED IN THE VICINITY OF THE VIBRATION CUTOUT SWITCH.
4. THE NORMALLY OPEN SWITCH WIRE (WHITE) HAS A FACTORY INSTALLED BUTT END CONNECTOR SO THAT A CLOSED SIGNAL INDICATES NORMAL OPERATION. IF REVERSE CONTROL LOGIC IS DESIRED, CUT OFF THE BUTT END CONNECTOR ON THE WHITE WIRE AND INSTALL A WIRE NUT OR BUTT CONNECTOR ON THE NORMALLY CLOSED WIRE (BLACK).
5. THIS MECHANICAL VIBRATION CUTOUT SWITCH COMES WITH ONE SINGLE POLE DOUBLE THROW SWITCH. THE SWITCH CONTACTS ARE "DRY CONTACTS" WHICH CAN BE SUCCESSFULLY USED DIRECTLY IN THE FAN STARTER CONTROL (TYPICALLY A/C VOLTAGE) CIRCUIT OR DIRECTLY IN A BUILDING MANAGEMENT SYSTEM (TYPICALLY D/C VOLTAGE).
   CONTACT RATINGS: 15 AMPS@ 125 OR 480 VAC, 1/2 AMP@ 125 VDC, 1/4 AMP@ 250 VDC.
6. CAUTION: MOISTURE INSIDE THE SWITCH CAN LEAD TO SWITCH FAILURE. CARE MUST BE TAKEN WHEN REPLACING THE COVER ON THE VIBRATION SWITCH TO ENSURE THAT THE PROPER WATERTIGHT SEAL IS OBTAINED.

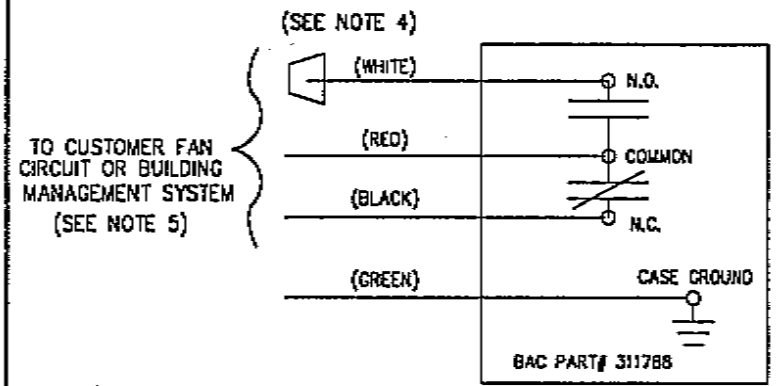
MECHANICAL VIBRATION CUT-OUT SWITCH

(ONE-SINGLE POLE DOUBLE THROW SWITCH)



WIRING DIAGRAM

(ONE-SINGLE POLE DOUBLE THROW SWITCH - SEE NOTE 5)



BEFORE PERFORMING ANY MAINTENANCE, ADJUSTMENT OR INSPECTION OF THE SWITCH, MAKE CERTAIN THAT ALL POWER HAS BEEN DISCONNECTED AND LOCKED IN THE OFF POSITION.

SHUT OFF WITH LOCAL RESET

ADJUSTMENTS OF BAC MECHANICAL VIBRATION CUTOUT SWITCH

BAC RECOMMENDS THAT EACH VIBRATION CUTOFF SWITCH BE FIELD ADJUSTED AT START-UP TO OPTIMIZE THE TRIP POINT RELATIVE TO THE FINAL MOUNTING POSITION AND VIBRATIONAL CHARACTERISTICS OF THE INSTALLED EQUIPMENT.

