

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Northern Regional Office**

STATEMENT OF LEGAL AND FACTUAL BASIS

Covanta Alexandria/Arlington, Inc.
Alexandria, Virginia
Permit No. NRO71895

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Covanta Alexandria/Arlington, Inc. has applied for a renewal of the Title V Operating Permit for its Alexandria facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

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FACILITY INFORMATION

Permittee

Covanta Alexandria/Arlington, Inc.
5301 Eisenhower Avenue
Alexandria, Virginia 22304

Facility

Covanta Alexandria/Arlington, Inc.
5301 Eisenhower Avenue
Alexandria, Virginia 22304

County-Plant Identification Number: 51-080-0139

SOURCE DESCRIPTION

NAICS Code: 562213 – Solid Waste Combustor and Incinerator. Covanta Alexandria/Arlington (Covanta) operates a municipal solid waste (MSW) combustion facility with energy recovery. The facility maintains three (3) 'large' municipal waste combustion (MWC) units, each with capacity to combust 325 tons of MSW per day (nominal). The MWC units are water wall boilers with integrated reciprocating grate stokers. Each combustor is also equipped with #2 fuel oil-fired auxiliary burners that are used during startup, shutdown, and malfunction, and to provide flame stabilization. Products of combustion from each combustor are controlled by good combustion practices, ammonia injection (selective non-catalytic reduction), a combination of spray dryer and fabric filter, and activated carbon injection to reduce nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter (PM and PM-10), acid gases, metals and complex organics among others. Steam generated by the boilers drive two turbines that each generates 14.5 MW of electricity for sale to the electric grid.

The facility is a Title V major source of sulfur dioxide, nitrogen oxides, carbon monoxide, and hazardous air pollutants (hydrogen chloride), and CO₂-equivalent emissions. This source is located in a nonattainment area for ozone, maintenance area for PM_{2.5}, and an attainment area for all remaining criteria pollutants, and is a PSD major source.

On October 4, 1984, the facility was issued its initial permit to construct and operate through a PSD Permit. This permit has been amended ten times since the initial issuance. Construction on each MWC unit commenced in February of 1988. The PSD Permit document dated September 27, 2010 (Attachment B), reflects the original approval and the subsequent amendments. Coincident with the most recent PSD Permit Amendment (March 16, 2010), a mNSR Permit was issued also on March 16, 2010. This mNSR Permit underwent a minor amendment on September 27, 2010 (Attachment C).

The facility was issued its initial Title V Federal Operating Permit on February 28, 2002. The facility is currently operating under application shield for the Title V Permit Renewal issued December 8, 2010.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, was most recently conducted on April 9, 2015. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

CHANGES TO EXISTING TITLE V PERMIT

The following are changes to the existing Title V permit since the last renewal.

| | |
|--|---|
| Facility Information / Emission Units: | Updated emission unit list to include emergency generator, which is subject to federal MACT Subpart ZZZZ requirements. (previously listed as 'insignificant activity/emission unit') |
| Emergency Generator Requirements: | Added MACT Subpart ZZZZ requirements for the existing diesel-fired (compression ignition) generator rated at 230 kW/hr. |
| RACT notification | Added the 9 VAC 5 Chapter 40, Article 51 requirement to make RACT determination to comply with 2008 ozone standard |
| Removal of Malfunction as Affirmative Defense provisions | Four conditions (entitled "Malfunction as an Affirmative Defense") have been removed from the General Conditions section. State regulations at 9 VAC 5-20-180 G have been revised (effective June 1, 2016) to remove allowance of affirmative defense for violations of emissions limits during startup, shutdown and malfunction, consistent with EPA's 6/12/15 SIP Call (80 FR 33840) |
| Entire Permit: | Updated to a numbered condition format rather than sections. |

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

| Emission Unit ID | Stack ID | Emission Unit Description | Size/Rated Capacity* | Pollution Control Device (PCD) Description | PCD ID | Pollutant Controlled | Applicable Permit Date |
|--|----------|--|---|---|--------|---|---|
| Municipal Waste Combustor Equipment | | | | | | | |
| 001-01 | 001 | Faber Combustion Unit Model # unknown (Construction Date Feb. 1988) | 51.65 million Btu/hr (Fuel Oil) | --- | --- | --- | PSD Permit dated September 27, 2010; Minor NSR Permit dated September 27, 2010 |
| 001-02 | 001 | Keeler/Dorr-Oliver municipal waste combustor with Martin stokers Model # MK 325 (Construction Date Feb. 1988) | 121.8 million Btu/hr (MSW - based on a higher heating value of 4500 Btu/lb for MSW) | Asea, Brown Boveri (ABB) Environmental Systems fabric filter Model # 266-14 | 01 | Particulate Matter and Lead | PSD Permit dated September 27, 2010; Minor NSR Permit dated September 27, 2010 |
| | | | | ABB Environmental Systems spray tower absorber Field Constructed | 02 | Sulfur Dioxide, Hydrogen Chloride, Hydrogen Fluoride, Mercury, Nitrogen Oxides (as NO ₂) | |
| | | | | Activated Carbon Injection System Field Constructed | 03 | | |
| | | | | Covanta designed Aqueous Ammonia Furnace Injection, Field Constructed | 13 | | |

| Emission Unit ID | Stack ID | Emission Unit Description | Size/Rated Capacity* | Pollution Control Device (PCD) Description | PCD ID | Pollutant Controlled | Applicable Permit Date |
|------------------|----------|---|---|--|----------------------------------|---|--|
| 002-01 | 002 | Faber Combustion Unit Model # unknown (Construction Date Feb. 1988) | 51.65 million Btu/hr (Fuel Oil) | --- | --- | --- | PSD Permit dated September 27, 2010; Minor NSR Permit dated September 27, 2010 |
| 002-02 | 002 | Keeler/Dorr-Oliver municipal waste combustor with Martin stokers Model # MK 325 (Construction Date Feb. 1988) | 121.8 million Btu/hr (MSW - based on a higher heating value of 4500 Btu/lb for MSW) | Asea, Brown Boveri (ABB) Environmental Systems fabric filter Model # 266-14 ABB Environmental Systems spray tower absorber Field Constructed Activated Carbon Injection System Field Constructed Covanta designed Aqueous Ammonia Furnace Injection Field Constructed | 05 06 07 14 | Particulate Matter and Lead Sulfur Dioxide, Hydrogen chloride, Hydrogen fluoride, Mercury, Nitrogen Oxides (as NO ₂) | PSD Permit dated September 27, 2010; Minor NSR Permit dated September 27, 2010 |

| Emission Unit ID | Stack ID | Emission Unit Description | Size/Rated Capacity* | Pollution Control Device (PCD) Description | PCD ID | Pollutant Controlled | Applicable Permit Date |
|------------------|----------|---|--|---|--------|---|--|
| 003-01 | 003 | Faber Combustion Unit Model # unknown (Construction Date Feb. 1988) | 51.65 million Btu/hr (Fuel Oil) | --- | --- | | PSD Permit dated September 27, 2010; Minor NSR Permit dated September 27, 2010 |
| 003-02 | 003 | Keeler/Dorr-Oliver municipal waste combustor with Martin stokers Model # MK 325 (Construction Date Feb. 1988) | 121.8 million Btu/hr (MSW - based on a higher heating value of 4500 Btu/lb for MSW) | Asea, Brown Boveri (ABB) Environmental Systems fabric filter Model # 266-14 | 09 | Particulate Matter and Lead | PSD Permit dated September 27, 2010; Minor NSR Permit dated September 27, 2010 |
| | | | | ABB Environmental Systems spray tower absorber Field Constructed | 10 | Sulfur Dioxide, Hydrogen chloride, Hydrogen fluoride, Mercury and Nitrogen Oxides (as NO ₂) | |
| | | | | Activated Carbon Injection System Field Constructed | 11 | | |
| | | | | Covanta designed Aqueous Ammonia Furnace Injection Field Constructed | 15 | | |

| Emission Unit ID | Stack ID | Emission Unit Description | Size/Rated Capacity* | Pollution Control Device (PCD) Description | PCD ID | Pollutant Controlled | Applicable Permit Date |
|----------------------------|----------|---|--------------------------|--|--------|-----------------------|---|
| Emergency Generator | | | | | | | |
| 008-01 | 008 | Emergency Diesel Generator (Construction Date Mar. 1986) | 355 HP, 230 kW | - | - | - | - |
| Storage Silos | | | | | | | |
| 004-01 | 004 | Carbon Silo Storage Silo with pneumatic transfer of material (Construction Date Aug. 1993) | 2010 ft ³ /hr | Fabric Filter | 16 | Particulate Matter | PSD Permit dated September 27, 2010; Minor NSR Permit dated September 27, 2010 |
| 005-01 | 005 | Lime Silo Storage Silo with transfer of lime slurry (Construction Date Jun. 1999) | 2548 ft ³ /hr | Fabric Filter | 17 | Particulate Matter | PSD Permit dated September 27, 2010; Minor NSR Permit dated September 27, 2010 |
| 007-01 | 007 | Dolomitic Lime Silo Storage Silo with pneumatic transfer of material (Construction Date Dec. 2003) | 973 ft ³ /hr | Fabric Filter | 18 | Particulate Matter | Minor NSR permit dated September 27, 2010 |
| Storage Tanks | | | | | | | |
| 006-01 | 006 | Underground Storage Tank for fuel oil (Construction Date Nov. 1998) | 20,000 gallons | --- | --- | --- | --- |

* The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

EMISSIONS INVENTORY

A copy of the 2015 annual emission update is attached as Attachment A. Emissions are summarized in the following tables.

2015 Actual Criteria Pollutant Emissions (as reported)

| Emission Unit | 2015 Criteria Pollutant Emissions (tons/yr) | | | | |
|---------------|---|------|-----------------|-------------------------------|-------|
| | VOC | CO | SO ₂ | PM ₁₀ ^a | NOx |
| 001 | 0.4 | 19.3 | 1.3 | 0.2 | 155.3 |
| 002 | 0.4 | 19.9 | 1.7 | 0.5 | 157.1 |
| 003 | 0.4 | 17.5 | 0.8 | 0.3 | 157.5 |
| Total | 1.2 | 56.7 | 3.8 | 1.0 | 469.9 |

^a PM₁₀ emissions (as reported) are filterable portion only.

2015 Facility-Wide Actual Hazardous Air Pollutant (HAP) Emissions (as reported)

| Pollutant | 2015 HAP Emissions (tons/yr) |
|-------------------------|------------------------------|
| Hydrogen Chloride (HCl) | 4.5 |
| Hydrogen Fluoride (HF) | 0.2 |

EMISSION UNIT APPLICABLE REQUIREMENTS –

Municipal Waste Combustor Equipment Requirements – (Emissions Units 001-01, 001-02, 002-01, 002-02, 003-01, and 003-02)

There are three primary regulatory mechanisms that form the basis of the majority of applicable requirements in this permit. They are the PSD permit issued September 27, 2010, the Minor NSR permit issued September 27, 2010, and Virginia State Air Pollution Control Board Rule 4-54 – Emissions Standards for Large Municipal Waste Combustors (MWCs). Rule 4-54 is applicable to MWC units with a combustion capacity greater than 250 tons per day of MSW for which construction was commenced on or before September 20, 1994.

