TITLE V OPERATING PERMIT RENEWAL APPLICATION

STERICYCLE, INC. – HAW RIVER, NC FACILITY

TVOP NO. 05896T25

JANUARY 2021

Submitted by:

Stericycle®

Stericycle, Inc.
1168 Porter Avenue
Haw River, NC 27258

Submitted to:

DEQ
NORTH CAROLINA
Department of Environmental Quality

North Carolina Department of Environmental Quality
Division of Air Quality
Winston-Salem Regional Office
450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105

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1. INTRODUCTION AND APPLICATION ORGANIZATION

Stericycle, Inc. (Stericycle) owns and operates a hospital, medical, and infectious waste incineration facility in Haw River, North Carolina (Haw River Facility or Facility). The Facility is subject to the Federal Operating Permit Program (40 CFR Part 70) and North Carolina's Title V Permit Regulations (15A NCAC 02Q .0500) as a regulated source under 40 CFR Part 62, Subpart HHH (Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators Constructed on or Before December 1, 2008) and 15A NCAC 02D .1206 (Hospital, Medical, and Infectious Waste Incinerators). The Haw River Facility operates pursuant to North Carolina Department of Environmental Quality (NCDEQ) Title V Operating Permit (TVOP) No. 05896T25, which was issued on December 19, 2016 and expires on November 30, 2021. Pursuant to TVOP No. 05896T25, General Condition K, Stericycle is required to submit a TVOP renewal application to NCDEQ at least nine months prior to the date of permit expiration (i.e., by February 28, 2021). This document represents Stericycle's TVOP renewal application (Application).

1.1 PERMIT APPLICATION SHIELD

This document contains the required information and permit application forms for Stericycle to renew the current Haw River Facility TVOP. The information contained herein has been developed to meet the completeness and accuracy requirements of both the State and Federal programs. The Application has also been carefully presented to facilitate the application review process and development of the renewed operating permit. Pursuant to 15A NCAC 02Q .0512, Stericycle hereby requests that a permit application shield be granted, as the Application is being submitted in a timely and complete manner no later than nine months prior to the permit's expiration date.

1.2 FACILITY LOCATION

Stericycle is located in Alamance County, North Carolina. The location of the Facility is depicted in Figure 1-1. The Facility is under the jurisdiction of the following State and Federal agencies:

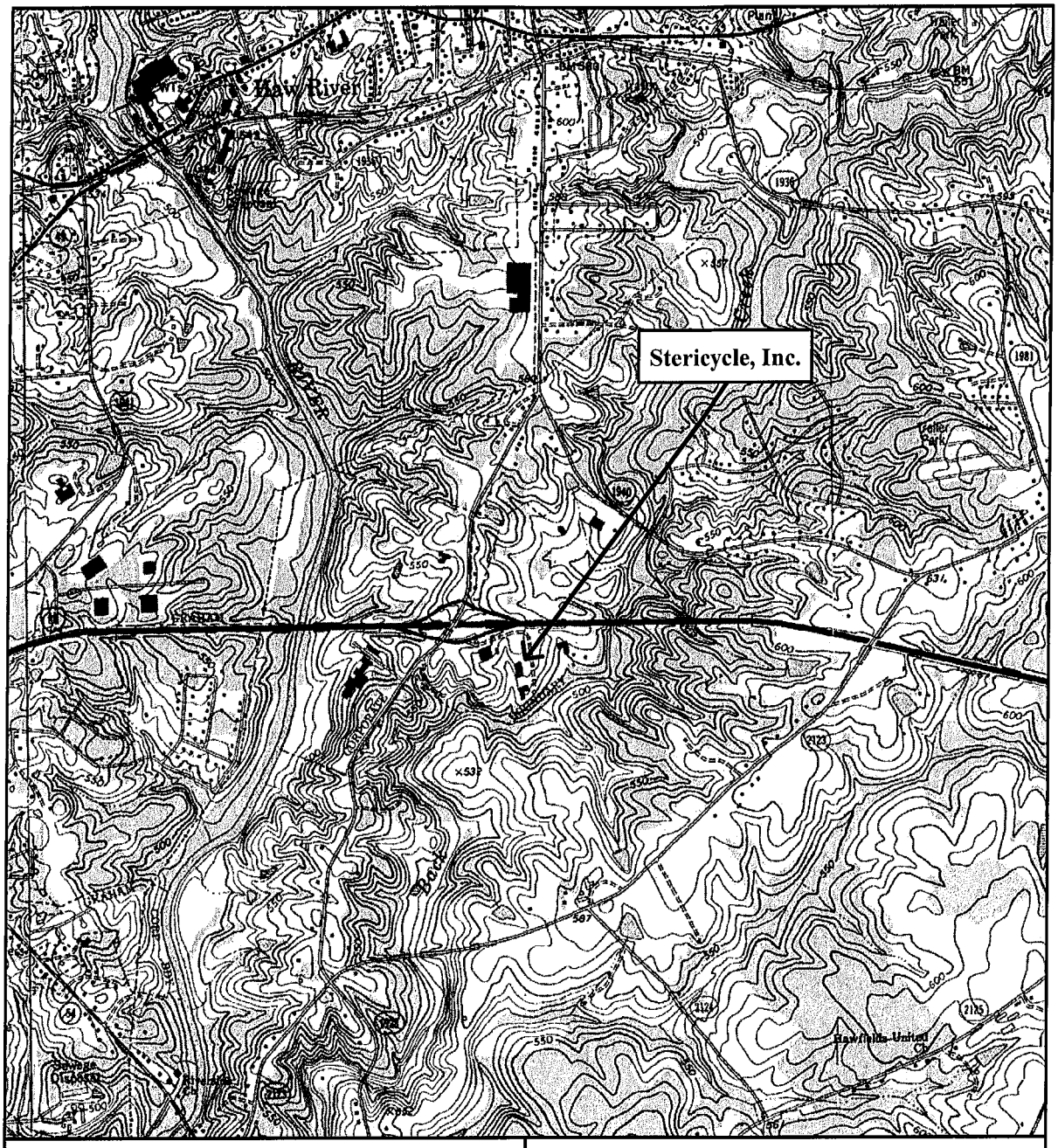
North Carolina Department of Environmental Quality
Division of Air Quality
Winston-Salem Regional Office
450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105

United States Environmental Protection Agency – Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

1.3 APPLICATION ORGANIZATION

The Application is organized in a report format and includes the following sections and appendices.

- Section 1 – Introduction and Application Organization contains general information regarding the Facility and an overview of the Application.
- Section 2 – Process Description and Emissions Information provides a process description and summary of significant emissions units.
- Section 3 – Applicable Requirements provides a summary of potentially applicable Federal and North Carolina regulations.
- Section 4 – Compliance Plan and Compliance Schedule provides a summary of the Facility compliance plan.
- Section 5 – Compliance Certification contains the Facility compliance certification.
- Section 6 – Description of NCDEQ Application Forms introduces NCDEQ application forms required for a complete TVOP renewal application.
- Appendix A – NCDEQ Application Forms provides the required, completed NCDEQ TVOP renewal application forms.
- Appendix B – Emissions Calculations summarizes unit-specific and Facility-wide potential emissions.



Stericycle, Inc.
Haw River, NC Facility

Figure 1-1
Facility Location Map

2. PROCESS DESCRIPTION AND EMISSIONS INFORMATION

This section summarizes the operations that take place at the Haw River Facility, as well as the emissions units and emissions data associated with the Facility.

2.1 PROCESS DESCRIPTION

The Haw River Facility operates two existing dual-chambered Hospital, Medical, and Infectious Waste Incinerators (HMIWIs) (Unit ID ES01 and Unit ID ES02). Waste for incineration is transported to the Facility on permitted vehicles. When waste is scheduled to be processed, vehicles are moved to the unloading dock. The waste is visually inspected while being unloaded onto a conveyor system. All incoming waste is scanned with a radiation monitor to ensure that radioactive waste is not processed. The reusable containers and/or boxes are transported via conveyor to the mechanical loader, where they are weighed and loaded into the charge hopper.

Both HMIWIs use a two-stage combustion system. The first stage is the primary chamber, where waste is combusted in an oxygen-starved environment for several hours. Material is fed into the primary chamber via the feeder ram. The second combustion stage, or the secondary chamber, is designed with an extended residence time in an excess air environment allowing complete oxidation and combustion of the primary chamber exhaust. The temperature of the secondary chamber is maintained at or above its established minimum operating temperature (~ 1,800 °F). Chamber temperatures are monitored and recorded. Natural gas burners are utilized during HMIWI startup and, when necessary, to maintain the combustion temperature.

Exhaust gas from the secondary chamber of each incinerator is routed to a selective non-catalytic reduction (SNCR) system, where reagent (i.e., ammonia, urea, or equivalent) is injected into the exhaust stream. After the SNCR, the exhaust gas is quenched in two stages: a pre-quench and a final quench tower. The saturated and quenched flue gas enters the condensing absorber where it is directly contacted with cooled recirculated scrubber liquor. The cooling process causes water vapor present in the flue gas to condense onto fine particles in the gas, and these droplets are removed in the venturi scrubber downstream of the condensing absorber. As a result of the contact with recirculated scrubber liquor, acid gases [i.e., hydrochloric acid (HCl) and sulfur dioxide

(SO_2)] are also effectively removed from the flue gas. The exhaust gas then enters the mist eliminator and carbon bed prior to venting to the atmosphere.

The Facility utilizes induced draft cooling towers. Three plate and frame heat exchangers are utilized for each air pollution control system. These heat exchangers use cooling tower water to indirectly cool the recirculated scrubber liquor and venturi liquor.

The Facility also operates a diesel-fired, 568 kilowatt (kW) emergency generator (Unit ID EG1) to support the HMIWI and associated air pollution control (APC) equipment during power supply interruptions.

Figure 2-1 and Figure 2-2 illustrate the incineration process of each HMIWI (Unit ID ES01 and Unit ID ES02) and associated APC equipment.

2.2 SIGNIFICANT EMISSIONS UNITS

There are three existing significant emissions units identified in the TVOP for the Haw River Facility. Table 2-1 identifies significant emissions units located at the Facility.