NOTE: INSTALLATION AND ADJUSTMENT MUST BE PERFORMED BY A QUALIFIED, COMPETENT TECHNICIAN

1. FOR SAFETY SAKE, TURN OFF, THEN LOCK & TAG-OUT THE ELECTRICAL SUPPLY TO THE FAN MOTOR(S).
2. TURN ADJUSTMENT SCREW COUNTERCLOCKWISE (CCW) 1/8 TURN AT A TIME UNTIL YOU HEAR THE CONTROL TRIP.
3. ONCE TRIPPED, ROTATE ADJUSTMENT SCREW 1/4 TURN CLOCKWISE (CW) AND THEN PUSH IN MANUAL RESET BUTTON.
4. START UP FAN(S) TO DETERMINE IF THE START-UP WILL CAUSE THE CUT-OUT SWITCH TO TRIP.
5. IF THE VIBRATION CUTOUT SWITCH DOES NOT TRIP, THEN START AND STOP THE FAN TWO MORE TIMES AND IF THE CUTOUT SWITCH STILL DOES NOT TRIP, THEN CALIBRATION IS COMPLETE. IF THE VIBRATION CUTOUT SWITCH DID TRIP, THEN TURN OFF, THEN LOCK & TAG-OUT THE ELECTRICAL SUPPLY TO THE FAN MOTOR(S). ADJUST THE SET POINT SCREW AN ADDITIONAL 1/4 TURN CW AND THEN DEPRESS THE RESET BUTTON. RE-START THE FAN(S) TO DETERMINE IF THE START-UP WILL CAUSE THE SWITCH TO TRIP. REPEAT THIS ADJUSTMENT PROCESS UNTIL THE CONTROL DOES NOT TRIP. ONCE THE FINAL ADJUSTMENT HAS BEEN MADE, START AND STOP THE FAN TWO MORE TIMES AND IF THE CUTOUT SWITCH STILL DOES NOT TRIP, THEN CALIBRATION IS COMPLETE.

B.A.C. ORDER NO: C000143201	BALTIMORE AIRCOIL COMPANY	MECHANICAL VCOS WIRING DIAGRAM
DATE: 10/17/00		DRAWING NUMBER: BAC-17491A

OPERATING INSTRUCTIONS

Follow the installation drawings and wiring diagram (see chart below) to ensure the proper operation of the vibration switch. Direct any questions to your local BAC Representative.

NOTE

Moisture inside the switch can lead to switch failure. Care must be taken when replacing the cover on the vibration switch to ensure that the proper watertight seal is obtained.

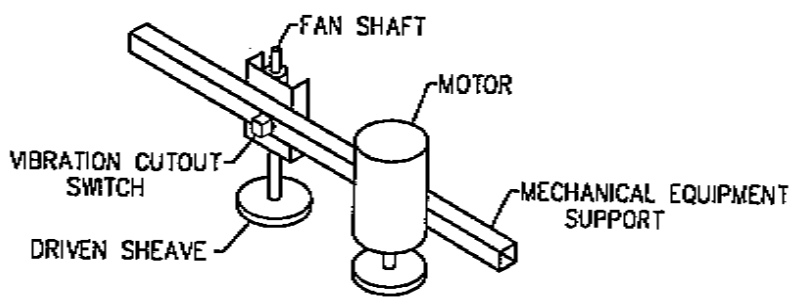
CAUTION

Before performing any maintenance, adjustment or inspection of the switch, make certain that all power has been disconnected and locked in the off position.

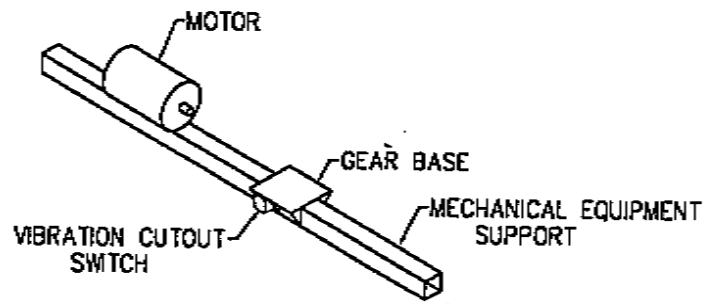
WIRING DIAGRAM CHART

BAC-17491A=Shut down with local reset
BAC-17492A=Shut down & alarm, with remote or local reset & time delay on start (110 Vac)
BAC-17493A=Shut down & alarm, with remote or local reset & time delay on start (220 Vac)

SWITCH LOCATION
3000 TOWERS
BELT DRIVE UNITS



SWITCH LOCATION
3000 TOWERS
GEAR DRIVE UNITS



B.A.C. ORDER NO: C000143201	BALTIMORE AIRCOIL COMPANY	MECHANICAL VCOS LOCATION SERIES 3000	
DATE: 10/17/00		DRAWING NUMBER: BAC-11493A	-

APPENDIX G

Modelling Files Supplied Electronically