Under sections 111 and 129 of the Clean Air Act, EPA issued (on December 19, 1995) final emission guidelines applicable to MWCs (40 CFR Part 60, Subpart Cb – *Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors that are Constructed on or before September 20, 1994*). Rule 4-54 was promulgated on August 4, 1999, to implement the EPA emission guidelines. EPA took direct final action approving Rule 4-54 on October 29, 2004, making it federally enforceable¹. Rule 4-54 established emission limits and monitoring, operating and recordkeeping requirements. It includes concentration-based emission limits for several criteria and hazardous air pollutants, establishes operating parameter limits on steam production, fabric filter inlet temperature and mercury injection

¹ EPA issued revisions to the 40 CFR 60 Subpart Cb Emissions Guidelines on May 10, 2006. Those revisions are under reconsideration by EPA (see 72 FR 13016, March 20, 2007). EPA subsequently advised Virginia DEQ not to proceed with revisions to Rule 4-54 that would have incorporated the 2006 federal revisions to Subpart Cb. The 2006 revisions to Subpart Cb remain under reconsideration.

system activated carbon feed. It also requires continuous and periodic compliance demonstration mechanisms including continuous emissions monitoring, operating parameter monitoring, performance testing, and record keeping and reporting.

Limitations

The following applicable limitations are requirements from Conditions 4, 6 through 9, 12 through 26, 172, 173, 178, 182, and 183 of the PSD Permit issued September 27, 2010. A copy of the permit is attached as Attachment B.

Condition 4: PM emissions from the municipal waste combustors shall be controlled by fabric filters.

Conditions 6: Approved fuel for the municipal waste combustors are municipal solid waste and No. 2 fuel oil. (No. 2 fuel oil is used as an auxiliary fuel during low Btu firing conditions and light-off.)

Condition 6A: No. 2 fuel oil shall not exceed a sulfur limit of 0.5%. When incorporated into the Title V, the requirement for the No. 2 fuel oil to meet ASTM specifications was updated from D396-78 to D396-98, which is the current ASTM incorporated by reference into the Commonwealth of Virginia State Air Pollution Control Board's (Board) Regulations for the Control and Abatement of Air Pollution (Regulations).

Condition 7: Limits the fuel-oil firing of each MWC to an annual capacity factor not to exceed ten percent and describes method to determine annual capacity factor.

Condition 8: No. 2 fuel burners shall be used to maintain appropriate furnace temperatures.

Condition 9: Emission concentration limits for PM, CO, SO₂, NO_x, HCl, cadmium, lead, mercury, and dioxins/furans for each municipal waste combustor (MWC). The NO_x and CO emission concentration limits are based on the facility's MWCs being mass burn waterwall MWCs, which are defined as a field erected combustion unit having energy (heat) recovery in the furnace (i.e. radiant heat transfer section) of the combustor.

Condition 12: Visible emissions limit of 10% opacity (6-minute average) for each municipal waste combustor.

Condition 13: Fugitive dust/emissions standards for each municipal waste combustor and the ash conveying system.

Condition 14: Annual steam production limit of 1,170,400 tons.

Condition 15: Four-hour average steam load level shall not operate greater than 110% of the maximum demonstrated MWC unit load.

Condition 16: Four-hour average temperature, measured at each fabric filter, shall not exceed 17°C (30.6°F) above the maximum demonstrated fabric filter temperature.

Condition 17 - 26: Operator training and certification requirements for MWC units.

Condition 20 – Removed allowance for a “provisionally certified chief facility operator or provisionally certified shift supervisor” scheduled to take the full certification exam according to the schedule specified in 9 VAC 5-40-8110.B.1. This date (August 1, 2000) has passed.

Condition 172-173: Startup, shutdown, and malfunction provisions for MWC units. MWC unit charging rate capacity calculation/determination.

Condition 177: Requires provision of testing ports upon request and in accordance with applicable performance specifications.

Condition 178: Clarifies that the PSD permit is not a RCRA permit.

Condition 182: Facility or control equipment malfunction requirements for hazardous air pollutant processes such as MWC units.

Condition 183: Facility obligations concerning violation of ambient air quality standards.

The following applicable limitations are requirements from Conditions 6, 7, 10, and 11 of the Minor NSR Permit issued September 27, 2010. A copy of the permit is attached as Attachment C.

Condition 6: Definition of acceptable municipal solid waste.

Condition 7: Annual steam production limit of 1,170,400 tons.

Condition 10: Emission limits for PM, PM₁₀, CO, SO₂, NO_x, VOC, HCl, MWC Metals (cadmium, lead and mercury), MWC acid gases (sum of SO₂ and HCl), cadmium, lead, mercury, dioxins/furans, MWC organics, H₂SO₄, and beryllium for each municipal waste combustor.

Condition 11: Facility-wide annual emission limits for PM, PM₁₀, CO, SO₂, NO_x, VOC, HCl, MWC Metals, MWC acid gasses, , dioxins/furans, H₂SO₄, and beryllium.

The following specific emission requirements in the Code of Federal Regulations (CFR) have been determined to be applicable:

40 CFR 61, Subpart C – National Emission Standards for Beryllium. Covanta does not believe this regulation is applicable to the facility because they say beryllium-containing waste is not accepted by the facility and they cite an EPA Region IV guidance letter dated April 6, 2000 and the attached memo dated July 16, 1979 regarding beryllium. Thus, Covanta Alexandria/Arlington, Inc. did not include it as an applicable requirement in their Title V application. The VA DEQ believes the beryllium NESHAP is still applicable and the Subpart C emissions standard for beryllium has been included in the TV permit. Covanta has been advised that until the following conditions are met, 40 CFR 61 Subpart C will be assumed to apply to the facility:

- The DEQ receives letters from all Covanta's customers (waste generators) that there is not any beryllium in their waste; or
- Covanta writes a letter to EPA Region III requesting a variance and a variance is granted; or
- Covanta writes a letter to EPA Region III asking if they concur with the memo from Region IV and the attached memo dated July 16, 1979. If Region III agrees, the VA DEQ would

need a letter from Covanta stating that they do not accept waste from foundries, extraction plants, ceramic plants, or propellant plants.

Monitoring

The monitoring requirements in Conditions 115 through 135 of the PSD permit meet Part 70 periodic monitoring requirements. These permit conditions are based on New Source Performance Standards (NSPS), 40 CFR 60, proposed after November 15, 1990. The permit conditions cite Emissions Standards for Large Municipal Waste Combustors, Rule 4-54 of the State Regulations since EPA approved this rule into Virginia's 111d plan on October 29, 2004, making it federally enforceable. Additional monitoring conditions have been added to account for 40 CFR 61 Subpart C (National Emission Standards for Beryllium).

The permittee will monitor differential pressure drop across each fabric filter on an ongoing basis. The continuous opacity monitor will be used as an indicator of proper operation of the fabric filter.

A continuous emission monitoring system (CEMS) shall be installed, calibrated, maintained, and operated to record the output of the system by measuring the oxygen or carbon dioxide content of the flue gas at each location where CO, SO₂, or NO_x, are monitored. A CEMS for CO shall be installed, calibrated, maintained, and operated at the combustor outlet to record the output of the system. The continuous monitoring system requirements for NO_x, SO₂, and opacity are listed in the testing section because Rule 4-54 of the SAPCB Regulations classifies it under the testing and procedures section.

To determine compliance with MWC load level requirements there is a steam flow meter to measure steam in megagrams per hour or kilopounds per hour on a continuous basis and record the output of the monitor. Steam flow shall be calculated in four-hour block arithmetic averages. All signal conversion elements associated with steam measurements must be calibrated before each annual dioxin/furan test.

To determine compliance with the maximum particulate matter control device temperature requirements there is a device to measure on a continuous basis the temperature of the flue gas stream as the inlet to each particulate matter control device. Temperature shall be calculated in four-hour block arithmetic averages.

Recordkeeping

Recordkeeping requirements for the MWCs are listed in Conditions 137 through 151 of the PSD permit. The following records are required to be maintained:

- The emissions concentrations and parameters measured using CEMS.
- When any of the average emission concentrations, percent reduction, operating parameters, or the opacity are above applicable limits, the calendar dates, reason for exceedance, and description of corrective action taken.
- Average carbon mass feed rate during all annual performance tests for mercury, for each hour of operation, calendar quarter. The average carbon mass feed rate shall be based on the sampling requirements and duration as specified by USEPA Method 29 or DEQ-approved equivalent.

- Calendar dates for which the minimum number of hours of SO₂, NO_x, and CO emissions data, MWC unit load data and PM control device temperature data were not obtained along with reasons for not obtaining data and description of corrective action.
- Each occurrence where SO₂, NO_x, and CO emissions data, MWC unit load data and PM control device temperature data were excluded from the calculation of average emission concentration or parameter and the reason for excluding the data.
- Results of the daily drift test and quarterly accuracy determinations for SO₂, NO_x, and CO CEMS.
- Results of all annual performance tests.
- Operator training and certification records.
- Calendar dates of when the average activated carbon mass feed rates are less than the hourly activated carbon mass feed rates estimated during the performance tests for mercury emissions and reason for such feed rate and description of corrective action taken.
- Calendar dates of when the activated carbon injection system operating parameters are below the levels estimated during the performance tests with reasons for occurrences and a description of corrective action taken.
- Format of records.
- Amount of No. 2 fuel oil used as auxiliary fuel in each of the furnace/municipal waste combustors.
- All scale house receipts and a log of daily pit inventory estimations.
- Annual steam production.
- A copy of the maintenance schedule and records of scheduled and unscheduled maintenance and operator training.

Testing

Continuous Emissions Monitoring Systems (CEMS) for NO_x and SO₂ as well as continuous opacity monitoring systems (COMS) are required to monitor and record the emissions from the exhaust of each MWC unit.

Annual performance tests (no more than 12 calendar months following the previous performance test) shall be conducted to determine emissions/opacity of SO₂, NO_x, CO, PM, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, beryllium, sulfuric acid mist, and fugitive ash emissions. All performance tests shall consist of a minimum of three test runs conducted under representative full load operating conditions. The average of the three test runs will be used to determine compliance.

If performance tests over a two year period indicate dioxin/furan emissions less than 15 ng/dscm for all MWC units, the owner may choose to conduct dioxin/furan performance tests for one MWC unit a year. At minimum, a performance test for dioxin/furan for one MWC unit shall be tested annually. Each year a different MWC unit will be tested in sequence. If any annual performance test indicates emission levels greater than 15 ng/dscm of dioxins/furans, dioxin/furan performance tests shall be conducted on all MWC units.

According to EPA document No. 0106-00-002-002 "Municipal Waste Combustion: Background Document for Federal Plan – Public Comments and Responses," page 9-1, the carbon injection feed rate established during the performance test is not an instantaneous average. The baseline carbon feed rate is based on the average feed rate during mercury (or dioxin) performance test. At the Covanta Alexandria/Arlington facility, activated carbon is used primarily to control mercury. DEQ

included in the permit that the carbon mass feed rate should be based on the sampling requirements and duration as specified by USEPA Method 29 or approved equivalent.