Table 2-1
Summary of Significant Emissions Units

Emissions Unit ID	Unit Description
ES01	One dual-chamber HMIWI
ES02	One dual-chamber HMIWI
EG1	One diesel-fired emergency generator

At the time of Application submittal, Stericycle has confirmed that no other additional significant emissions units are operated at the Haw River Facility. Stericycle requests with this Application that the diesel-fuel fired emergency generator (EG1) be removed as a significant unit and added as an insignificant activity. As shown in Appendix B, Table B-5, emissions for particulate matter (PM), SO_2, nitrogen oxides (NOx), volatile organic compounds (VOC), carbon monoxide (CO), and hazardous air pollutants (HAP) are lower than the limits for insignificant activities

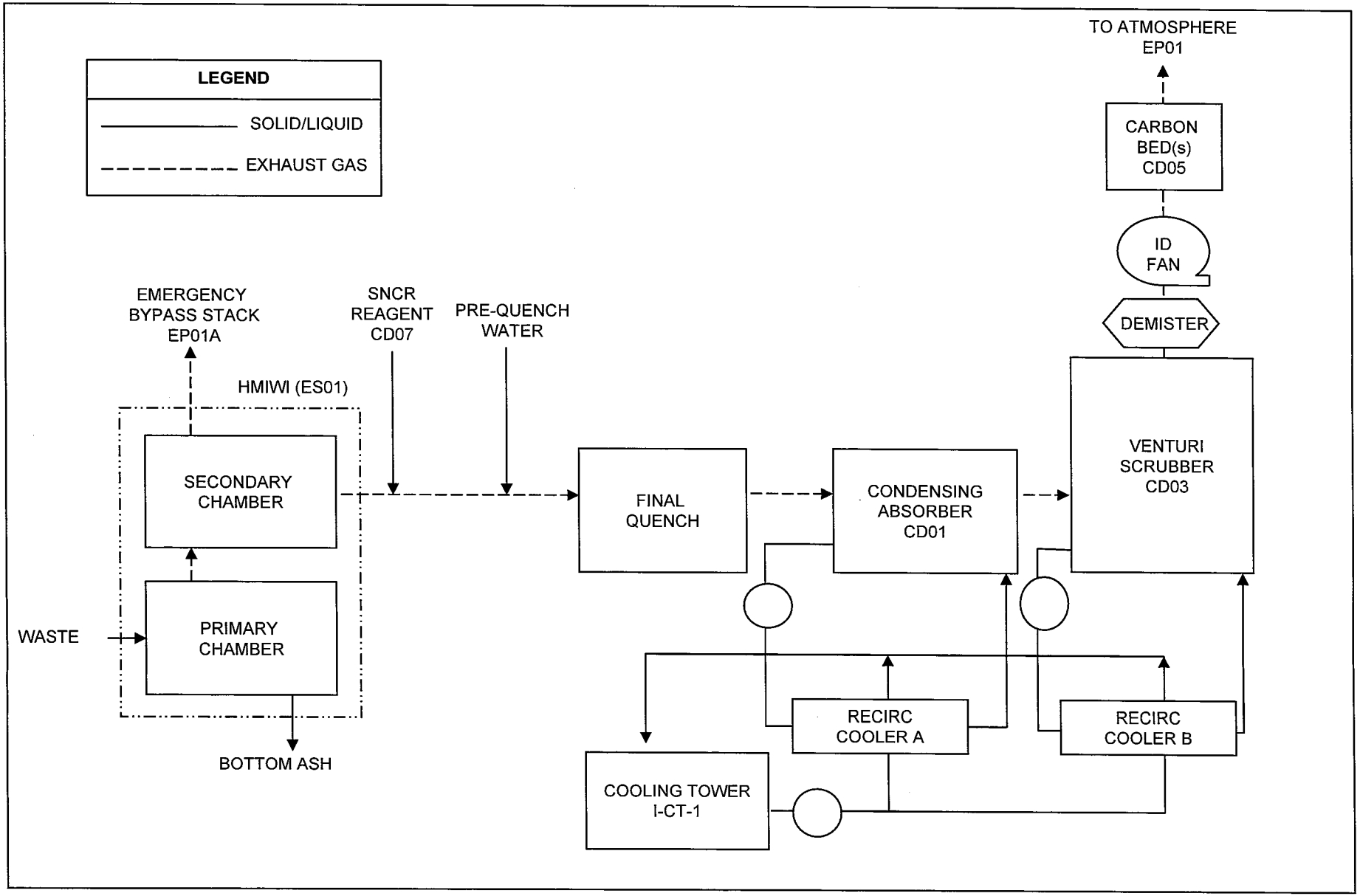


Figure 2-1
Haw River Process Flow Diagram – HMIWI ES01
Stericycle, Inc.

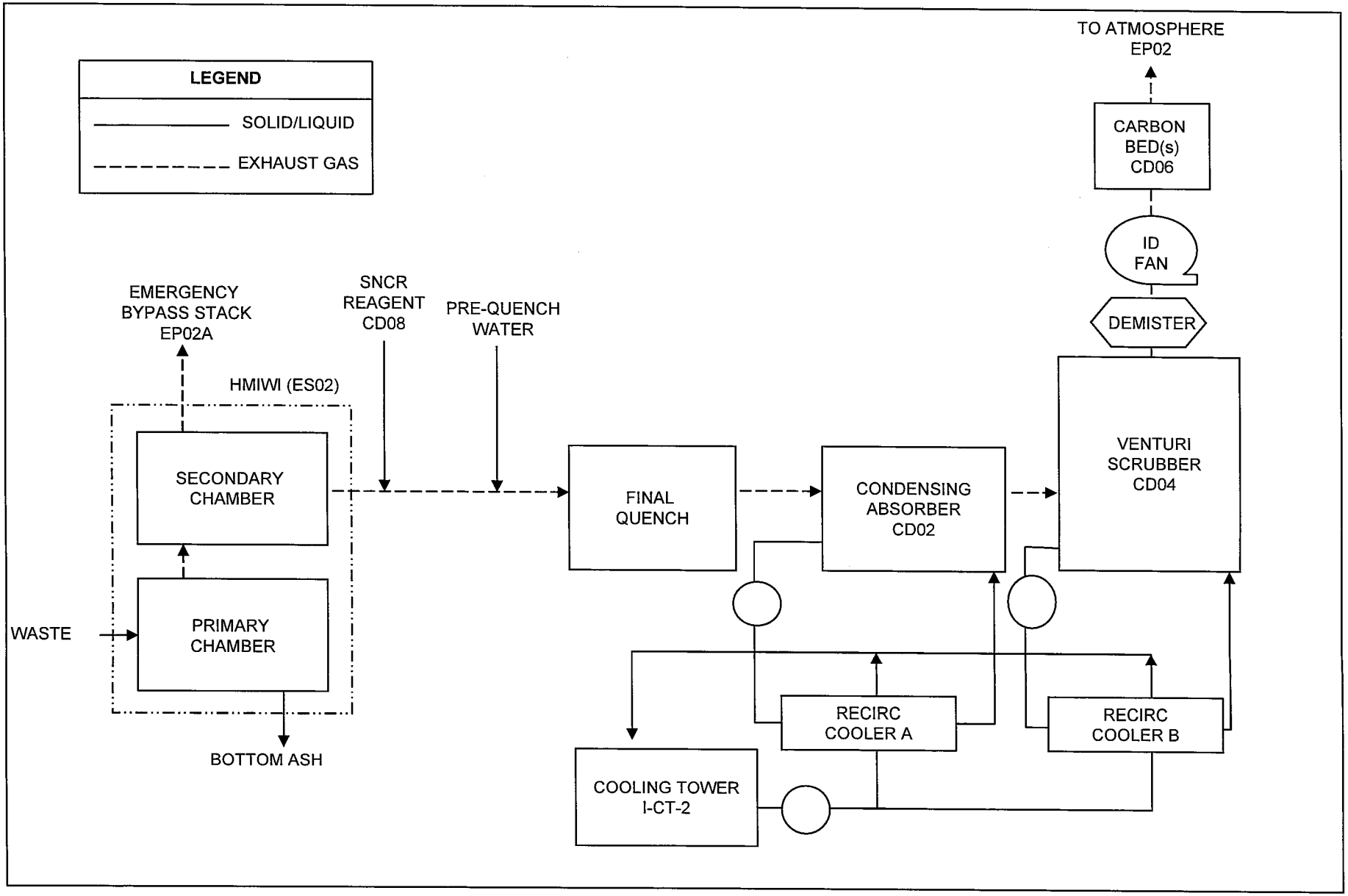


Figure 2-2
Haw River Process Flow Diagram – HMIWI ES02
Stericycle, Inc.

because of size or production rate pursuant to 15A NCAC 02Q 500 .0503(8). More information on each significant emissions unit and respective APC equipment can be found in the emissions calculations in Appendix B.

2.3 INSIGNIFICANT EMISSIONS UNITS

Table 2-2 identifies emissions units and activities located at the Facility that are insignificant pursuant to 15A NCAC 2Q .0503(8). More information on these units can be found in the emissions calculations in Appendix B.

Table 2-2
Summary of Insignificant Emissions Units

Emissions Unit ID	Unit Description
I-CT-1	Cooling Tower (55,200 gal/hr water recirculation rate)
I-CT-2	Cooling Tower (55,200 gal/hr water recirculation rate)

2.4 EMISSIONS DATA

Stericycle has provided emissions rate information for the existing significant units in Appendix B. Table B-1, B-2, and B-3 of Appendix B summarize potential emissions for ES01, ES02, and EG1, respectively. Table B-4 of Appendix B summarizes the total potential to emit (PTE) from all significant emissions units at the Facility. The data is provided in units of pounds per hour (lb/hr) and tons per year (ton/yr). These values are provided for completeness purposes only and are not required to demonstrate compliance with any applicable Federal, State, or existing permit limits, nor are they intended to establish new limits.

The PTE represents the maximum amount that an emissions unit can emit, as limited by physical capability or applicable requirements. Some emissions units, especially units that are not subject to permitting requirements, may not have regulatory limitations for specific pollutants. The PTE for such pollutants was calculated using available emission factors and the maximum capacity of each individual emissions unit.

When available, the most stringent permit limit or regulation was used to calculate the PTE for a pollutant. Long-term PTE was calculated from short-term PTE by multiplying by 8,760 hours for HMIWIs and 500 hours for the emergency generator. In lieu of an applicable regulation or permit limit, PTE was calculated by multiplying an applicable emissions factor by the maximum capacity for each unit.

3. APPLICABLE REQUIREMENTS

Stericycle has reviewed the Federal and State of North Carolina air quality regulations for potentially applicable requirements that may have become effective during the term of the Facility's permit. Specifically, the following sections address only those new or modified air regulations that could potentially apply to the Facility.

3.1 FEDERAL REGULATIONS

Stericycle has evaluated the potentially applicable Federal air quality regulations including the following:

- New Source Review (NSR)
- Standard of Performance for New Stationary Sources (NSPS)
- National Emission Standards for Hazardous Air Pollutants (NESHAP)
- Compliance Assurance Monitoring (CAM)

A discussion of each specific Federal requirement is addressed in the subsections below.

3.1.1 New Source Review

The Federal NSR program is codified in 40 CFR §§51.165, 51.166, 52.21, 52.24, and 40 CFR Part 51, Appendix S. NSR requirements potentially apply to new major stationary sources and major modifications to major stationary sources. The Haw River Facility is not a major stationary source and Stericycle is not proposing to construct any new stationary sources or to modify any existing sources as a part of this Application. As a result, NSR regulations, including prevention of significant deterioration (PSD) and nonattainment new source review (NNSR), are not applicable.

3.1.2 Standards of Performance for New Stationary Sources

U.S. Environmental Protection Agency (U.S. EPA) has promulgated standards of performance for new, modified, or reconstructed sources of air pollution and emission guidelines for specific sources of air pollution at 40 CFR Part 60. The Facility is subject to the rules listed in this section.

There are no additional proposed or promulgated NSPS requirements that apply to the Haw River Facility.

3.1.2.1 40 CFR Part 60, Subpart Ce (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators)

The Haw River Facility's two HMIWIs are considered "existing" units and are therefore within the source category regulated by 40 CFR Part 60, Subpart Ce (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators). Stericycle understands that NCDEQ amended 15A NCAC 02D .1206 to reflect 40 CFR Part 60, Subpart Ce as amended on October 6, 2009; however, the rule was not approved by U.S. EPA. Therefore, 40 CFR Part 60, Subpart Ce is implemented by the requirements listed in 40 CFR Part 62, Subpart HHH (Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators). Stericycle is not proposing to modify the existing HMIWIs with this Application.

3.1.2.2 40 CFR Part 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines)

The emergency generator is subject to 40 CFR Part 60, Subpart IIII [Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines] pursuant to the applicability criteria of 40 CFR §60.4200(a)(2)(i) for stationary CI engines that commenced construction after July 11, 2005 and were manufactured on or after April 1, 2006. Specifically, the emergency generator is subject to the emissions standards codified at 40 CFR §60.4205(b), which references engine manufacturer emissions limits in 40 CFR §60.4202. 40 CFR §60.4202 references emissions limitations for non-methane hydrocarbons (NMHC) + NO_x, CO, and PM contained in 40 CFR §89.112. The engine associated with the emergency generator is rated at 568 kilowatts (kW) (i.e., 762 horsepower) and therefore is subject to U.S. EPA Tier 2 standards. Stericycle is not proposing to modify the emergency generator with this Application. Therefore, the Facility will continue to comply with the requirements of 40 CFR Part 60, Subpart IIII as currently incorporated in the TVOP.

3.1.3 National Emission Standards for Hazardous Air Pollutants

NESHAP promulgated prior to the Clean Air Act Amendments (CAAA) of 1990, found at 40 CFR Part 61, apply to specific compounds emitted from specific processes. The Haw River Facility is not subject to any Part 61 requirements, and there are no new proposed or promulgated Part 61 requirements triggered by this application.

NESHAP promulgated under 40 CFR Part 63, also referred to as Maximum Achievable Control Technology (MACT) standards, apply to specific source categories that are considered area sources or major sources of HAP. A major source of HAP is defined as a source with a facility-wide PTE any single HAP of 10 ton/yr or more, or with a facility-wide total HAP PTE of 25 ton/yr or more. An area source of HAP is a source that emits HAP but does not qualify as a major source. The Haw River Facility is not a major source of HAP; rather, the Haw River Facility is an area source of HAP. The Facility is subject to the rules listed in this section. There are no additional proposed or promulgated NESHAP requirements that apply to the Haw River Facility.

3.1.3.1 40 CFR Part 63, Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)

The emergency generator is subject to 40 CFR Part 63, Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)), commonly referred to as the RICE MACT. The rule applies to both area sources and major sources of HAP emissions. Pursuant to 40 CFR §63.6590(a)(2)(iii), the emergency generator is an affected source classified as a new stationary RICE because it is located at an area source of HAP and construction commenced on or after June 12, 2006. However, pursuant to 40 CFR §63.6590(c)(1), the emergency generator satisfies all requirements of 40 CFR Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR Part 60, Subpart IIII. Therefore, no further requirements apply for such engines under 40 CFR Part 63, Subpart ZZZZ.

Stericycle is not proposing to modify the emergency generator with this Application. Therefore, the Haw River Facility will continue to comply with the requirements of 40 CFR Part 63, Subpart

ZZZZ by complying with the requirements of 40 CFR Part 60, Subpart IIII as currently incorporated in the TVOP.

3.1.4 Compliance Assured Monitoring

CAM requirements are promulgated at 40 CFR Part 64 and apply to certain emissions units at Title V sources that employ control devices to comply with applicable emissions limits. 40 CFR §64.2(b) identifies exemptions from the requirements for any emissions limitations or standards proposed by the Administrator after November 15, 1990 pursuant to Section 111 or 112 of the Act (the NSPS and NESHAP requirements).

CAM was addressed in a previous TVOP renewal application for the Facility and was determined not to apply. The Facility has not changed in a way that would impact that determination. Therefore, CAM is not applicable.

3.2 STATE OF NORTH CAROLINA REGULATIONS

Stericycle has evaluated the potentially applicable North Carolina air quality regulations including the following:

- 15A NCAC 02D .0500 – Emission Control Standards
- 15A NCAC 02D .0614 – Compliance Assurance Monitoring
- 15A NCAC 02D .0900 – Volatile Organic Compounds
- 15A NCAC 02D .1100 – Control of Air Toxics
- 15A NCAC 02D .1206 – Hospital, Medical, and Infectious Waste Incinerators
- 15A NCAC 02D .1400 – Nitrogen Oxides
- 15A NCAC 02Q .0500 – Title V Procedures
- 15A NCAC 02Q .0700 – Toxic Air Pollutant Procedures

3.2.1 15A NCAC 02D .0500 – Emission Control Standards

Federal NSPS, PSD, and NNSR regulations are adopted and implemented by reference at 15A NCAC 02D .0524, .0530, and .0531, respectively. As discussed in Sections 3.1.1 and 3.1.2, there are no new requirements with respect to these programs as a result of this Application.

3.2.2 15A NCAC 02D .0614 – Compliance Assurance Monitoring

As discussed in Section 3.1.4, CAM was addressed in a previous TVOP renewal application for the Facility and was determined not to apply. The Facility has not changed in a way that would impact that determination. Therefore, CAM is not applicable.

3.2.3 15A NCAC 02D .0900 – Volatile Organic Compounds

15A NCAC 02D .0900 regulates select facilities, processes and units. The Haw River Facility does not include any processes or units that are regulated in 15A NCAC 02D .0900, nor is the Haw River Facility one of the facility types regulated therein. Therefore, 15A NCAC 02D .0900 is not applicable to the Facility.

3.2.4 15A NCAC 02D .1100 – Control of Air Toxics

Federal NESHAP and MACT regulations are adopted and implemented by reference at 15A NCAC 02D .1110 and .1111, respectively. The Haw River Facility is currently subject to and will continue to comply with emissions limits pursuant to 15A NCAC 02D .1100. As discussed in Section 3.1.3, there are no new requirements as a result of this Application.

3.2.5 15A NCAC 02D .1206 – Hospital, Medical, and Infectious Waste Incinerators

The Haw River Facility's HMIWIs are subject to 15A NCAC 02D .1206 (Hospital, Medical, and Infectious Waste Incinerators). U.S. EPA promulgated amendments to 40 CFR Part 60, Subpart Ce on October 6, 2009 that, among other requirements, contained more stringent emissions limitations. North Carolina amended 15A NCAC 02D .1206 to reflect the amendments to 40 CFR Part 60, Subpart Ce; however, 15A NCAC 02D .1206 was not approved by U.S. EPA. Therefore, the Haw River Facility is subject to both 15A NCAC 02D .1206 and 40 CFR Part 62, Subpart HHH pursuant to 40 CFR §62.14400(a). 15A NCAC 02D .1206 was amended on July 1, 2018. Many amendments were administrative in nature to remove obsolete requirements pertaining to dates that have passed since the rule was last promulgated. However, some of the citations have changed; therefore, Stericycle requests that all 15A NCAC 02D .1206 citations in the TVOP be

updated to reflect the correct citation, as applicable. Additionally, 15A 02D .1206(g) was removed, which prohibited HMIWI from utilizing startup, shutdown, and malfunction (SSM) provisions in 15A NCAC 02D .0535 for bypass events. Stericycle submitted a request for an administrative correction to address this change in the permit in May 2020. This change is still outstanding and should be reflected in the issuance of the renewed TVOP.

3.2.6 15A NCAC 02D .1400 – Nitrogen Oxides

The Haw River Facility does not have a NOx PTE greater than or equal to 100 tons per year or 560 pounds per calendar day from May 1 through September 30 of any year; therefore, 15A NCAC 02D .1400 is not applicable to the Facility. Refer to Appendix B for emissions calculations.

3.2.7 15A NCAC 02Q .0500 – Title V Procedures

15A NCAC 02Q .0500 contains NCDEQ's Title V permitting procedures. As discussed in the introduction for Section 1, this Application is being submitted in a timely and complete manner pursuant to 15A NCAC 02Q .0513.

3.2.8 15A NCAC 02Q .0700 – Toxic Air Pollutant Procedures

Stericycle is currently subject to and will continue to comply with the emissions limits in 15A NCAC 02Q .0700 in order to comply with 15A NCAC 02D .1100.