Method 1 shall be used to select the sampling site and number of traverse points. Method 3, 3A, or 3B, as applicable, shall be used for gas analysis. Alternative methods as approved by the DEQ on a case-by-case basis may be used.

The department and EPA have the authority to require additional testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The permit includes requirements to submit excess emissions reports, annual and semi-annual reports.

The annual reports shall include:

- Annual emissions and certification of compliance with facility annual permit mass emission limitations.
- Demonstrate compliance with all the lb/MMBtu and lb/hr emission limitations; or for HCl, SO₂, and mercury the percent removal requirements.
- Document that the actual CO emissions have not increased more than 99 tpy from an average of 1998 & 1999 facility-wide actual CO emissions of 46.5 tpy, calculated on a cumulative basis.

The semi-annual report shall include:

- PM, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, sulfuric acid mist, and fugitive ash emission levels during performance tests.
- Highest emission level recorded for SO₂, NO_x, CO, MWC unit load level, and particulate matter control device temperature data.
- Highest opacity level measured.
- Total number of days the minimum number of hours of data for SO₂, NO_x, CO, MWC unit load level, and particulate matter control device temperature were excluded from the calculation of average emission concentrations or parameters.
- Submit additional information if any recorded pollutant or parameter does not comply with the pollutant or parameter limit specified in this permit.
- Carbon injection system operating parameters that indicate carbon mass feed rate.

Requirements for Storage Silos – (Emission Units 004-01, 005-01, and 007-01)

Limitations

The following applicable limitations are requirements from Condition 4A, 10A and 13A of the major PSD Permit issued on September 27, 2010. A copy of the permit is attached as attachment B.

Condition 4A: Particulate matter emissions from the carbon and lime silos shall be controlled by fabric filters.

Condition 10A: Particulate matter emission limit.

Condition 12A: Visible emission limit of 20% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity.

The following applicable limitations are requirements from Condition 3 of the Minor NSR Permit issued on September 27, 2010. A copy of the permit is attached as Attachment C.

Condition 3: Particulate matter from the Dolomitic lime silo shall be controlled by fabric filter.

Monitoring

There is no monitoring for the visible emission requirement for the storage silos. Operation of the storage silos with fabric filters that have been properly maintained should not cause an exceedance of the visible emission limit.

Testing

This section of the permit does not require source tests. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Requirements for Storage Tank (Emission Unit 006-01)

Recordkeeping

Although this storage vessel is no longer subject to NSPS Subpart Kb (*Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984*), the draft permit retains the requirements for maintaining records of the dimension of the storage vessel and an analysis showing the capacity of the storage vessel, as required by the facility's PSD Permit (as amended 9/27/2010).

Requirements for Emergency Diesel Generator (Emissions Unit 008-01)

The emergency diesel generator (355 bhp/230 kW) has previously been listed as IU-4 in the Insignificant Activities table of Covanta's Title V permit. However, the generator is now subject to 40 CFR 63, Subpart ZZZZ (*National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*), which has a compliance date since the last issuance of the Title V permit. Accordingly, the generator can no longer be considered an insignificant unit (which by definition are assumed to have no applicable requirements); it has been removed from the insignificant units table and included in the main body of the permit.

Certain provisions of 40 CFR Part 63, Subpart ZZZZ are applicable to the emergency diesel generator. The unit is considered an emergency engine rated at less than 500 bhp at a major HAP source; consequently the following requirements are included in the Title V Permit for the unit:

- Requires the emergency diesel generator to be operated in compliance with 40 CFR 63, Subpart ZZZZ unless the federal operating permit is more restrictive.

(40 CFR 63 Subpart ZZZZ)

- Restricts the emergency diesel generator to be used for emergency purposes only, but also allows 50 hours for non-emergency situations as described in 40 CFR §63.6640 (f).
(40 CFR 63 Subpart ZZZZ)
- Provides the work practice standards for the emergency diesel generator (oil & filter change, inspect/replace air cleaner, belts and hoses at specified intervals)
(40 CFR 63.6602 and Table 2c of Subpart ZZZZ)
- Limits fuel sulfur content to 0.0015% by weight if the unit operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).
(40 CFR 63.6604(b))
- Requires permittee to minimize time engine spends at idle during startup
(40 CFR 63.6625(h))
- Requires that the emergency diesel generator be operated and maintained in accordance with the manufacturer's emission-related operation and maintenance instructions or follow own maintenance plan meeting certain requirements.
(40 CFR 63.6625(e))
- Requires that a non-resettable hour meter be installed on the emergency diesel generator
(40 CFR 63.6625(f))
- Recordkeeping of maintenance performed on the generator and of annual hours of operation for the generator, calculated monthly as the sum of each consecutive twelve-month period

(40 CFR §63.6655)

Facility Wide Conditions

The following notification/reporting requirements are applicable to the facility:

The permittee shall notify the DEQ of the intention to shutdown or bypass air pollution control equipment for necessary scheduled maintenance, which results in excess emissions for more than one-hour, at least 24-hours prior to shutdown.

STREAMLINED/OBSOLETE REQUIREMENTS

Certain Conditions of the previously issued PSD permit for the source are obsolete, no longer serve any meaningful purpose, and are unnecessary for Title V Permit considerations. These Conditions are as follows:

Condition 13A has not been included. This requirement is from 40 CFR 60, Subpart E which is no

longer applicable to this facility.

Conditions 35, 39, 56, 63, 70, 80, 86, 95 and 108 have not been included. *Initial* performance tests for SO₂, NO_x, CO, PM, cadmium, lead, mercury, dioxins/furans, hydrogen chloride and fugitive ash emissions have already been performed. PSD Condition 39 (regarding testing for cadmium, lead and mercury) is functionally equivalent to PSD Conditions 40 (for cadmium and lead) and 48 (for mercury) and has therefore been omitted from the Title V permit.

Condition 105 requires that the procedures in Conditions 106 through 109 be used to determine compliance with the fugitive ash emission limit. Condition 105 has not been included because the other referenced permit conditions are self-explanatory and can be used to determine compliance with the fugitive ash emission limit.

Condition 115 has not been included. The requirements of 9 VAC 5-40-40 are already covered in the monitoring section of the permit. A permit condition was added that the permittee shall comply with the applicable general provisions of 40 CFR 60.

Condition 119 has not been included. The initial performance tests have already been performed.

Condition 136 has not been included. The recordkeeping and reporting requirements of 9 VAC 5-40-50 are already covered in the permit except for 9 VAC 5-40-50B. A permit condition was added citing 9 VAC 5-40-50B, which requires that the permittee shall maintain records of startup, shutdown or malfunction. Another permit condition was added citing 9 VAC 5-40-50.A.2, which requires that the permittee shall submit notification to the DEQ thirty days in advance of a proposed emission test that will be used to comply with an emissions standard.

Condition 170 has not been included. The initial performance test report has already been submitted.

Condition 171, which references 9 VAC 5-40-20 has not been included. 9 VAC 5-40-20.A.3 is not included in the SIP and therefore cannot be referenced or cited in Title V permits. 9 VAC 5-50-20 is cited in General Condition O of the permit and addresses startup, shutdown and malfunction requirements.

Condition 174 states that 40 CFR 62 Subpart FFF applies to the extent it does not conflict with Rule 4-54 of State Regulations. Since Rule 4-54 was approved and incorporated into the 111d plan in 2004 and is federally enforceable, Subpart FFF is no longer applicable therefore this permit condition was not included.

Condition 175 has not been included. The compliance schedule listed in 40 CFR 62.14108 has past and been achieved.

Condition 176 has not been included. The compliance schedule for the municipal waste combustor operator training and certification requirements have past and been achieved.

Condition 188 has not been included. The requirements in the disclaimer condition are already covered in the Title V permit. A generic condition was included which requires that the permittee shall comply with all the applicable requirements of 40 CFR 61 Subpart C, 40 CFR 60 Subparts Db and E and 40 CFR 62 Subpart FFF are no longer applicable to this facility. General Condition R.1 –

Reopening for Cause addresses that the Title V permit can be reopened prior to expiration if additional applicable federal requirements become applicable to a major source with a remaining permit term of three years or more.

The following NESHAP requirement has not been included for the reasons provided:

40 CFR 61.32(a) – NESHAP Subpart C requires that beryllium emissions for each municipal waste combustor not exceed 10 grams over a 24-hour period. 10 grams over a 24 hour period is equivalent to $9.17E-4$ lb/hr based on a 24-hour period and $2.75E-3$ lb/hr based on an 8-hour operating period. This NESHAP Subpart C requirement was not included in the permit because Condition 10 of the PSD permit was included which requires a more stringent emission limit of $6.0E-5$ lb/hr.

The following Virginia State Air Pollution Control Board (SAPCB) Regulation has not been included for the reasons provided:

9 VAC 5-40-80 was not included. This SAPCB Regulation requires that visible emissions shall not exceed 20% opacity, except for one six-minute period in any one hour of not more than 60% opacity. 9 VAC 5-40-8060 requires 10% opacity (6-minute average) shall not be exceeded. This Rule 4-54 requirement was included in the permit because it is more stringent than 9 VAC 5-40-80.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

FUTURE APPLICABLE REQUIREMENTS

- 9 VAC 5 Chapter 40, Article 51 (Rule 4-51): *Emissions Standards for Stationary Sources Subject to Case-by-Case RACT Determinations*

Covanta is located within the ten Virginia jurisdictions that are part of the Ozone Transport Region (OTR) defined by the federal Clean Air Act (CAA). The CAA mandates that major stationary sources, defined for specified emission control areas as those with the potential to emit (PTE) of at least 50 tpy of VOC or 100 tpy of NO_x, must implement Reasonably Available Control Technology (RACT) whenever EPA updates ozone air quality standards. Recent federal regulations specify that the RACT implementation date is no later than January 1, 2017, for the 2008 ozone standard.

At its September 11, 2015 meeting, the Virginia State Air Pollution Control Board adopted revisions to 9 VAC 5 Chapter 40, Article 51 that require that subject facilities provide RACT notification to DEQ by February 1, 2016. Since Covanta is located within the OTR and has the PTE above the specified thresholds, it is subject to the RACT notification requirement and submitted the required notification to DEQ on January 28, 2016. In accordance with 9 VAC 5-40-7390, Covanta is further required to

determine what constitutes RACT for its facility and to achieve compliance with the emission standard as expeditiously as possible but no later than January 1, 2017.

INAPPLICABLE REQUIREMENTS

This section includes federal requirements (e.g., NSPS, MACT, etc.) that may otherwise appear and includes the rationale for why they do not apply.

- The provisions of **40 CFR Part 98 – Mandatory Greenhouse Gas Reporting** require owners and operators of general stationary fuel combustion sources that emit 25,000 metric tons CO₂e or more per year in combined emissions from such units, to report greenhouse gas (GHG) emissions, annually. The definition of “applicable requirement” in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under CAA section 114(a)(1) and 208. Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program.

As a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit renewed after January 1, 2011. The current state minor NSR (or PSD) permit for Covanta contains no GHG-specific applicable requirements and there have been no modifications at the facility requiring a PSD permit. Therefore, there are no applicable requirements for the facility specific to GHG.