3.3 PERMIT SHIELD

15A NCAC 02Q .0512(a) allows for a permit shield to be requested to ensure that compliance with the conditions of the permit is deemed compliance with any applicable requirements as of the date of permit issuance. The permit shield extends to requirements specifically identified as not applicable to the stationary source if the permit includes a determination and concise summary of these requirements.

Stericycle has carefully reviewed emissions units and potentially applicable requirements at the Facility and has determined that certain identified requirements do not apply to specific emissions

units at the Facility. Table 3-1 provides a summary of the emissions unit, the requirements which are not applicable to the emissions unit, and the reason the requirement is not applicable. Stericycle requests that NCDEQ include a permit shield for the requirements and emissions units identified in Table 3-1.

Table 3-1
Summary of Non-Applicable Requirements

Emissions Unit	Non-Applicable Requirement Citation	Justification for Non-Applicability
Facility	40 CFR Part 68 (Risk Management Program), except General Duty provisions	The Haw River Facility does not operate any processes that contain or process chemicals that meet the minimum threshold quantities to subject the Facility to the rule.
Facility	40 CFR Part 64 (Compliance Assurance Monitoring)	CAM was determined not to apply in a previous renewal application, and the Facility has not changed in a way that would impact that determination. Therefore, CAM is not applicable.
Facility	40 CFR Part 82, except Subparts B and F (Protection of Stratospheric Ozone)	The Haw River Facility does not make, distribute, or process CFCs covered by this regulation.
Miscellaneous Storage Tanks Storing VOC-containing Liquids	40 CFR Part 60, Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced after July 23, 1984)	The Haw River Facility does not maintain any storage tanks containing VOCs that meet both the size requirement and the installation date requirement that would subject them to 40 CFR Part 60, Subpart Kb.
ES01, ES02 (HMIWI)	40 CFR Part 60, Subpart Ec (Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for which Construction is Commenced after June 20, 1996)	The Haw River Facility's HMIWIs were constructed prior to June 20, 1996 and, therefore, are regulated by 40 CFR Part 60, Subpart Ce and not 40 CFR Part 60, Subpart Ec.

Table 3-1
Summary of Non-Applicable Requirements

Emissions Unit	Non-Applicable Requirement Citation	Justification for Non-Applicability
EG1 (Emergency Generator, 568 kW)	40 CFR Part 60, Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)	The Haw River Facility's existing emergency generator is compression ignition, and therefore, is not subject to 40 CFR Part 60, Subpart JJJJ.
Facility	15A NCAC 02D .0900 (Volatile Organic Compounds)	The Haw River Facility is not a type of facility regulated in 15A NCAC 02D .0900, nor does it contain any units or processes regulated therein.

4. COMPLIANCE PLAN AND COMPLIANCE SCHEDULE

See Form E5 in Appendix A for details on the compliance schedule and compliance certification.

4.1 COMPLIANCE PLAN AND SCHEDULE

The current TVOP includes all applicable requirements at this time. The Haw River Facility is currently in compliance with the applicable requirements. The Facility will continue to comply with applicable requirements. For applicable requirements that will become effective during the permit term, the Facility will meet such requirements on a timely basis.

5. COMPLIANCE CERTIFICATION

Under 15A NCAC 2Q .0508(n), the applicant must provide the following information with respect to compliance certifications:

a) *The identification of each term or condition of the permit that is the basis of the certification;*
b) *The compliance status (with the terms and conditions of the permit for the period covered by the certification);*
c) *Whether compliance was continuous or intermittent; and*
d) *The methods used for determining the compliance status of the source during the certification period.*

Stericycle certifies, based on information and belief formed after reasonable inquiry, that the Haw River Facility is in compliance with all applicable requirements as defined in 15A NCAC 2Q .0508(n). This certification is based on the methods identified in the existing TVOP and in applicable requirements and takes into account any credible evidence required to be considered under the Clean Air Act (CAA). The Haw River Facility submits certifications of compliance in accordance with TVOP, Section 3, General Condition P. The Haw River Facility will continue to submit compliance certifications on an annual basis during the TVOP term or as otherwise specified in the permit renewal when issued.

Based on information and belief, formed after reasonable inquiry, Stericycle certifies that the statements and information in this document are true, accurate, and complete.

6. DESCRIPTION OF NCDEQ APPLICATION FORMS

Appendix A of this application contains the completed NCDEQ TVOP forms which are required as part of a TVOP renewal application. The forms included in this application are based on NCDEQ's "Required Air Permit Application Forms Matrix," which can be found on the North Carolina Division of Air Quality's website, for a "Title V Facility" and a "Renewal Without Modification(s)." Stericycle has determined that no application fee is required for this Application, based on NCDEQ's memorandum for "2020 DAQ Permit and Application Fee Schedule Memo (effective January 1, 2020)." The following forms are being submitted as part of the application:

- A – General Facility Information
- A2, A3 – Emission Source Listing for This Application and 112r Applicability Information
- E5 – Title V Compliance Certification

APPENDIX A -
NCDEQ APPLICATION FORMS

FORM A

GENERAL FACILITY INFORMATION

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | A

NOTE- APPLICATION WILL NOT BE PROCESSED WITHOUT THE FOLLOWING:

☐ Local Zoning Consistency Determination (new or modification only)	☑ Appropriate Number of Copies of Application	**Application Fee** (please check one option below)	
☑ Responsible Official/Authorized Contact Signature	☐ P.E. Seal (if required)	☑ Not Required	☐ ePayment ☐ Check Enclosed

GENERAL INFORMATION

Legal Corporate/Owner Name: *Stericycle, Inc.*	
Site Name: *Haw River Facility*	
Site Address (911 Address) Line 1: *1168 Porter Avenue*	
Site Address Line 2: *P.O. Box 310*	
City: *Haw River*	State: *NC*
Zip Code: *27258*	County: *Alamance County*

CONTACT INFORMATION

Responsible Official/Authorized Contact: *Kirk Yarbrough*	*Invoice Contact:* *Don Nuss*
Name/Title: *Facility Manager*	Name/Title: *Regional Compliance Manager*
Mailing Address Line 1: *1168 Porter Avenue*	Mailing Address Line 1: *3614 Hoskins Court*
Mailing Address Line 2: *P.O. Box 310*	Mailing Address Line 2: *N/A*
City: *Haw River* State: *NC* Zip Code: *27258*	City: *Hamilton* State: *OH* Zip Code: *45011*
Primary Phone No.: *336-380-7440* Fax No.: *N/A*	Primary Phone No.: *513-543-7073* Fax No.: *N/A*
Secondary Phone No.: *N/A*	Secondary Phone No.: *N/A*
Email Address: *kirk.yarbrough@stericycle.com*	Email Address: *dnuss@stericycle.com*

Facility/Inspection Contact: *Don Nuss*	*Permit/Technical Contact:* *Don Nuss*
Name/Title: *Regional Compliance Manger*	Name/Title: *Regional Compliance Manager*
Mailing Address Line 1: *3614 Hoskins Court*	Mailing Address Line 1: *3614 Hoskins Court*
Mailing Address Line 2: *N/A*	Mailing Address Line 2: *N/A*
City: *Hamilton* State: *OH* Zip Code: *45011*	City: *Hamilton* State: *OH* Zip Code: *45011*
Primary Phone No.: *513-543-7073* Fax No.: *N/A*	Primary Phone No.: *513-543-7073* Fax No.: *N/A*
Secondary Phone No.: *N/A*	Secondary Phone No.: *N/A*
ail Address: *dnuss@stericycle.com*	Email Address: *dnuss@stericycle.com*

APPLICATION IS BEING MADE FOR

☐ New Non-permitted Facility/Greenfield ☐ Modification of Facility (permitted) ☑ Renewal Title V ☐ Renewal Non-Title V
☐ Name Change ☐ Ownership Change ☐ Administrative Amendment ☐ Renewal with Modification

FACILITY CLASSIFICATION AFTER APPLICATION (Check Only One)

☐ General ☐ Small ☐ Prohibitory Small ☐ Synthetic Minor ☑ Title V

FACILITY (Plant Site) INFORMATION

Describe nature of (plant site) operation(s):
The Stericycle Haw River Facility, located in Haw River, Alamance County, NC, is a hospital, medical, and infectious waste incineration facility.

	Facility ID No. *0100010*
Primary SIC/NAICS Code: *4953, 562213*	Current/Previous Air Permit No. *05896T25* Expiration Date: *11/30/2021*
Facility Coordinates: Latitude: *79.348679 W*	Longitude: *36.06674 N*
Does this application contain confidential data? ☐ YES ☑ NO	***If yes, please contact the DAQ Regional Office prior to submitting this application.*** **(See Instructions)**

PERSON OR FIRM THAT PREPARED APPLICATION

Person Name: *Sean Cunningham*		Firm Name: *ALL4 NC, P.C.*	
Mailing Address Line 1: *2393 Kimberton Rd*		Mailing Address Line 2: *PO Box 299*	
City: *Kimberton*	State: *PA*	Zip Code: *19442*	County: *Chester*
Phone No.: *610-933-5246*	Fax No.: *N/A*	Email Address: *scunningham@all4inc.com*	

SIGNATURE OF RESPONSIBLE OFFICIAL/AUTHORIZED CONTACT

Name (typed): *Kirk Yarbrough*	Title: *Facility Manager*
X Signature(Blue Ink): *Kirk Yarbrough*	Date: *1-26-21*

Attach Additional Sheets As Necessary

FORM A (continued, page 2 of 2)
GENERAL FACILITY INFORMATION

SECTION AA1 - APPLICATION FOR NON-TITLE V PERMIT RENEWAL

N/A (Company Name) hereby formally requests renewal of Air Permit No. *N/A*

There have been no modifications to the originally permitted facility or the operations therein that would require an air permit since the last permit was issued.

Is your facility subject to 40 CFR Part 68 "Prevnetion of Accidental Releases" - Section 112(r) of the Clean Air Act? ☐ YES ☐ NO

If yes, have you already submitted a Risk Manage Plan (RMP) to EPA? ☐ YES ☐ NO Date Submitted: *N/A*

Did you attach a current emissions inventory? ☐ YES ☐ NO

If no, did you submit the inventory via AERO or by mail? ☐ Via AERO ☐ Mailed Date Mailed: *N/A*

SECTION AA2- APPLICATION FOR TITLE V PERMIT RENEWAL

In accordance with the provisions of Title 15A 2Q .0513, the responsible official of *Stericycle, Inc.* (Company Name) hereby formally requests renewal of Air Permit No. *05896T25* (Air Permit No.) and further certifies that:

(1) The current air quality permit identifies and describes all emissions units at the above subject facility, except where such units are exempted under the North Carolina Title V regulations at 15A NCAC 2Q .0500;

(2) The current air quality permit cits all applicable requirements and provides the method or methods for determing compliance with the applicable requirements;

(3) The facility is currently in compliance, and shall continue to comply, with all applicable requiremetns. (Note: As provided under 15A NCAC 2Q .0512 compliance with the conditions of the permit shall be deemed compliance with the applicable requirements specifically identified in the permit);

(4) For applicable requirements that become effective during the term of the renewed permit that the facility shall comply on a timely basis;

(5) The facility shall fulfill applicable enhanced monitoring requirements and submit a compliance certification as required by 40 CFR Part 64.

The responsible official (signature on page 1) certifies under the penalty of law that all information and statements provided above, based on information and belief formed after reasonable inquiry, are true, accurate, and complete.

SECTION AA3- APPLICATION FOR NAME CHANGE

New Facility Name: *N/A*

Former Facility Name: *N/A*

An official facility name change is requested as described above for the air permit mentioned on page 1 of this form. Complete the other sections if there have been modifications to the originally premitted facility that would requie an air quality permit since the last permit was issued and if ther has been an ownership change associated with this name change.

SECTION AA4- APPLICATION FOR AN OWNERSHIP CHANGE

'his application we hereby request transfer of Air Quality Permit No. *N/A* from the former owner to the new owner as described below.

ə transfer of permit responsibility, coverage and liability shall be effective *N/A* (immediately or insert date.) The legal ownership of the facility described on page 1 of this form has been or will be transferred on *N/A* (date). There have been no modifications to the originally permitted facility that would require an air quality permit since the last permit was issued.

Signature of New (Buyer) Responsible Official/Authorized Contact (as typed on page 1):

X Signature (Blue Ink): _____

Date: *N/A*

New Facility Name: *N/A*

Former Facility Name: *N/A*

Signature of Former (Seller) Responsible Official/Authorized Contact:

Name (typed or print): *N/A*

Title: *N/A*

X Signature (Blue Ink): _____

Date: *N/A*

Former Legal Corporate/Owner Name: *N/A*

In lieu of the seller's signature on this form, a letter may be submitted with the seller's signature indicating the ownership change

SECTION AA5- APPLICATION FOR ADMINISTRATIVE AMENDMENT

Describe the requested administrative amendment here (attach additional documents as necessary):

Stericycle requests that all 15A NCAC 02D .1206 citations in the TVOP be updated to reflect to the correct citation, as applicable. Additionally, Stericycle request that the TVOP be corrected as a result of the removal of 15A 02D .1206(g) (see application narrative). Finally, Stericycle requests that the diesel-fuel fired emergency generator (EG1) be removed as a significant unit and added as an insignificant activity.

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
Equipment To Be ADDED By This Application (New, Previously Unpermitted, or Replacement)			
N/A	N/A	N/A	N/A
Existing Permitted Equipment To Be MODIFIED By This Application			
N/A	N/A	N/A	N/A
Equipment To Be DELETED By This Application			
N/A	N/A	N/A	N/A

112(r) APPLICABILITY INFORMATION — A 3

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? ☐ Yes ☑ No

If No, please specify in detail how your facility avoided applicability: Stericycle does not exceed the threshold quantity for any 112(r) regulated substances.

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

☐ Yes ☐ No Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

☐ Yes ☐ No If yes, please specify: _____

C. List the processes subject to 112(r) at your facility:

PROCESS DESCRIPTION	PROCESS LEVEL (1, 2, or 3)	HAZARDOUS CHEMICAL	MAXIMUM INTENDED INVENTORY (LBS)

Attach Additional Sheets As Necessary

FORM E5

TITLE V COMPLIANCE CERTIFICATION (Required)

In accordance with the provisions of Title 15A NCAC 2Q .0520 and .0515(b)(4) the responsible company official of:

SITE NAME: Stericycle, Inc.

SITE ADDRESS: 1168 Porter Avenue, P.O. Box 310

CITY, NC : Haw River, NC

COUNTY: Alamance

PERMIT NUMBER : 05896T25

CERTIFIES THAT (Check the appropriate statement(s):

☑ The facility is in compliance with all applicable requirements

☐ In accordance with the provisions of Title 15A NCAC 2Q .0515(b)(4) the responsible company official certifies that the proposed minor modification meets the criteria for using the procedures set out in 2Q .0515 and requests that these procedures be used to process the permit application.

☐ The facility is not currently in compliance with all applicable requirements
If this box is checked, you must also complete Form E4 "Emission Source Compliance Schedule"

The undersigned certifies under the penalty of law, that all information and statements provided in the application, based on information and belief formed after reasonable inquiry, are true, accurate, and complete.

[signature] Date: 1-26-21

Signature of responsible company official (REQUIRED, USE BLUE INK)

Kirk Yarbrough, Facility Manager

Name, Title of responsible company official (Type or print)

Attach Additional Sheets As Necessary

APPENDIX B -
EMISSIONS CALCULATIONS

Table B-1
Stericycle, Inc. - Haw River Facility
Summary of Potential Emissions from ES01

Pollutant	Emissions Factor	Units	Emission Factor Source	Potential Emission Rate [a]		
				lb/hr	lb/yr	ton/yr
$FPM/FPM_{10}/FPM_{2.5}$ [b]	0.011	gr/dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	0.28	2,466	1.23
CO	11	ppmvd @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	0.14	1,255	0.63
SO_2	9.0	ppmvd @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	0.27	2,348	1.17
NO_X	140	ppmvd @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	2.99	2.62E+04	13.12
VOC (TOC)	0.14	lbs/ton	AP-42, Section 2.3, Table 2.3-2, Controlled[d]	0.13	1,147	0.57
Hydrogen Chloride	6.6	ppmvd @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	0.11	980	0.49
Dioxins/Furans [c]	4.1	gr/10^9 dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	1.05E-07	9.19E-04	4.60E-07
Dioxins/Furans TEQ	0.024	gr/10^9 dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	6.14E-10	5.38E-06	2.69E-09
Lead	0.016	gr/10^3 dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	4.09E-04	3.59	1.79E-03
Cadmium	4.00E-03	gr/10^3 dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	1.02E-04	0.90	4.48E-04
Mercury	7.90E-03	gr/10^3 dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	2.02E-04	1.77	8.86E-04
Beryllium	47.64	lbs/yr	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	2.72E-03	23.82	1.19E-02
Chromium VI	0.964	lbs/yr	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	5.50E-05	0.48	2.41E-04
Arsenic	2.67	lbs/yr	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	1.53E-04	1.34	6.68E-04
Chlorine	24.00	lbs/day	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	0.50	4,380	2.19
Nickel	12.00	lbs/day	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	0.25	2,190	1.10
Hydrogen Fluoride	24.00	lbs/day	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	0.50	4,380	2.19
Manganese	8.22	lbs/day	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	0.17	1,500	0.75
Antimony	4.08E-04	lbs/ton	AP-42, Section 2.3, Table 2.3-4, Controlled[d]	3.81E-04	3.34	1.67E-03
Aluminum	1.05E-02	lb/ton	AP-42 Chapter 2.3, Table 2.3-4, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	2.95E-04	2.58	1.29E-03
Barium	3.24E-03	lb/ton	AP-42 Chapter 2.3, Table 2.3-5, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	9.09E-05	0.80	3.98E-04
Copper	1.25E-03	lb/ton	AP-42 Chapter 2.3, Table 2.3-6, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	3.51E-05	0.31	1.54E-04
Hydrogen Bromide	4.33E-02	lb/ton	AP-42 Chapter 2.3, Table 2.3-9, Uncontrolled +99% Control Assumed & Applied to Emission Rate[d]	4.05E-04	3.55	1.77E-03
Iron	1.44E-02	lb/ton	AP-42 Chapter 2.3, Table 2.3-6, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	4.04E-04	3.54	1.77E-03
Silver	4.33E-04	lb/ton	AP-42, Section 2.3, Table 2.3-8, Controlled[d]	4.05E-04	3.55	1.77E-03
SO_3	9.07E-03	lb/ton	AP-42, Section 2.3, Table 2.3-9, Controlled[d]	8.48E-03	74.29	3.71E-02
Thallium	1.10E-03	lb/ton	AP-42 Chapter 2.3, Table 2.3-8, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	3.09E-05	0.27	1.35E-04
Total PCBs	4.65E-05	lb/ton	AP-42 Chapter 2.3, Table 2.3-3, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	1.30E-06	0.01	5.71E-06
CO_2e	-	-	-	3.63E+03	3.18E+07	1.59E+04
CO_2	*199.96*	*lb/MMBtu*	*40 CFR Part 98 Table C-1 [c]*	*3.55E+03*	*3.11E+07*	*1.56E+04*
CH_4	*7.05E-02*	*lb/MMBtu*	*40 CFR Part 98 Table C-2 [c]*	*1.25*	*1.10E+04*	*5.49*
N_2O	*9.26E-03*	*lb/MMBtu*	*40 CFR Part 98 Table C-2 [c]*	*1.64E-01*	*1440.96*	*0.72*

Table B-1
Stericycle, Inc. - Haw River Facility
Summary of Potential Emissions from ES01

[a] Calculations are based on the following:

4,069 dscfm
10.7 % O_2
1,870 lbs waste/hr
9,500 Btu/lb waste (engineering estimate)

[b] Assumed PM = PM_{10} = $PM_{2.5}$.

[c] Permit limits exist for Hexachlorodibenzo-P-dioxin and Tetrachlorodibenzo-P-dioxin; however, 40 CFR Part 62, Subpart HHH dioxin/furans emissions factor is more stringent

[d] Emissions factors were taken from AP-42 Chapter 2.3, *Medical Waste Incineration* . When available, controlled emissions factors for high energy scrubber were used. When controlled emissions factors for high energy scrubber were unavailable, an uncontrolled emissions factor was used with an assumed control applied. Acid gas control was assumed to be 99% from the condensing absorber (CD01), but other control for metals and PCBs was assumed to be 97% from the ventrui scrubber (CD03). For SO_3, in lieu of either a high energy scrubber emissions factor or an uncontrolled emissions factor, the only factor available was used.