- The **Cross-State Air Pollution Rule (CSAPR)** (final revisions to 40 CFR Parts 51, 52 and 97 promulgated on August 8, 2011 as the “Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP approvals; Final Rule”, also referred to as the Transport Rule) does not apply to Covanta’s operations. CSAPR applies to boilers and combustion turbines serving an electrical generator with a nameplate capacity exceeding 25 MWe and producing power for sale. Covanta’s Alexandria facility has two steam turbines, each rated at 14.5 MW. Furthermore, CSAPR includes an exemption for solid waste incineration units for which total heat input from fossil fuels is less than 20%. Covanta’s operation meets the solid waste incinerator exemption criteria.
- **40 CFR 60 Subpart Db** (*Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units*) does not apply to Covanta. According to 40 CFR 60.40b(k), a facility subject to an EPA-approved section 111(d)/129 plan implementing 40 CFR 60 Subpart Cb is not covered by 40 CFR 60 Subpart Db. Covanta is subject to 9 VAC 5 Chapter 40 Article 54, which is Virginia’s EPA-approved plan implementing 40 CFR 60 Subpart Cb.
- The requirements of **40 CFR 60, Subpart E** are no longer applicable to this facility. See Federal Register dated May 10, 2006.
- The requirements of **40 CFR Part 60, Subpart Ea** (*New Source Performance Standards for Municipal Waste Combustors constructed after December 20, 1989 and on or before September 20, 1994*) are not applicable to this facility because the facility was not constructed between December 20, 1989 and September 20, 1994.
- New Source Performance Standard (NSPS) requirements, for Large Municipal Waste Combustors for which construction is commenced after September 20, 1994, or for which modification or

reconstruction is commenced after June 19, 1996, in **40 CFR Part 60, Subpart Eb**, are not currently applicable to the facility. According to NSPS Subpart Cb, physical or operational changes made to an existing municipal waste combustor unit primarily for the purposes of complying with NSPS Subpart Cb are not considered in determining whether the unit is a modified or reconstructed facility under NSPS Subpart Eb.

- The requirements of **40 CFR 60, Subpart IIII** (*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*) do not apply to the facility. Subpart IIII applies to engines constructed after July 1, 2005; Covanta's emergency generator was manufactured in March 1986.
- The requirements of **40 CFR 60, Subpart JJJJ** (*Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*) do not apply to the facility. Covanta's emergency generator is a compression-ignition engine.
- **40 CFR 61, Subpart E** (*National Emission Standards for Mercury*) does not apply to Covanta. Subpart E applies only to sources that process mercury ore, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, or incinerate or dry wastewater treatment plant sludge.
- National Emission Standards for Hazardous Air Pollutants (NESHAP) for Mercury in **40 CFR Part 63, Subpart E**, are not currently applicable to the facility. Covanta Alexandria/Arlington does not incinerate wastewater treatment plant sludge.
- **40 CFR 63 Subpart DDDDD** (*National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial and Institutional Boilers and Process Heaters*) does not apply to Covanta Alexandria/Arlington. The auxiliary burners (001-01, 002-01 and 003-01) are part of the MWC trains and are therefore exempt from Subpart DDDDD according to 40 CFR 63.7491(l).

COMPLIANCE PLAN

Covanta of Alexandria/Arlington, Inc. is currently in compliance with all applicable requirements. No compliance plan was included in the application or in the proposed permit.

COMPLIANCE ASSURANCE MONITORING (CAM)

CAM is not required at this facility for the following reasons:

- Municipal Waste Combustors constructed on or before September 20, 1994 in the Commonwealth of Virginia are subject to 9 VAC Chapter 40 Article 54: Emission Standards for Large Municipal Waste Combustors. Article 54 was written in accordance with section 111(d) and section 129 of the Clean Air Act. EPA took direct final action approving Rule 4-54 on October 29, 2004 making it federally enforceable. Part 64 – Compliance Assurance Monitoring established exemptions under 40 CFR 64.2 (b). Specifically, 40 CFR 64.2(b)(1)(i) states the requirements of Part 64 shall not apply to emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the ACT. As a result, emissions limits derived from Rule 4-54 are exempt from CAM. Pollutants subject to such limits are particulate matter (PM), mercury (Hg),

cadmium (Cd), lead (Pb), Carbon Monoxide (CO), sulfur dioxide (SO₂), hydrogen chloride (HCl), dioxins/furans (TCDD/TCDF), and nitrogen oxides (NO_x).

- SO₂, NO_x, and CO are also subject to BACT limits established pursuant to new source review. However, emissions are required to be monitored using Continuous Emissions Monitoring Systems (CEMS). According to 40 CFR 64.2(b)(1)(vi), emissions limits for which a Title V permit specifies a continuous compliance determination method (such as a CEMS) are exempt from CAM.
- HCl is subject to a BACT limit of 0.34 lbs/MMBtu. When converted to lbs per hour based on the heat input capacity of each MWC, the BACT limit is less stringent than the lbs/hr-equivalent of the Rule 4-54 limit of 29 ppmv, which is exempt from CAM because it was established after November 15, 1990 pursuant to section 111 of the CAA. The monitoring prescribed for the more stringent, CAM-exempt limit from section 111, should satisfy Part 64 for the non-exempt BACT limit. (Calculations are in Attachment D.)
- The facility's Title V permit also addresses volatile organic compounds (VOC) and Beryllium. Neither of these pollutants triggers CAM because their uncontrolled PTE (based on 2007-2009 stack test data) does not exceed the major source threshold.
- CAM does not apply to the other emissions units at the facility (emergency generator, storage silos or storage tank) because they do not use add-on control devices.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

| Emission Unit No. | Emission Unit Description | Citation ¹ | Pollutants Emitted (9 VAC 5-80-720 B) | Rated Capacity (9 VAC 5-80-720 C) |
|-------------------|------------------------------|-----------------------|---|-----------------------------------|
| IU-1 | MSW Building/Pit | 9 VAC 5-80-720B | PM, PM ₁₀ and VOC | N/A |
| IU-2 | Ash Building | 9 VAC 5-80-720B | PM, PM ₁₀ , SO ₂ , HCl, Cd, Pb and Hg | N/A |
| IU-3 | Water Heater | 9 VAC 5-80-720C.2 | N/A | 199,999 Btu/hr |
| IU-5 | Lime Slaker Area | 9 VAC 5-80-720B | PM, PM ₁₀ , VOC | N/A |
| IU-6 | Cooling Tower | 9 VAC 5-80-720A.71 | N/A | N/A |
| IU-7 | Aqueous Ammonia Storage Tank | 9 VAC 5-80-720A.42 | N/A | N/A |
| IU-8 | Diesel AST | 9 VAC 5-80-720B | VOC | N/A |

¹The citation criteria for insignificant activities are as follows:
 9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
 9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in *The Washington Times* newspaper, on May 5, 2016. All persons on the Title V mailing list were sent a copy of the public notice by either electronic mail or in letters (sent via USPS) on May 5, 2016. The affected state of Maryland and the District of Columbia were sent a copy of the public notice by electronic mail on May 5, 2016.

The '30-day public comment period' per 9 VAC 5-80-270 ran from May 5, 2016 through June 6, 2016. No comments were received from the public, Maryland or the District of Columbia.

The EPA Region 3 was sent a copy of the proposed permit and notified of the public notice on May 3, 2016. The EPA reviewed the draft permit as proposed permit concurrently with the public comment period. EPA provided comments via email on May 17, 2016. DEQ provided its responses to those comments on May 18, 2016, and with reply email on May 19, 2016, EPA concurred with the responses and had no further comments.

Attachment A
2015 Annual Emissions Update



E N E R G Y
for a cleaner world

Covanta Alexandria/Arlington, Inc.
5301 Eisenhower Ave
Alexandria, VA 22304
Tel 703 370 7722
Fax 703 751 2567

February 5, 2016

Justin Wilkinson
Virginia Department of Environmental Quality
Northern Virginia Regional Office
13901 Crown Court
Woodbridge, VA 22193



Re: Covanta Alexandria/Arlington, Inc. (CAAI) Registration #71895

- **Emission Statement Certification**
- **Annual Update for Calendar Year 2015**
- **2015 Emission Statement**

Dear Mr. Hartshorn,

Pursuant to the Department's request dated January 6, 2016, and 9 VAC 5-20-160 of Virginia's Regulations for the Control and Abatement of Air Pollution, CAAI hereby submits the Emission Statement Certification, Annual Update for Calendar Year 2015 and the 2015 Emission Statement.

Please contact me if you have any questions or comments regarding this report.

Sincerely,

Bryan Donnelly
Facility Manager

BD/KMM

Cc: W. Skrabak (City of Alexandria DEQ)
G. Gromer (CAAI)
K. Tran (City of Alexandria DEQ)
K. McGunnigle (CAAI)



DOCUMENT CERTIFICATION

Facility Name: Covanta Alexandria /Arlington, Inc.

Registration #: 71895

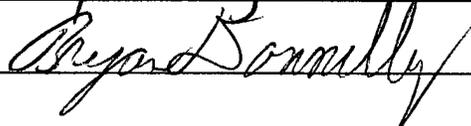
Facility Location: 5301 Eisenhower Ave, Alexandria, VA 22304

Type of Submittal Attached: 2015 Emissions Statement

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print): Bryan Donnelly

Title: Facility Manager

Signature:  Date: 2-5-16



VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

2015 EMISSION STATEMENT

Please correct any errors in the information below (cross out & replace)

| | | | |
|---|---|---|---------------------|
| FACILITY NAME COVANTA ALEXANDRIA/ARLINGTON, INC. | | REGISTRATION # 71895 | |
| LOCATION ADDRESS 5301 Eisenhower Ave, Alexandria, VA 22304 | | COUNTY/CITY Alexandria City 510 | |
| MAILING ADDRESS 5301 Eisenhower Ave Alexandria, VA 22304 | | | |
| CONTACT PERSON BRYAN DONNELLY | TELEPHONE NUMBER 7033707722 | PRIMARY NAICS CODE Hazardous Waste Treatment and Disposal | For Agency Use Only |
| | Solid Waste Combustors & Incinerators → | | |

FACILITY TOTALS (Sum emissions from attached pages)

| INVENTORY YEAR 2015 | ANNUAL | | OZONE SEASON | |
|---|---------|---------|--------------|---------|
| TOTAL VOC EMISSIONS | 1.248 | TONS/YR | 7.185 | LBS/DAY |
| TOTAL NO_x EMISSIONS | 470.114 | TONS/YR | 2705.328 | LBS/DAY |
| TOTAL SO₂ EMISSIONS | 3.778 | TONS/YR | NA | |
| TOTAL PM₁₀ EMISSIONS | 1.016 | TONS/YR | NA | |
| TOTAL PB EMISSIONS | 0.003 | TONS/YR | NA | |
| TOTAL TRS EMISSIONS | NA | TONS/YR | NA | |
| TOTAL TNMOC EMISSIONS (landfills only) | NA | TONS/YR | NA | |
| TOTAL non-VOC/non-PM HAP EMISSIONS | 4.674 | TONS/YR | NA | |
| TOTAL CO EMISSIONS | 56.804 | TONS/YR | NA | |
| TOTAL PM_{2.5} EMISSIONS | 10.062 | TONS/YR | NA | |
| TOTAL NH₃ EMISSIONS | NA | TONS/YR | NA | |

PLEASE ATTACH "ANNUAL UPDATE REPORT" FORM.