[e] For 40 CFR Part 98 Table C-1, *Default CO_2 Emission Factors and High Heat Values for Various Types of Fuel* , the emissions factor for Municiple Solid Waste was used. For 40 CFR Part 98 Table C-2, *Default CH_4 and N_2O Emission Factors for Various Types of Fuel* , the emissions factors for Other Fuels-Solid was used.

Table B-2
Stericycle, Inc. - Haw River Facility
Summary of Insignificant Natural Gas Emissions from ES01

Pollutant	Emissions Factor	Potential to Emit[g]	
		(lb/hr)	(tons/yr)
Criteria Pollutants			
FPM	- -	See Footnote (e)	
FPM_{10}	- -	See Footnote (e)	
$FPM_{2.5}$	- -	See Footnote (e)	
CPM_{10}	5.7 lb/MMCF[a]	0.10	0.43
$CPM_{2.5}$	5.7 lb/MMCF[a]	0.10	0.43
PM_{10}	5.7 lb/MMCF[a]	0.10	0.43
$PM_{2.5}$	5.7 lb/MMCF[a]	0.10	0.43
CO	- -	See Footnote (e)	
SO_2	- -	See Footnote (e)	
NO_X	- -	See Footnote (e)	
VOC	5.5 lb/MMCF[a]	0.10	0.42
HAPs			
Lead	- -	See Footnote (e)	
Cadmium	- -	See Footnote (e)	
Mercury	- -	See Footnote (e)	
2-Methylnaphthalene	2.40E-05 lb/MMCF[c]	4.18E-07	1.83E-06
3-Methylchloranthrene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05 lb/MMCF[c]	2.79E-07	1.22E-06
Acenaphthene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Acenaphthylene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Anthracene	2.40E-06 lb/MMCF[c]	4.18E-08	1.83E-07
Benz(a)anthracene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Benzene	2.10E-03 lb/MMCF[c]	3.66E-05	1.60E-04
Benzo(a)pyrene	1.20E-06 lb/MMCF[c]	2.09E-08	9.15E-08
Benzo(b)fluoranthene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Benzo(g,h,i)perylene	1.20E-06 lb/MMCF[c]	2.09E-08	9.15E-08
Benzo(k)fluoranthene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Chrysene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Dibenzo(a,h)anthracene	1.20E-06 lb/MMCF[c]	2.09E-08	9.15E-08
Dichlorobenzene	1.20E-03 lb/MMCF[c]	2.09E-05	9.15E-05
Fluoranthene	3.00E-06 lb/MMCF[c]	5.23E-08	2.29E-07
Fluorene	2.80E-06 lb/MMCF[c]	4.88E-08	2.14E-07
Formaldehyde	7.50E-02 lb/MMCF[c]	1.31E-03	5.72E-03
Hexane	1.80E+00 lb/MMCF[c]	3.14E-02	0.14
Indeno(1,2,3-cd)pyrene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Naphthalene	6.10E-04 lb/MMCF[c]	1.06E-05	4.65E-05
Phenanthrene	1.70E-05 lb/MMCF[c]	2.96E-07	1.30E-06
Pyrene	5.00E-06 lb/MMCF[c]	8.71E-08	3.81E-07
Toluene	3.40E-03 lb/MMCF[c]	5.92E-05	2.59E-04
Arsenic	2.00E-04 lb/MMCF[d]	3.48E-06	1.53E-05
Beryllium	1.20E-05 lb/MMCF[d]	2.09E-07	9.15E-07
Chromium	1.40E-03 lb/MMCF[d]	2.44E-05	1.07E-04
Cobalt	8.40E-05 lb/MMCF[d]	1.46E-06	6.41E-06
Manganese	3.80E-04 lb/MMCF[d]	6.62E-06	2.90E-05
Nickel	2.10E-03 lb/MMCF[d]	3.66E-05	1.60E-04
Selenium	2.40E-05 lb/MMCF[d]	4.18E-07	1.83E-06
Total HAPs	- -	3.29E-02	0.14

Table B-2
Stericycle, Inc. - Haw River Facility
Summary of Insignificant Natural Gas Emissions from ES01

Pollutant	Emissions Factor	Potential to Emit[g]	
		(lb/hr)	(tons/yr)
Other Non-HAPs			
Butane	2.10E+00 lb/MMCF[c]	3.66E-02	0.16
Ethane	3.10E+00 lb/MMCF[c]	0.05	0.24
Pentane	2.60E+00 lb/MMCF[c]	0.05	0.20
Propane	1.60E+00 lb/MMCF[c]	2.79E-02	0.12
Barium	4.40E-03 lb/MMCF[d]	7.66E-05	3.36E-04
Copper	8.50E-04 lb/MMCF[d]	1.48E-05	6.48E-05
Molybdenum	1.10E-03 lb/MMCF[d]	1.92E-05	8.39E-05
Vanadium	2.30E-03 lb/MMCF[d]	4.01E-05	1.75E-04
Zinc	2.90E-02 lb/MMCF[d]	5.05E-04	2.21E-03
GHGs			
CO_2e[f]	- -	2,080	9,111
CO_2	53.06 kg CO_2/MMBtu[b]	2,078	9,102
CH_4	1.00E-03 kg CH_4/MMBtu[b]	3.92E-02	0.17
N_2O	1.00E-04 kg N_2O/MMBtu[b]	3.92E-03	1.72E-02

[a] Emissions factors from U.S. EPA's AP-42, Chapter 1.4 (Natural Gas Combustion), Table 1.4-2. Stericycle has conservatively assumed that PM=PM_{10}=$PM_{2.5}$. PM only accounts for CPM as FPM is regulated by 40 CFR Part 62, Subpart HHH.

[b] Emissions factors from 40 CFR Part 98 Tables C-1 and C-2.

[c] Emissions factors from U.S. EPA's AP-42 Chapter 1.4 (Natural Gas Combustion), Table 1.4-3.

[d] Emissions factors from U.S. EPA's AP-42 Chapter 1.4 (Natural Gas Combustion), Table 1.4-4.

[e] Emissions from these pollutants are accounted for in Table B-1, which includes the incinerator air pollution control equipment. These pollutants are regulated by 40 CFR Part 62, Subpart HHH - *Federal Plan Requirements for Hospital Medical Infectious Waste Incinerators Constructed on or Before December 1, 2008.*

[e] For 40 CFR Part 98 Table C-1, *Default CO_2 Emission Factors and High Heat Values for Various Types of Fuel*, the emissions factor for Natural Gas (Weighted U.S. Average) was used. For 40 CFR Part 98 Table C-2, *Default CH_4 and N_2O Emission Factors for Various Types of Fuel*, the emissions factors for Natural Gas was used.

[g] Emission calculations are based on the following information:

Unit Parameters	
17.77	MMBtu/hr (total)
1,020	MMBtu/MMCF
17.42	MCF/hr
8,760	hrs/year
152.57	MMCF/year
2,000	lb/ton
453.59	g/lb
2.20	lb/kg
1,000	mcf/mmcf

Table B-3
Stericycle, Inc. - Haw River Facility
Summary of Potential Emissions from ES02

Pollutant	Emissions Factor	Units	Emission Factor Source	Potential Emission Rate [a]		
				lb/hr	lb/yr	ton/yr
$PM/PM_{10}/PM_{2.5}$ [b]	0.011	gr/dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	0.34	2,980	1.49
CO	11	ppmvd @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	0.17	1,516	0.76
SO_2	9.0	ppmvd @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	0.32	2,837	1.42
NO_X	140	ppmvd @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	3.62	3.17E+04	15.85
VOC (TOC)	0.14	lbs/ton	AP-42, Section 2.3, Table 2.3-2, Controlled[d]	0.13	1,147	0.57
Hydrogen Chloride	6.6	ppmvd @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	0.14	1,184	0.59
Dioxins/Furans [c]	4.1	gr/10^9 dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	1.27E-07	1.11E-03	5.55E-07
Dioxins/Furans TEQ	0.024	gr/10^9 dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	7.42E-10	6.50E-06	3.25E-09
Lead	0.016	gr/10^3 dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	4.95E-04	4.33	2.17E-03
Cadmium	4.00E-03	gr/10^3 dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	1.24E-04	1.08	5.42E-04
Mercury	7.90E-03	gr/10^3 dscf @ 7% O_2	40 CFR Part 62 Subpart HHH, Table 1	2.44E-04	2.14	1.07E-03
Beryllium	47.64	lbs/yr	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	2.72E-03	23.82	1.19E-02
Chromium VI	0.964	lbs/yr	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	5.50E-05	0.48	2.41E-04
Arsenic	2.67	lbs/yr	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	1.53E-04	1.34	6.68E-04
Chlorine	24.00	lbs/day	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	0.50	4,380	2.19
Nickel	12.00	lbs/day	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	0.25	2,190	1.10
Hydrogen Fluoride	24.00	lbs/day	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	0.50	4,380	2.19
Manganese	8.22	lbs/day	Existing Permit Limit (limit reflects both units, emission rates reflect one unit only)	0.17	1,500	0.75
Antimony	4.08E-04	lbs/ton	AP-42, Section 2.3, Table 2.3-4, Controlled[d]	3.81E-04	3.34	1.67E-03
Aluminum	1.05E-02	lb/ton	AP-42 Chapter 2.3, Table 2.3-4, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	9.82E-03	86.00	4.30E-02
Barium	3.24E-03	lb/ton	AP-42 Chapter 2.3, Table 2.3-5, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	9.09E-05	0.80	3.98E-04
Copper	1.25E-03	lb/ton	AP-42 Chapter 2.3, Table 2.3-6, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	3.51E-05	0.31	1.54E-04
Hydrogen Bromide	4.33E-02	lb/ton	AP-42 Chapter 2.3, Table 2.3-9, Uncontrolled +99% Control Assumed & Applied to Emission Rate[d]	4.05E-04	3.55	1.77E-03
Iron	1.44E-02	lb/ton	AP-42 Chapter 2.3, Table 2.3-6, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	4.04E-04	3.54	1.77E-03
Silver	4.33E-04	lb/ton	AP-42, Section 2.3, Table 2.3-8, Controlled[d]	4.05E-04	3.55	1.77E-03
SO_3	9.07E-03	lb/ton	AP-42, Section 2.3, Table 2.3-9, Controlled[d]	8.48E-03	74.29	3.71E-02
Thallium	1.10E-03	lb/ton	AP-42 Chapter 2.3, Table 2.3-8, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	3.09E-05	0.27	1.35E-04
Total PCBs	4.65E-05	lb/ton	AP-42 Chapter 2.3, Table 2.3-3, Uncontrolled +97% Control Assumed & Applied to Emission Rate[d]	1.30E-06	0.01	5.71E-06
CO_2e	-	-	-	3.63E+03	3.18E+07	1.59E+04
CO_2	*199.96*	*lb/MMBtu*	*40 CFR Part 98 Table C-1* [e]	*3.55E+03*	*3.11E+07*	*1.56E+04*
CH_4	*7.05E-02*	*lb/MMBtu*	*40 CFR Part 98 Table C-2* [e]	*1.25*	*1.10E+04*	*5.49*
N_2O	*9.26E-03*	*lb/MMBtu*	*40 CFR Part 98 Table C-2* [e]	*0.16*	*1.44E+03*	*0.72*

Table B-3
Stericycle, Inc. - Haw River Facility
Summary of Potential Emissions from ES02

[a] Calculations are based on the following:

4,731 dscfm
10.3 % O_2
1,870 lbs waste/hr
9,500 Btu/lb waste (engineering estimate)

[b] Assumed PM = PM_{10} = $PM_{2.5}$.