PLEASE ATTACH "EMISSION STATEMENT CERTIFICATION" with appropriate signature.

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD**

REGISTRATION #: 71895

REL. POINT NO.: 1 UNIT NO.: 1

PROCESS NO.: 1 SCC NO.:

10200501

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|---------------------------------------|---------------------------|---|
| THRUPUT (with units) <u>Fuel Oil Unit 1</u> | | 12729 gallons | 3962 |
| NO. OPERATING DAYS | | NA days | 92 days |
| NO. OPERATING HOURS PER DAY | | NA hours | NA hours |
| DAILY THRUPUT (with units) = Thruput per day | | NA | 43.07 gallons per day |
| VOC EMISSION FACTOR (with units) = EF | | 0.252 lb/lk gallons | 0.252 lb/lk gallons |
| Emission Factor source ¹ | Control Efficiency basis ² | AP42 D | AP42 D |
| VOC CONTROL DEVICE CODE ³ | | 048, 207 | 048, 207 |
| Avg. VOC CONTROL EFFICIENCY ⁴ = CE | | 0 % | 0 % |
| VOC EMISSIONS ⁵ | | 1.60E-03 tons VOC per yr | 1.09E-02 lbs VOC per day |
| NOx EMISSION FACTOR (with units) = EF | | 24 lb/lk gallons | 24 lb/lk gallons |
| Emission Factor source ¹ | Control Efficiency basis ² | AP42 D | AP42 D |
| NOx CONTROL DEVICE CODE ³ | | 032, 107 | 032, 107 |
| Avg. NOx CONTROL EFFICIENCY ⁴ = CE | | 50 % | 50 % |
| NOx EMISSIONS ⁵ | | 0.076 tons NOx per yr | 0.517 lbs NOx per day |
| SO2 EMISSION FACTOR (with units) = EF | | 142 lb/lk gallons x % 5 | |
| Emission Factor source ¹ | Control Efficiency basis ² | AP42 D | |
| FUEL PARAMETER (% ash or % sulfur) = FP | | 0.5* % | % |
| SO2 CONTROL DEVICE CODE ³ | | 999 - Dry Scrubber*** | |
| Avg. SO2 CONTROL EFFICIENCY ⁴ = CE | | 97.6*** % | % |
| SO2 EMISSIONS ⁵ | | 0.024 tons SO2 per yr | lbs SO2 per day |
| PM10 EMISSION FACTOR (with units) = EF | | 2 lb/lk gallons | |
| Emission Factor source ¹ | Control Efficiency basis ² | AP42 D | |
| FUEL PARAMETER (% ash or % sulfur) = FP | | NA % | % |
| PM10 CONTROL DEVICE CODE ³ | | 016 | |
| Avg. PM10 CONTROL EFFICIENCY ⁴ = CE | | 50 % | % |
| PM10 EMISSIONS ⁵ | | 6.36E-03 tons PM10 per yr | lbs PM10 per day |
| PB EMISSION FACTOR (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA NA | |
| PB CONTROL DEVICE CODE ³ | | NA | |
| Avg. PB CONTROL EFFICIENCY ⁴ = CE | | NA % | % |
| PB EMISSIONS ⁵ | | NA tons PB per yr | lbs PB per day |

* Max Sulfur Content for Fuel Oil Deliveries.
 ** Based on 2015 Stack Test Removal Efficiency.
 *** 041, 068, 202 (SDA)

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material balance; D = Design; O = Other (describe on separate sheet)
 3. See 3-digit control device codes listed in appendix.
 4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (continued)

10200501

REGISTRATION #: 71895

REL. POINT NO.: 1 UNIT NO.: 1

PROCESS NO.: 1 SCC NO.:

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|---------------------------------------|------------------------------|---|
| THRUPUT (with units) <u>Fuel Oil Unit 1</u> | | <u>12729</u> gallons | |
| NO. OPERATING DAYS | | <u>NA</u> days | days |
| NO. OPERATING HOURS PER DAY | | <u>NA</u> hours | hours |
| DAILY THRUPUT (with units) = Thruput per day | | <u>NA</u> | per day |
| TRS Emission Factor (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| TRS CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. TRS CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| TRS EMISSIONS ⁵ | | <u>NA</u> tons TRS per yr | lbs TRS per day |
| TNMOC EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| TNMOC CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. TNMOC CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| TNMOC EMISSIONS ⁵ | | <u>NA</u> tons TNMOC per yr | lbs TNMOC per day |
| CO EMISSION FACTOR (with units) = EF | | <u>5 lb / 1k gallons</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>AP42</u> | <u>D</u> |
| CO CONTROL DEVICE CODE ³ | | <u>033</u> | |
| Avg. CO CONTROL EFFICIENCY ⁴ = CE | | <u>0</u> % | % |
| CO EMISSIONS ⁵ | | <u>3.18 E-02</u> tons per yr | lbs per day |
| PM 2.5 EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| FUEL PARAMETER (% ash or % sulfur) = FP | | <u>NA</u> % | % |
| PM 2.5 CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. PM 2.5 CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| PM 2.5 EMISSIONS ⁵ | | <u>NA</u> tons per yr | lbs per day |
| NH3 EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| NH3 CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. NH3 CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| NH3 EMISSIONS ⁵ | | <u>NA</u> tons per yr | lbs per day |

- AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
- A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
- See 3-digit control device codes listed in appendix.
- Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
- Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (HAPs)**

10200501

REGISTRATION #: 71895 REL. POINT NO.: 1 UNIT NO.: 1 PROCESS NO.: 1 SCC NO.:

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|---|---------------------------------------|---------------|---|
| THRUPUT (with units) Fuel Oil Unit 1 | | 12729 gallons | |
| NO. OPERATING DAYS | | NA | days |
| NO. OPERATING HOURS PER DAY | | NA | hours |
| DAILY THRUPUT (with units) = Thruput per day | | NA | per day |
| HAP EMISSION FACTOR (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA | NA |
| HAP CONTROL DEVICE CODE ³ | | NA | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | NA | % |
| HAP (7047010) EMISSIONS ⁵ | | NA | tons TNMOC per yr |
| HAP EMISSION FACTOR (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA | NA |
| HAP CONTROL DEVICE CODE ³ | | NA | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | NA | % |
| HAP (7064393) EMISSIONS ⁵ | | NA | tons per yr |
| HAP EMISSION FACTOR (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | | % |
| HAP () EMISSIONS ⁵ | | | tons per yr |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | | % |
| HAP () EMISSIONS ⁵ | | | tons per yr |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | | % |
| HAP () EMISSIONS ⁵ | | | tons per yr |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | | % |
| HAP () EMISSIONS ⁵ | | | tons per yr |

Hydrogen Chloride

Hydrogen Fluoride

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval).
 2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
 3. See 3-digit control device codes listed in appendix.
 4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD**

REGISTRATION #: 71895

REL POINT NO.: 1

UNIT NO.: 1

PROCESS NO.: 2

SCC NO.: 10201201

| | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|--------------------------------|---|
| THRUPUT (with units) <u>MSW Unit 1</u> | <u>114862 Tons</u> | <u>31389 Tons</u> |
| NO. OPERATING DAYS | <u>355</u> days | <u>92</u> days |
| NO. OPERATING HOURS PER DAY | <u>8395.1</u> hours | <u>2172.5</u> hours |
| DAILY THRUPUT (with units) = Thruput per day | <u>NA</u> | <u>341.2 Tons</u> per day |
| VOC EMISSION FACTOR (with units) = EF | <u>0.104 lb/hr</u> | <u>0.104 lb/hr</u> |
| Emission Factor source ¹ | <u>ST</u> | <u>A</u> |
| Control Efficiency basis ² | <u>A</u> | <u>A</u> |
| VOC CONTROL DEVICE CODE ³ | <u>048, 207</u> | <u>048, 207</u> |
| Avg. VOC CONTROL EFFICIENCY ⁴ = CE | <u>EF w/ Controls</u> % | <u>EF w/ Controls</u> % |
| VOC EMISSIONS ⁵ | <u>0.437</u> tons VOC per yr | <u>2.496</u> lbs VOC per day |
| NOx EMISSION FACTOR (with units) = EF | <u>37.0 lb/hr*</u> | <u>37.0 lb/hr*</u> |
| Emission Factor source ¹ | <u>CEMS</u> | <u>B/RATA</u> |
| Control Efficiency basis ² | <u>B/RATA</u> | <u>B/RATA</u> |
| NOx CONTROL DEVICE CODE ³ | <u>032, 107</u> | <u>032, 107</u> |
| Avg. NOx CONTROL EFFICIENCY ⁴ = CE | <u>EF w/ Controls</u> % | <u>EF w/ Controls</u> % |
| NOx EMISSIONS ⁵ | <u>155.309</u> tons NOx per yr | <u>888.0</u> lbs NOx per day |
| SO2 EMISSION FACTOR (with units) = EF | <u>0.3 lb/hr*</u> | |
| Emission Factor source ¹ | <u>CEMS</u> | |
| Control Efficiency basis ² | <u>B/RATA</u> | |
| FUEL PARAMETER (% ash or % sulfur) = FP | <u>NA</u> % | <u>NA</u> % |
| SO2 CONTROL DEVICE CODE ³ | <u>999-Dry Scrubber**</u> | |
| Avg. SO2 CONTROL EFFICIENCY ⁴ = CE | <u>EF w/ Controls</u> % | <u>EF w/ Controls</u> % |
| SO2 EMISSIONS ⁵ | <u>1.259</u> tons SO2 per yr | <u>NA</u> lbs SO2 per day |
| PM10 EMISSION FACTOR (with units) = EF | <u>0.0539 lb/hr</u> | |
| Emission Factor source ¹ | <u>ST</u> | |
| Control Efficiency basis ² | <u>A</u> | |
| FUEL PARAMETER (% ash or % sulfur) = FP | <u>NA</u> % | <u>NA</u> % |
| PM10 CONTROL DEVICE CODE ³ | <u>016</u> | |
| Avg. PM10 CONTROL EFFICIENCY ⁴ = CE | <u>EF w/ Controls</u> % | <u>EF w/ Controls</u> % |
| PM10 EMISSIONS ⁵ | <u>0.226</u> tons PM10 per yr | <u>NA</u> lbs PM10 per day |
| PB EMISSION FACTOR (with units) = EF | <u>1.38E-04</u> | |
| Emission Factor source ¹ | <u>ST</u> | |
| Control Efficiency basis ² | <u>A</u> | |
| PB CONTROL DEVICE CODE ³ | <u>999-Dry Scrubber**</u> | |
| Avg. PB CONTROL EFFICIENCY ⁴ = CE | <u>EF w/ Controls</u> % | <u>EF w/ Controls</u> % |
| PB EMISSIONS ⁵ | <u>5.79E-04</u> tons PB per yr | <u>NA</u> lbs PB per day |

* Annual CEMS Hourly Average.
* * 041, 068, 202 (SOA)

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material balance; D = Design; O = Other (describe on separate sheet)
 3. See 3-digit control device codes listed in appendix.
 4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (continued)

REGISTRATION #: 71895 REL. POINT NO.: 1 UNIT NO.: 1 PROCESS NO.: 2 SCC NO.: 10201201

| | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|---------------------|---|
| THRUPUT (with units) <u>MSW Unit 1</u> | <u>114862 Tons</u> | |
| NO. OPERATING DAYS | <u>355</u> days | days |
| NO. OPERATING HOURS PER DAY | <u>8395.1</u> hours | hours |
| DAILY THRUPUT (with units) = Thruput per day | NA | per day |
| TRS Emission Factor (with units) = EF | NA | |
| Emission Factor source ¹ | NA | NA |
| Control Efficiency basis ² | | |
| TRS CONTROL DEVICE CODE ³ | NA | |
| Avg. TRS CONTROL EFFICIENCY ⁴ = CE | NA | % |
| TRS EMISSIONS ⁵ | NA | tons TRS per yr lbs TRS per day |
| TNMOC EMISSION FACTOR (with units) = EF | NA | |
| Emission Factor source ¹ | NA | NA |
| Control Efficiency basis ² | | |
| TNMOC CONTROL DEVICE CODE ³ | NA | |
| Avg. TNMOC CONTROL EFFICIENCY ⁴ = CE | NA | % |
| TNMOC EMISSIONS ⁵ | NA | tons TNMOC per yr lbs TNMOC per day |
| CO EMISSION FACTOR (with units) = EF | <u>4.6 lb/hr*</u> | |
| Emission Factor source ¹ | CEMS | B/RATA |
| Control Efficiency basis ² | | |
| CO CONTROL DEVICE CODE ³ | 033 | |
| Avg. CO CONTROL EFFICIENCY ⁴ = CE | EF w/ Controls | % |
| CO EMISSIONS ⁵ | <u>19.309</u> | tons per yr lbs per day |
| PM 2.5 EMISSION FACTOR (with units) = EF | <u>1.23 lb/hr</u> | |
| Emission Factor source ¹ | ST | A |
| Control Efficiency basis ² | | |
| FUEL PARAMETER (% ash or % sulfur) = FP | NA | % |
| PM 2.5 CONTROL DEVICE CODE ³ | 016 | |
| Avg. PM 2.5 CONTROL EFFICIENCY ⁴ = CE | EF w/ Controls | % |
| PM 2.5 EMISSIONS ⁵ | <u>5.163</u> | tons per yr lbs per day |
| NH3 EMISSION FACTOR (with units) = EF | NA | |
| Emission Factor source ¹ | NA | NA |
| Control Efficiency basis ² | | |
| NH3 CONTROL DEVICE CODE ³ | NA | |
| Avg. NH3 CONTROL EFFICIENCY ⁴ = CE | NA | % |
| NH3 EMISSIONS ⁵ | NA | tons per yr lbs per day |

* Annual CEMS Hourly Average.

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
 3. See 3-digit control device codes listed in appendix.
 4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (HAPs)**

10201201

REGISTRATION #: 71895 REL. POINT NO.: 1 UNIT NO.: 1 PROCESS NO.: 2 SCC NO.:

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|---|---------------------------------------|-------------------------|---|
| THRUPUT (with units) MSW Unit 1 | | 114862 tons | |
| NO. OPERATING DAYS | | 355 days | days |
| NO. OPERATING HOURS PER DAY | | 8395.1 hours | hours |
| DAILY THRUPUT (with units) = Thruput per day | | NA | per day |
| HAP EMISSION FACTOR (with units) = EF | | 0.378 lb/hr | |
| Emission Factor source ¹ | Control Efficiency basis ² | ST | A |
| HAP CONTROL DEVICE CODE ³ | | 999-Dry Scrubber* | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | EF w/ Controls | % |
| HAP (7647010) EMISSIONS ⁵ | | 1.587 tons TNMOC per yr | lbs TNMOC per day |
| HAP EMISSION FACTOR (with units) = EF | | < 0.0161 lb/hr | |
| Emission Factor source ¹ | Control Efficiency basis ² | ST | A |
| HAP CONTROL DEVICE CODE ³ | | 999-Dry Scrubber* | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | EF w/ Controls | % |
| HAP (7664393) EMISSIONS ⁵ | | < 0.068 tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |

Hydrogen Chloride
Hydrogen Fluoride

\$041,068,202 (SDA)

- AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
- A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
- See 3-digit control device codes listed in appendix.
- Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
- Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD**

10200501

REGISTRATION #: 71895

REL. POINT NO.: 2

UNIT NO.: 2

PROCESS NO.: 1

SCC NO.:

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|---------------------------------------|----------------------------------|---|
| THRUPUT (with units) <u>Fuel Oil Unit 2</u> | | <u>12729</u> gallons | <u>3962</u> Gallons |
| NO. OPERATING DAYS | | <u>NA</u> days | <u>90</u> days |
| NO. OPERATING HOURS PER DAY | | <u>NA</u> hours | <u>NA</u> hours |
| DAILY THRUPUT (with units) = Thruput per day | | <u>NA</u> | <u>44.02</u> gallons per day |
| VOC EMISSION FACTOR (with units) = EF | | <u>0.252</u> lb/lk gallons | <u>0.252</u> lb/lk gallons |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>AP42</u> <u>D</u> | <u>AP42</u> <u>D</u> |
| VOC CONTROL DEVICE CODE ³ | | <u>048, 207</u> | <u>048, 207</u> |
| Avg. VOC CONTROL EFFICIENCY ⁴ = CE | | <u>0</u> % | <u>0</u> % |
| VOC EMISSIONS ⁵ | | <u>1.60E-03</u> tons VOC per yr | <u>1.11E-02</u> lbs VOC per day |
| NOx EMISSION FACTOR (with units) = EF | | <u>24</u> lb/lk gallons | <u>24</u> lb/lk gallons |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>AP42</u> <u>D</u> | <u>AP42</u> <u>D</u> |
| NOx CONTROL DEVICE CODE ³ | | <u>032, 107</u> | <u>032, 107</u> |
| Avg. NOx CONTROL EFFICIENCY ⁴ = CE | | <u>50</u> % | <u>50</u> % |
| NOx EMISSIONS ⁵ | | <u>0.076</u> tons NOx per yr | <u>0.528</u> lbs NOx per day |
| SO2 EMISSION FACTOR (with units) = EF | | <u>142</u> lb/lk gallons x % 5 | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>AP42</u> <u>D</u> | |
| FUEL PARAMETER (% ash or % sulfur) = FP | | <u>0.5*</u> % | % |
| SO2 CONTROL DEVICE CODE ³ | | <u>999- Dry Scrubber ***</u> | |
| Avg. SO2 CONTROL EFFICIENCY ⁴ = CE | | <u>97.8**</u> % | % |
| SO2 EMISSIONS ⁵ | | <u>9.94E-03</u> tons SO2 per yr | lbs SO2 per day |
| PM10 EMISSION FACTOR (with units) = EF | | <u>2</u> lb/lk gallons | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>AP42</u> <u>D</u> | |
| FUEL PARAMETER (% ash or % sulfur) = FP | | <u>NA</u> % | % |
| PM10 CONTROL DEVICE CODE ³ | | <u>016</u> | |
| Avg. PM10 CONTROL EFFICIENCY ⁴ = CE | | <u>50</u> % | % |
| PM10 EMISSIONS ⁵ | | <u>6.36E-03</u> tons PM10 per yr | lbs PM10 per day |
| PB EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> <u>NA</u> | |
| PB CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. PB CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| PB EMISSIONS ⁵ | | <u>NA</u> tons PB per yr | lbs PB per day |

* Max Sulfur Content for fuel oil deliveries.

** Based on 2015 Stack Test Removal efficiency.

*** 041,068, 202 (SDA)

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material balance; D = Design; O = Other (describe on separate sheet)
3. See 3-digit control device codes listed in appendix.
4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (continued)

10200501

REGISTRATION #: 71895

REL. POINT NO.: 2

UNIT NO.: 2

PROCESS NO.: 1

SCC NO.:

| | | ANNUAL | | PEAK OZONE SEASON (JUNE, JULY, AUGUST) | |
|--|---------------------------------------|-----------------------------|-----------|---|-------------------|
| THRUPUT (with units) <u>Fuel Oil Unit 2</u> | | <u>12729 gallons</u> | | | |
| NO. OPERATING DAYS | | <u>NA</u> days | | | days |
| NO. OPERATING HOURS PER DAY | | <u>NA</u> hours | | | hours |
| DAILY THRUPUT (with units) = Thruput per day | | <u>NA</u> | | | per day |
| TRS Emission Factor (with units) = EF | | <u>NA</u> | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> | | |
| TRS CONTROL DEVICE CODE ³ | | <u>NA</u> | | | |
| Avg. TRS CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | | | % |
| TRS EMISSIONS ⁵ | | <u>NA</u> tons TRS per yr | | | lbs TRS per day |
| TNMOC EMISSION FACTOR (with units) = EF | | <u>NA</u> | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> | | |
| TNMOC CONTROL DEVICE CODE ³ | | <u>NA</u> | | | |
| Avg. TNMOC CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | | | % |
| TNMOC EMISSIONS ⁵ | | <u>NA</u> tons TNMOC per yr | | | lbs TNMOC per day |
| CO EMISSION FACTOR (with units) = EF | | <u>5 lb / 1 k gallons</u> | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>AP42</u> | <u>D</u> | | |
| CO CONTROL DEVICE CODE ³ | | <u>033</u> | | | |
| Avg. CO CONTROL EFFICIENCY ⁴ = CE | | <u>0</u> % | | | % |
| CO EMISSIONS ⁵ | | <u>3.18E-02</u> tons per yr | | | lbs per day |
| PM 2.5 EMISSION FACTOR (with units) = EF | | <u>NA</u> | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> | | |
| FUEL PARAMETER (% ash or % sulfur) = FP | | <u>NA</u> % | | | % |
| PM 2.5 CONTROL DEVICE CODE ³ | | <u>NA</u> | | | |
| Avg. PM 2.5 CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | | | % |
| PM 2.5 EMISSIONS ⁵ | | <u>NA</u> tons per yr | | | lbs per day |
| NH3 EMISSION FACTOR (with units) = EF | | <u>NA</u> | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> | | |
| NH3 CONTROL DEVICE CODE ³ | | <u>NA</u> | | | |
| Avg. NH3 CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | | | % |
| NH3 EMISSIONS ⁵ | | <u>NA</u> tons per yr | | | lbs per day |

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
3. See 3-digit control device codes listed in appendix.
4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (HAPs)**

10700501

REGISTRATION #: 71895 REL. POINT NO.: 2 UNIT NO.: 2 PROCESS NO.: 1 SCC NO.:

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|---|---------------------------------------|---|---|
| THRUPUT (with units) Fuel oil Unit 2 | | 12729 Gallons | |
| NO. OPERATING DAYS | | NA | days |
| NO. OPERATING HOURS PER DAY | | NA | hours |
| DAILY THRUPUT (with units) = Thruput per day | | NA | per day |
| HAP EMISSION FACTOR (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA | NA |
| HAP CONTROL DEVICE CODE ³ | | NA | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | NA | % |
| HAP (7647010) EMISSIONS ⁵ | | NA | tons TNMOC per yr lbs TNMOC per day |
| HAP EMISSION FACTOR (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA | NA |
| HAP CONTROL DEVICE CODE ³ | | NA | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | NA | % |
| HAP (7664393) EMISSIONS ⁵ | | NA | tons per yr lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | <div style="font-size: 4em; font-weight: bold;">X</div> | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | | % |
| HAP () EMISSIONS ⁵ | | | tons per yr lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | | % |
| HAP () EMISSIONS ⁵ | | | tons per yr lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | | % |
| HAP () EMISSIONS ⁵ | | | tons per yr lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | |
| HAP () EMISSIONS ⁵ | | tons per yr lbs per day | |