[c] Permit limits exist for Hexachlorodibenzo-P-dioxin and Tetrachlorodibenzo-P-dioxin; however, 40 CFR Part 62, Subpart HHH dioxin/furans emissions factor is more stringent

[d] Emissions factors were taken from AP-42 Chapter 2.3, *Medical Waste Incineration*. When available, controlled emissions factors for high energy scrubber were used. When controlled emissions factors for high energy scrubber were unavailable, an uncontrolled emissions factor was used with an assumed control applied. Acid gas control was assumed to be 99% from the condensing absorber (CD02), but other control for metals and PCBs was assumed to be 97% from the ventrui scrubber (CD04). For SO_3, in lieu of either a high energy scrubber emissions factor or an uncontrolled emissions factor, the only factor available was used.

[e] For 40 CFR Part 98 Table C-1, *Default CO_2 Emission Factors and High Heat Values for Various Types of Fuel*, the emissions factor for Municiple Solid Waste was used. For 40 CFR Part 98 Table C-2, *Default CH_4 and N_2O Emission Factors for Various Types of Fuel*, the emissions factors for Other Fuels-Solid was used.

Table B-4
Stericycle, Inc. - Haw River Facility
Summary of Insignificant Natural Gas Emissions from ES02

Pollutant	Emissions Factor	Potential to Emit[g]	
		(lb/hr)	(tons/yr)
Criteria Pollutants			
FPM	- -	See Footnote (e)	
FPM_{10}	- -	See Footnote (e)	
$FPM_{2.5}$	- -	See Footnote (e)	
CPM_{10}	5.7 lb/MMCF[a]	0.10	0.43
$CPM_{2.5}$	5.7 lb/MMCF[a]	0.10	0.43
PM_{10}	5.7 lb/MMCF[a]	0.10	0.43
$PM_{2.5}$	5.7 lb/MMCF[a]	0.10	0.43
CO	- -	See Footnote (e)	
SO_2	- -	See Footnote (e)	
NO_X	- -	See Footnote (e)	
VOC	5.5 lb/MMCF[a]	0.10	0.42
HAPs			
Lead	- -	See Footnote (e)	
Cadmium	- -	See Footnote (e)	
Mercury	- -	See Footnote (e)	
2-Methylnaphthalene	2.40E-05 lb/MMCF[c]	4.18E-07	1.83E-06
3-Methylchloranthrene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05 lb/MMCF[c]	2.79E-07	1.22E-06
Acenaphthene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Acenaphthylene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Anthracene	2.40E-06 lb/MMCF[c]	4.18E-08	1.83E-07
Benz(a)anthracene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Benzene	2.10E-03 lb/MMCF[c]	3.66E-05	1.60E-04
Benzo(a)pyrene	1.20E-06 lb/MMCF[c]	2.09E-08	9.15E-08
Benzo(b)fluoranthene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Benzo(g,h,i)perylene	1.20E-06 lb/MMCF[c]	2.09E-08	9.15E-08
Benzo(k)fluoranthene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Chrysene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Dibenzo(a,h)anthracene	1.20E-06 lb/MMCF[c]	2.09E-08	9.15E-08
Dichlorobenzene	1.20E-03 lb/MMCF[c]	2.09E-05	9.15E-05
Fluoranthene	3.00E-06 lb/MMCF[c]	5.23E-08	2.29E-07
Fluorene	2.80E-06 lb/MMCF[c]	4.88E-08	2.14E-07
Formaldehyde	7.50E-02 lb/MMCF[c]	1.31E-03	5.72E-03
Hexane	1.80E+00 lb/MMCF[c]	3.14E-02	0.14
Indeno(1,2,3-cd)pyrene	1.80E-06 lb/MMCF[c]	3.14E-08	1.37E-07
Naphthalene	6.10E-04 lb/MMCF[c]	1.06E-05	4.65E-05
Phenanthrene	1.70E-05 lb/MMCF[c]	2.96E-07	1.30E-06
Pyrene	5.00E-06 lb/MMCF[c]	8.71E-08	3.81E-07
Toluene	3.40E-03 lb/MMCF[c]	5.92E-05	2.59E-04
Arsenic	2.00E-04 lb/MMCF[d]	3.48E-06	1.53E-05
Beryllium	1.20E-05 lb/MMCF[d]	2.09E-07	9.15E-07
Chromium	1.40E-03 lb/MMCF[d]	2.44E-05	1.07E-04
Cobalt	8.40E-05 lb/MMCF[d]	1.46E-06	6.41E-06
Manganese	3.80E-04 lb/MMCF[d]	6.62E-06	2.90E-05
Nickel	2.10E-03 lb/MMCF[d]	3.66E-05	1.60E-04
Selenium	2.40E-05 lb/MMCF[d]	4.18E-07	1.83E-06
Total HAPs	- -	3.29E-02	0.14

Table B-4
Stericycle, Inc. - Haw River Facility
Summary of Insignificant Natural Gas Emissions from ES02

Pollutant	Emissions Factor	Potential to Emit[g]	
		(lb/hr)	(tons/yr)
Other Non-HAPs			
Butane	2.10E+00 lb/MMCF[c]	3.66E-02	0.16
Ethane	3.10E+00 lb/MMCF[c]	0.05	0.24
Pentane	2.60E+00 lb/MMCF[c]	0.05	0.20
Propane	1.60E+00 lb/MMCF[c]	2.79E-02	0.12
Barium	4.40E-03 lb/MMCF[d]	7.66E-05	3.36E-04
Copper	8.50E-04 lb/MMCF[d]	1.48E-05	6.48E-05
Molybdenum	1.10E-03 lb/MMCF[d]	1.92E-05	8.39E-05
Vanadium	2.30E-03 lb/MMCF[d]	4.01E-05	1.75E-04
Zinc	2.90E-02 lb/MMCF[d]	5.05E-04	2.21E-03
GHGs			
CO_2e[f]	- -	2,080	9,111
CO_2	53.06 kg CO_2/MMBtu[b]	2,078	9,102
CH_4	1.00E-03 kg CH_4/MMBtu[b]	3.92E-02	0.17
N_2O	1.00E-04 kg N_2O/MMBtu[b]	3.92E-03	1.72E-02

[a] Emissions factors from U.S. EPA's AP-42, Chapter 1.4 (Natural Gas Combustion), Table 1.4-2. Stericycle has conservatively assumed that PM=PM_{10}=$PM_{2.5}$. PM only accounts for CPM as FPM is regulated by 40 CFR Part 62, Subpart HHH.

[b] Emissions factors from 40 CFR Part 98 Tables C-1 and C-2.

[c] Emissions factors from U.S. EPA's AP-42 Chapter 1.4 (Natural Gas Combustion), Table 1.4-3.

[d] Emissions factors from U.S. EPA's AP-42 Chapter 1.4 (Natural Gas Combustion), Table 1.4-4.

[e] Emissions from these pollutants are accounted for in Table B-1, which includes the incinerator air pollution control equipment. These pollutants are regulated by 40 CFR Part 62, Subpart HHH - *Federal Plan Requirements for Hospital Medical Infectious Waste Incinerators Constructed on or Before December 1, 2008.*

[f] For 40 CFR Part 98 Table C-1, *Default CO_2 Emission Factors and High Heat Values for Various Types of Fuel*, the emissions factor for Natural Gas (Weighted U.S. Average) was used. For 40 CFR Part 98 Table C-2, *Default CH_4 and N_2O Emission Factors for Various Types of Fuel*, the emissions factors for Natural Gas was used.

[g] Emission calculations are based on the following information:

Unit Parameters	
17.77	MMBtu/hr (total)
1,020	MMBtu/MMCF
17.42	MCF/hr
8,760	hrs/year
152.57	MMCF/year
2,000	lb/ton
453.59	g/lb
2.20	lb/kg
1,000	mcf/mmcf

Table B-5
Stericycle, Inc. - Haw River Facility
Summary of Potential Emissions from EG1

Pollutant	Emissions Factors	Units	Potential Emissions Rate [a] [b]	
			lb/hr	ton/yr
NMHC + NO_X	6.40	g/kW-hr [c]	8.01	2.00
CO	3.50	g/kW-hr [c]	4.38	1.10
SO_X	2.30	lb/MMBtu [d]	11.53	2.88
$PM/PM_{10}/PM_{2.5}$ [e]	0.20	g/kW-hr [c]	0.25	0.06
VOC	0.09	lb/MMBtu [f]	0.45	0.11
Benzene	7.76E-04	lb/MMBtu [f]	3.89E-03	9.73E-04
Toluene	2.81E-04	lb/MMBtu [f]	1.41E-03	3.52E-04
Xylenes	1.93E-04	lb/MMBtu [f]	9.68E-04	2.42E-04
Formaldehyde	7.89E-05	lb/MMBtu [f]	3.96E-04	9.89E-05
Acetaldehyde	2.52E-05	lb/MMBtu [f]	1.26E-04	3.16E-05
Acrolein	7.88E-06	lb/MMBtu [f]	3.95E-05	9.88E-06
Naphthalene	1.30E-04	lb/MMBtu [f]	6.52E-04	1.63E-04
CO_2e	165.00	lb/MMBtu [f]	827.34	206.84

[a] Throughputs to calculate emissions based upon a maximum fuel consumption of:

568 kW

5.0142 MMBtu/hr

36.6 gal/hr (vendor supplied; 100% load)

137,000.00 Btu/gal (diesel fuel; AP-42 Appendix A)

[b] Potential and annual emissions assumed to be equal. Annual emission rates based on:

500 operating hrs/yr

[c] Emission factors from U.S. EPA Tier 2 standards codified in 40 CFR § 89.112.