Hydrogen Chloride

Hydrogen Fluoride

- AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
- A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
- See 3-digit control device codes listed in appendix.
- Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
- Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD**

10201201

REGISTRATION #: 71895 REL POINT NO.: 2 UNIT NO.: 2 PROCESS NO.: 2 SCC NO.:

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|---------------------------------------|---------------------------------|--|
| THRUPUT (with units) <u>MSW Unit 2</u> | | <u>118496</u> Tons | <u>31877</u> Tons |
| NO. OPERATING DAYS | | <u>349</u> days | <u>90</u> days |
| NO. OPERATING HOURS PER DAY | | <u>8310.1</u> hours | <u>2172.5</u> <u>2146</u> hours |
| DAILY THRUPUT (with units) = Thruput per day | | NA | <u>354.19</u> per day |
| VOC EMISSION FACTOR (with units) = EF | | <u>0.107</u> lb/hr | <u>0.107</u> lb/hr |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>ST</u> <u>A</u> | <u>ST</u> <u>A</u> |
| VOC CONTROL DEVICE CODE ³ | | <u>048, 207</u> | <u>048, 207</u> |
| Avg. VOC CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> % | <u>EF w/ Controls</u> % |
| VOC EMISSIONS ⁵ | | <u>0.445</u> tons VOC per yr | <u>2.568</u> lbs VOC per day |
| NOx EMISSION FACTOR (with units) = EF | | <u>37.8</u> lb/hr* | <u>37.8</u> lb/hr* |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>CEMS</u> <u>B/RATA</u> | <u>CEMS</u> <u>B/RATA</u> |
| NOx CONTROL DEVICE CODE ³ | | <u>032, 107</u> | <u>032, 107</u> |
| Avg. NOx CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> % | <u>EF w/ Controls</u> % |
| NOx EMISSIONS ⁵ | | <u>157.061</u> tons NOx per yr | <u>907.2</u> lbs NOx per day |
| SO2 EMISSION FACTOR (with units) = EF | | <u>0.4</u> lb/hr* | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>CEMS</u> <u>B/RATA</u> | |
| FUEL PARAMETER (% ash or % sulfur) = FP | | NA % | % |
| SO2 CONTROL DEVICE CODE ³ | | <u>999-Dry Scrubber**</u> | |
| Avg. SO2 CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> % | % |
| SO2 EMISSIONS ⁵ | | <u>1.662</u> tons SO2 per yr | lbs SO2 per day |
| PM10 EMISSION FACTOR (with units) = EF | | <u>0.110</u> lb/hr ¹ | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>ST</u> <u>A</u> | |
| FUEL PARAMETER (% ash or % sulfur) = FP | | NA % | % |
| PM10 CONTROL DEVICE CODE ³ | | <u>016</u> | |
| Avg. PM10 CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> % | % |
| PM10 EMISSIONS ⁵ | | <u>0.457</u> tons PM10 per yr | lbs PM10 per day |
| PB EMISSION FACTOR (with units) = EF | | <u>1.58E-04</u> lb/hr | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>ST</u> <u>A</u> | |
| PB CONTROL DEVICE CODE ³ | | <u>999-Dry Scrubber**</u> | |
| Avg. PB CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> % | % |
| PB EMISSIONS ⁵ | | <u>6.565E-04</u> tons PB per yr | lbs PB per day |

* Annual CEMS Hourly Average.

** 041, 068, 202 (SOA)

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material balance; D = Design; O = Other (describe on separate sheet)
 3. See 3-digit control device codes listed in appendix.
 4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (continued)

10201201

REGISTRATION #: 71895 REL. POINT NO.: 2 UNIT NO.: 2 PROCESS NO.: 2 SCC NO.:

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|---------------------------------------|-----------------------|---|
| THRUPUT (with units) <u>MSW Unit 2</u> | | <u>118496 Tons</u> | |
| NO. OPERATING DAYS | | <u>90</u> days | days |
| NO. OPERATING HOURS PER DAY | | <u>8310.1</u> hours | hours |
| DAILY THRUPUT (with units) = Thruput per day | | NA | per day |
| TRS Emission Factor (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA | NA |
| TRS CONTROL DEVICE CODE ³ | | NA | |
| Avg. TRS CONTROL EFFICIENCY ⁴ = CE | | NA | % |
| TRS EMISSIONS ⁵ | | NA | tons TRS per yr lbs TRS per day |
| TNMOC EMISSION FACTOR (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA | NA |
| TNMOC CONTROL DEVICE CODE ³ | | NA | |
| Avg. TNMOC CONTROL EFFICIENCY ⁴ = CE | | NA | % |
| TNMOC EMISSIONS ⁵ | | NA | tons TNMOC per yr lbs TNMOC per day |
| CO EMISSION FACTOR (with units) = EF | | <u>4.8 lb/hr*</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | CEMS | B/RATA |
| CO CONTROL DEVICE CODE ³ | | <u>033</u> | |
| Avg. CO CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> | % |
| CO EMISSIONS ⁵ | | <u>19.944</u> | tons per yr lbs per day |
| PM 2.5 EMISSION FACTOR (with units) = EF | | <u>1.00 lb/hr</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | ST | A |
| FUEL PARAMETER (% ash or % sulfur) = FP | | NA | % |
| PM 2.5 CONTROL DEVICE CODE ³ | | <u>016</u> | |
| Avg. PM 2.5 CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> | % |
| PM 2.5 EMISSIONS ⁵ | | <u>4.155</u> | tons per yr lbs per day |
| NH3 EMISSION FACTOR (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA | NA |
| NH3 CONTROL DEVICE CODE ³ | | NA | |
| Avg. NH3 CONTROL EFFICIENCY ⁴ = CE | | NA | % |
| NH3 EMISSIONS ⁵ | | NA | tons per yr lbs per day |

* Annual CEMS Hourly Average.

- AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
- A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
- See 3-digit control device codes listed in appendix.
- Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
- Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (HAPs)**

REGISTRATION #: 11895 REL. POINT NO.: 2 UNIT NO.: 2 PROCESS NO.: 2 SCC NO.: 10201201

Hydrogen Chloride
Hydrogen Fluoride

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|---|---------------------------------------|--------------------------------|---|
| THRUPUT (with units) <u>MSW Unit 2</u> | | <u>118496 Tons</u> | |
| NO. OPERATING DAYS | | <u>90</u> days | days |
| NO. OPERATING HOURS PER DAY | | <u>8310.1</u> hours | hours |
| DAILY THRUPUT (with units) = Thruput per day | | <u>NA</u> | per day |
| HAP EMISSION FACTOR (with units) = EF | | <u>0.369 lb/hr</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>ST</u> <u>A</u> | |
| HAP CONTROL DEVICE CODE ³ | | <u>999-Dry Scrubber*</u> | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> % | % |
| HAP (<u>7647010</u>) EMISSIONS ⁵ | | <u>1.517</u> tons TNMOC per yr | lbs TNMOC per day |
| HAP EMISSION FACTOR (with units) = EF | | <u>40.0152 lb/hr</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>ST</u> <u>A</u> | |
| HAP CONTROL DEVICE CODE ³ | | <u>999-Dry Scrubber*</u> | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> % | % |
| HAP (<u>7664393</u>) EMISSIONS ⁵ | | <u>40.063</u> tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |

*041, 068, 202

- AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
- A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
- See 3-digit control device codes listed in appendix.
- Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
- Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD**

10200501

REGISTRATION #: 71895

REL. POINT NO.: 3

UNIT NO.: 3

PROCESS NO.: 1

SCC NO.:

| | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|----------------------------|---|
| THRUPUT (with units) <u>Fuel Oil Unit 3</u> | 12729 gallons | 3962 gallons |
| NO. OPERATING DAYS | NA days | 91 days |
| NO. OPERATING HOURS PER DAY | NA hours | NA hours |
| DAILY THRUPUT (with units) = Thruput per day | NA | 43.54 per day |
| VOC EMISSION FACTOR (with units) = EF | 0.252 lb/lk gallons | 0.252 lb/lk gallons |
| Emission Factor source ¹ | AP42 | AP42 |
| Control Efficiency basis ² | D | D |
| VOC CONTROL DEVICE CODE ³ | 048, 207 | 048, 207 |
| Avg. VOC CONTROL EFFICIENCY ⁴ = CE | 0 % | 0 % |
| VOC EMISSIONS ⁵ | 1.60 E-03 tons VOC per yr | 1.10 E-02 lbs VOC per day |
| NOx EMISSION FACTOR (with units) = EF | 24 lb/lk gallons | 24 lb/lk gallons |
| Emission Factor source ¹ | AP42 | AP42 |
| Control Efficiency basis ² | D | D |
| NOx CONTROL DEVICE CODE ³ | 032, 107 | 032, 107 |
| Avg. NOx CONTROL EFFICIENCY ⁴ = CE | 50 % | 50 % |
| NOx EMISSIONS ⁵ | 0.076 tons NOx per yr | 0.522 lbs NOx per day |
| SO2 EMISSION FACTOR (with units) = EF | 142 lb/lk gallons x % 5 | |
| Emission Factor source ¹ | AP42 | |
| Control Efficiency basis ² | D | |
| FUEL PARAMETER (% ash or % sulfur) = FP | 0.5* % | % % |
| SO2 CONTROL DEVICE CODE ³ | 999-Dry Scrubber*** | |
| Avg. SO2 CONTROL EFFICIENCY ⁴ = CE | 98.9** % | % % |
| SO2 EMISSIONS ⁵ | 4.97 E-03 tons SO2 per yr | lbs SO2 per day |
| PM10 EMISSION FACTOR (with units) = EF | 216 / lk gallons | |
| Emission Factor source ¹ | AP42 | |
| Control Efficiency basis ² | D | |
| FUEL PARAMETER (% ash or % sulfur) = FP | NA % | % % |
| PM10 CONTROL DEVICE CODE ³ | 016 | |
| Avg. PM10 CONTROL EFFICIENCY ⁴ = CE | 50 % | % % |
| PM10 EMISSIONS ⁵ | 6.36 E-03 tons PM10 per yr | lbs PM10 per day |
| PB EMISSION FACTOR (with units) = EF | NA | |
| Emission Factor source ¹ | NA | |
| Control Efficiency basis ² | NA | |
| PB CONTROL DEVICE CODE ³ | NA | |
| Avg. PB CONTROL EFFICIENCY ⁴ = CE | NA % | % % |
| PB EMISSIONS ⁵ | NA tons PB per yr | lbs PB per day |

* Max sulfur content for Fuel oil deliveries.
 ** Based on 2015 Stack Test Removal efficiency
 *** 041, 068, 202 (SOA)