[d] Based on a permitted emission limit of 2.3 lb/MMBtu.

[e] Assumed $PM = PM_{10} = PM_{2.5}$.

[f] Emission factors are from AP-42, Section 3.4 for uncontrolled diesel engines.

Table B-6
Stericycle, Inc. - Haw River Facility
Summary of Potential Emissions from I-CT-1 and I-CT-2

Pollutant	Emissions Factors	Units	Potential Emissions Rate [a]	
			lb/hr	ton/yr
PM_{10}	1.90E-02	$lb/10^3$ gal[b]	2.10	9.19

[a] Emissions were calculated using the following parameters:

Cooling Tower Paramters	
55,200.00	gal/hr
8,760	hrs/year
2.00	number of units

[b] Emissions factor from U.S. EPA's AP-42, Section 13.4, *Wet Cooling Towers.*

Table B-7
Stericycle, Inc. - Haw River Facility
Summary of Facility Total Potential Emissions

Pollutant	Incinerators		Emergency Generator		Insignificant NG Combustion		Cooling Tower		Facility Total	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
PM	0.62	2.72	0.25	0.06	0.20	0.87	---	---	1.07	3.66
PM_{10}	0.62	2.72	0.25	0.06	0.20	0.87	2.10	9.19	3.17	12.84
$PM_{2.5}$	0.62	2.72	0.25	0.06	0.20	0.87	---	---	1.07	3.66
CO	0.32	1.39	4.38	1.10	---	---	---	---	4.70	2.48
SO_2	0.59	2.59	11.53	2.88	---	---	---	---	12.12	5.48
NO_X	6.61	28.96	---	---	---	---	---	---	6.61	28.96
NMHC + NO_X	---	---	8.01	2.00	---	---	---	---	8.01	2.00
VOC	0.26	1.15	0.45	0.11	0.19	0.84	---	---	0.90	2.10
Hydrogen Chloride	0.25	1.08	---	---	---	---	---	---	0.25	1.08
Dioxins/Furans	2.32E-07	1.01E-06	---	---	---	---	---	---	2.32E-07	1.01E-06
Dioxins/Furans TEQ	1.36E-09	5.94E-09	---	---	---	---	---	---	1.36E-09	5.94E-09
Lead	9.04E-04	3.96E-03	---	---	---	---	---	---	9.04E-04	3.96E-03
Cadmium	2.26E-04	9.90E-04	---	---	---	---	---	---	2.26E-04	9.90E-04
Mercury	4.46E-04	1.96E-03	---	---	---	---	---	---	4.46E-04	1.96E-03
Beryllium	5.44E-03	2.38E-02	---	---	4.18E-07	1.83E-06	---	---	5.44E-03	2.38E-02
Chromium VI	1.10E-04	4.82E-04	---	---	4.88E-05	2.14E-04	---	---	1.59E-04	6.96E-04
Arsenic	3.05E-04	1.34E-03	---	---	6.97E-06	3.05E-05	---	---	3.12E-04	1.37E-03
Chlorine	1.00	4.38	---	---	---	---	---	---	1.00	4.38
Nickel	0.50	2.19	---	---	7.32E-05	3.20E-04	---	---	0.50	2.19
Hydrogen Fluoride	1.00	4.38	---	---	---	---	---	---	1.00	4.38
Manganese	0.34	1.50	---	---	1.32E-05	5.80E-05	---	---	0.34	1.50
Antimony	7.63E-04	3.34E-03	---	---	---	---	---	---	7.63E-04	3.34E-03
Aluminum	1.01E-02	4.43E-02	---	---	---	---	---	---	1.01E-02	4.43E-02
Barium	1.82E-04	7.96E-04	---	---	1.53E-04	6.71E-04	---	---	3.35E-04	1.47E-03
Copper	7.01E-05	3.07E-04	---	---	2.96E-05	1.30E-04	---	---	9.97E-05	4.37E-04
Hydrogen Bromide	8.10E-04	3.55E-03	---	---	---	---	---	---	8.10E-04	3.55E-03
Iron	8.08E-04	3.54E-03	---	---	---	---	---	---	8.08E-04	3.54E-03
Silver	8.10E-04	3.55E-03	---	---	---	---	---	---	8.10E-04	3.55E-03
SO_3	1.70E-02	7.43E-02	---	---	---	---	---	---	1.70E-02	7.43E-02
Thallium	6.17E-05	2.70E-04	---	---	---	---	---	---	6.17E-05	2.70E-04
Total PCBs	2.61E-06	1.14E-05	---	---	---	---	---	---	2.61E-06	1.14E-05
Benzene	---	---	3.89E-03	9.73E-04	---	---	---	---	3.89E-03	9.73E-04
Toluene	---	---	1.41E-03	3.52E-04	1.18E-04	5.19E-04	---	---	1.53E-03	8.71E-04
Xylenes	---	---	9.68E-04	2.42E-04	---	---	---	---	9.68E-04	2.42E-04
Formaldehyde	---	---	3.96E-04	9.89E-05	2.61E-03	1.14E-02	---	---	3.01E-03	1.15E-02

Table B-7
Stericycle, Inc. - Haw River Facility
Summary of Facility Total Potential Emissions

Pollutant	Incinerators		Emergency Generator		Insignificant NG Combustion		Cooling Tower		Facility Total	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Acetaldehyde	---	---	1.26E-04	3.16E-05	---	---	---	---	1.26E-04	3.16E-05
Acrolein	---	---	3.95E-05	9.88E-06	---	---	---	---	3.95E-05	9.88E-06
Naphthalene	---	---	6.52E-04	1.63E-04	2.12E-05	9.31E-05	---	---	6.73E-04	2.56E-04
2-Methylnaphthalene	---	---	---	---	4.18E-07	1.83E-06	---	---	4.18E-07	1.83E-06
3-Methylchloranthrene	---	---	---	---	3.14E-08	1.37E-07	---	---	3.14E-08	1.37E-07
7,12-Dimethylbenz(a)anthracene	---	---	---	---	2.79E-07	1.22E-06	---	---	2.79E-07	1.22E-06
Acenaphthene	---	---	---	---	3.14E-08	1.37E-07	---	---	3.14E-08	1.37E-07
Acenaphthylene	---	---	---	---	3.14E-08	1.37E-07	---	---	3.14E-08	1.37E-07
Anthracene	---	---	---	---	4.18E-08	1.83E-07	---	---	4.18E-08	1.83E-07
Benz(a)anthracene	---	---	---	---	3.14E-08	1.37E-07	---	---	3.14E-08	1.37E-07
Benzo(a)pyrene	---	---	---	---	2.09E-08	9.15E-08	---	---	2.09E-08	9.15E-08
Benzo(b)fluoranthene	---	---	---	---	3.14E-08	1.37E-07	---	---	3.14E-08	1.37E-07
Benzo(g,h,i)perylene	---	---	---	---	2.09E-08	9.15E-08	---	---	2.09E-08	9.15E-08
Benzo(k)fluoranthene	---	---	---	---	3.14E-08	1.37E-07	---	---	3.14E-08	1.37E-07
Chrysene	---	---	---	---	3.14E-08	1.37E-07	---	---	3.14E-08	1.37E-07
Dibenzo(a,h)anthracene	---	---	---	---	2.09E-08	9.15E-08	---	---	2.09E-08	9.15E-08
Dichlorobenzene	---	---	---	---	2.09E-05	9.15E-05	---	---	2.09E-05	9.15E-05
Fluoranthene	---	---	---	---	5.23E-08	2.29E-07	---	---	5.23E-08	2.29E-07
Fluorene	---	---	---	---	4.88E-08	2.14E-07	---	---	4.88E-08	2.14E-07
Hexane	---	---	---	---	3.14E-02	0.14	---	---	3.14E-02	0.14
Indeno(1,2,3-cd)pyrene	---	---	---	---	3.14E-08	1.37E-07	---	---	3.14E-08	1.37E-07
Phenanthrene	---	---	---	---	2.96E-07	1.30E-06	---	---	2.96E-07	1.30E-06
Pyrene	---	---	---	---	8.71E-08	3.81E-07	---	---	8.71E-08	3.81E-07
Cobalt	---	---	---	---	1.46E-06	6.41E-06	---	---	1.46E-06	6.41E-06
Manganese	---	---	---	---	6.62E-06	2.90E-05	---	---	6.62E-06	2.90E-05
Nickel	---	---	---	---	3.66E-05	1.60E-04	---	---	3.66E-05	1.60E-04
Selenium	---	---	---	---	4.18E-07	1.83E-06	---	---	4.18E-07	1.83E-06
Butane	---	---	---	---	3.66E-02	0.16	---	---	3.66E-02	0.16
Ethane	---	---	---	---	5.40E-02	0.24	---	---	5.40E-02	0.24
Pentane	---	---	---	---	4.53E-02	0.20	---	---	4.53E-02	0.20
Propane	---	---	---	---	2.79E-02	0.12	---	---	2.79E-02	0.12
Molybdenum	---	---	---	---	1.92E-05	8.39E-05	---	---	1.92E-05	8.39E-05
Vanadium	---	---	---	---	4.01E-05	1.75E-04	---	---	4.01E-05	1.75E-04
Zinc	---	---	---	---	5.05E-04	2.21E-03	---	---	5.05E-04	2.21E-03
CO_2e	7,265.25	31,821.78	827.34	206.84	4,160.49	18,222.95	---	---	12,253.08	50,251.56