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material balance; D = Design; O = Other (describe on separate sheet)
 3. See 3-digit control device codes listed in appendix.
 4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (continued)

10200501

REGISTRATION #: 71895

REL. POINT NO.: 3

UNIT NO.: 3

PROCESS NO.: 1

SCC NO.:

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|---------------------------------------|-----------------------------|---|
| THRUPUT (with units) <u>Fuel oil Unit 3</u> | | <u>12729 gallons</u> | |
| NO. OPERATING DAYS | | <u>NA</u> days | days |
| NO. OPERATING HOURS PER DAY | | <u>NA</u> hours | hours |
| DAILY THRUPUT (with units) = Thruput per day | | <u>NA</u> | per day |
| TRS Emission Factor (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| TRS CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. TRS CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| TRS EMISSIONS ⁵ | | <u>NA</u> tons TRS per yr | lbs TRS per day |
| TNMOC EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| TNMOC CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. TNMOC CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| TNMOC EMISSIONS ⁵ | | <u>NA</u> tons TNMOC per yr | lbs TNMOC per day |
| CO EMISSION FACTOR (with units) = EF | | <u>5 lb / 1k gallons</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>AP42</u> | <u>D</u> |
| CO CONTROL DEVICE CODE ³ | | <u>033</u> | |
| Avg. CO CONTROL EFFICIENCY ⁴ = CE | | <u>0</u> % | % |
| CO EMISSIONS ⁵ | | <u>3.18E-02</u> tons per yr | lbs per day |
| PM 2.5 EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| FUEL PARAMETER (% ash or % sulfur) = FP | | <u>NA</u> % | % |
| PM 2.5 CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. PM 2.5 CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| PM 2.5 EMISSIONS ⁵ | | <u>NA</u> tons per yr | lbs per day |
| NH3 EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| NH3 CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. NH3 CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| NH3 EMISSIONS ⁵ | | <u>NA</u> tons per yr | lbs per day |

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
3. See 3-digit control device codes listed in appendix.
4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (HAPs)**

10200501

REGISTRATION #: 71845 REL. POINT NO.: 3 UNIT NO.: 3 PROCESS NO.: 1 SCC NO.:

Hydrogen Chloride

Hydrogen Fluoride

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|---|---------------------------------------|-----------------------------|---|
| THRUPUT (with units) <u>Fuel Oil - Unit 3</u> | | <u>12729 gallons</u> | |
| NO. OPERATING DAYS | | <u>NA</u> days | days |
| NO. OPERATING HOURS PER DAY | | <u>NA</u> hours | hours |
| DAILY THRUPUT (with units) = Thruput per day | | <u>NA</u> | per day |
| HAP EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| HAP CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| HAP (<u>7647010</u>) EMISSIONS ⁵ | | <u>NA</u> tons TNMOC per yr | lbs TNMOC per day |
| HAP EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| HAP CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| HAP (<u>7664393</u>) EMISSIONS ⁵ | | <u>NA</u> tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| HAP CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| HAP CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| HAP CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | <u>NA</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>NA</u> | <u>NA</u> |
| HAP CONTROL DEVICE CODE ³ | | <u>NA</u> | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | <u>NA</u> % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
 3. See 3-digit control device codes listed in appendix.
 4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD**

10201201

REGISTRATION #: 71895 REL. POINT NO.: 3 UNIT NO.: 3 PROCESS NO.: 2 SCC NO.:

| | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|---------------------------|---|
| THRUPUT (with units) <i>MSW Unit 3</i> | 116358 Tons | 30309 Tons |
| NO. OPERATING DAYS | 353 days | 91 days |
| NO. OPERATING HOURS PER DAY | 8312.1 hours | 2100.3 hours |
| DAILY THRUPUT (with units) = Thruput per day | NA | 333.1 Tons per day |
| VOC EMISSION FACTOR (with units) = EF | 0.087 lb/hr | 0.087 lb/hr |
| Emission Factor source ¹ | ST | A |
| Control Efficiency basis ² | A | A |
| VOC CONTROL DEVICE CODE ³ | 048, 207 | 048, 207 |
| Avg. VOC CONTROL EFFICIENCY ⁴ = CE | EF w/ Controls % | EF w/ Controls % |
| VOC EMISSIONS ⁵ | 0.362 tons VOC per yr | 2.088 lbs VOC per day |
| NOx EMISSION FACTOR (with units) = EF | 37.9 lb/hr* | 37.9 lb/hr* |
| Emission Factor source ¹ | CEMS | B/RATA |
| Control Efficiency basis ² | B/RATA | B/RATA |
| NOx CONTROL DEVICE CODE ³ | 032, 107 | 032, 107 |
| Avg. NOx CONTROL EFFICIENCY ⁴ = CE | EF w/ Controls % | EF w/ Controls % |
| NOx EMISSIONS ⁵ | 157.514 tons NOx per yr | 909.6 lbs NOx per day |
| SO2 EMISSION FACTOR (with units) = EF | 0.2 lb/hr* | |
| Emission Factor source ¹ | CEMS | |
| Control Efficiency basis ² | B/RATA | |
| FUEL PARAMETER (% ash or % sulfur) = FP | NA % | % |
| SO2 CONTROL DEVICE CODE ³ | 999 - Dry Scrubber** | |
| Avg. SO2 CONTROL EFFICIENCY ⁴ = CE | EF w/ Controls % | % |
| SO2 EMISSIONS ⁵ | 0.831 tons SO2 per yr | lbs SO2 per day |
| PM10 EMISSION FACTOR (with units) = EF | 0.0755 lb/hr | |
| Emission Factor source ¹ | ST | A |
| Control Efficiency basis ² | A | |
| FUEL PARAMETER (% ash or % sulfur) = FP | NA % | % |
| PM10 CONTROL DEVICE CODE ³ | 016 | |
| Avg. PM10 CONTROL EFFICIENCY ⁴ = CE | EF w/ Controls % | % |
| PM10 EMISSIONS ⁵ | 0.314 tons PM10 per yr | lbs PM10 per day |
| PB EMISSION FACTOR (with units) = EF | 3.97 E-04 lb/hr | |
| Emission Factor source ¹ | ST | A |
| Control Efficiency basis ² | A | |
| PB CONTROL DEVICE CODE ³ | 999 - Dry Scrubber** | |
| Avg. PB CONTROL EFFICIENCY ⁴ = CE | EF w/ Controls % | % |
| PB EMISSIONS ⁵ | 1.650 E-03 tons PB per yr | lbs PB per day |

*Annual CEMS Hourly Average.
** 041, 068, 202 (SDA)

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
 2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material balance; D = Design; O = Other (describe on separate sheet)
 3. See 3-digit control device codes listed in appendix.
 4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
 5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (continued)

10201201

REGISTRATION #: 71895

REL. POINT NO.: 3

UNIT NO.: 3

PROCESS NO.: 2

SCC NO.:

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|--|---------------------------------------|-----------------------|---|
| THRUPUT (with units) <u>MSW Unit 3</u> | | <u>116358</u> | |
| NO. OPERATING DAYS | | <u>353</u> days | days |
| NO. OPERATING HOURS PER DAY | | <u>8312.1</u> hours | hours |
| DAILY THRUPUT (with units) = Thruput per day | | NA | per day |
| TRS Emission Factor (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA | NA |
| TRS CONTROL DEVICE CODE ³ | | NA | |
| Avg. TRS CONTROL EFFICIENCY ⁴ = CE | | NA | % |
| TRS EMISSIONS ⁵ | | NA | lbs TRS per day |
| TNMOC EMISSION FACTOR (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA | NA |
| TNMOC CONTROL DEVICE CODE ³ | | NA | |
| Avg. TNMOC CONTROL EFFICIENCY ⁴ = CE | | NA | % |
| TNMOC EMISSIONS ⁵ | | NA | lbs TNMOC per day |
| CO EMISSION FACTOR (with units) = EF | | <u>4.2 lb/hr*</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | CEMS | B/RATA |
| CO CONTROL DEVICE CODE ³ | | <u>033</u> | |
| Avg. CO CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> | % |
| CO EMISSIONS ⁵ | | <u>17.455</u> | tons per yr lbs per day |
| PM 2.5 EMISSION FACTOR (with units) = EF | | <u>0.179 lb/hr</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | ST | A |
| FUEL PARAMETER (% ash or % sulfur) = FP | | NA | % |
| PM 2.5 CONTROL DEVICE CODE ³ | | <u>016</u> | |
| Avg. PM 2.5 CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> | % |
| PM 2.5 EMISSIONS ⁵ | | <u>0.744</u> | tons per yr lbs per day |
| NH3 EMISSION FACTOR (with units) = EF | | NA | |
| Emission Factor source ¹ | Control Efficiency basis ² | NA | NA |
| NH3 CONTROL DEVICE CODE ³ | | NA | |
| Avg. NH3 CONTROL EFFICIENCY ⁴ = CE | | NA | % |
| NH3 EMISSIONS ⁵ | | NA | tons per yr lbs per day |

* Annual CEMS Hourly Average.

- AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
- A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
- See 3-digit control device codes listed in appendix.
- Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
- Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (HAPs)**

REGISTRATION #: 71895 REL. POINT NO.: 3 UNIT NO.: 3 PROCESS NO.: 2 SCC NO.: 10201201

| | | ANNUAL | PEAK OZONE SEASON (JUNE, JULY, AUGUST) |
|---|---------------------------------------|--------------------------------|---|
| THRUPUT (with units) <u>MSW Unit 3</u> | | <u>116358</u> | |
| NO. OPERATING DAYS | | <u>353</u> days | days |
| NO. OPERATING HOURS PER DAY | | <u>8312.1</u> hours | hours |
| DAILY THRUPUT (with units) = Thruput per day | | NA | per day |
| HAP EMISSION FACTOR (with units) = EF | | <u>0.331 lb/hr</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>ST</u> <u>A</u> | |
| HAP CONTROL DEVICE CODE ³ | | <u>999 - Dry Scrubber #</u> | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> % | % |
| HAP (<u>7647010</u>) EMISSIONS ⁵ | | <u>1.376</u> tons TNMOC per yr | lbs TNMOC per day |
| HAP EMISSION FACTOR (with units) = EF | | <u>< 0.0156 lb/hr</u> | |
| Emission Factor source ¹ | Control Efficiency basis ² | <u>ST</u> <u>A</u> | |
| HAP CONTROL DEVICE CODE ³ | | <u>999 - Dry Scrubber #</u> | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | <u>EF w/ Controls</u> % | % |
| HAP (<u>7664393</u>) EMISSIONS ⁵ | | <u>< 0.065</u> tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |
| HAP EMISSION FACTOR (with units) = EF | | | |
| Emission Factor source ¹ | Control Efficiency basis ² | | |
| HAP CONTROL DEVICE CODE ³ | | | |
| Avg. HAP CONTROL EFFICIENCY ⁴ = CE | | % | % |
| HAP () EMISSIONS ⁵ | | tons per yr | lbs per day |

Hydrogen chloride
Hydrogen Fluoride

*041, 068, 202

- AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
- A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
- See 3-digit control device codes listed in appendix.
- Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
- Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

2015 EMISSION CALCULATIONS
OPTION I: EMISSION FACTOR METHOD (continued)

RELEASE POINT NUMBER: Unit 1

REGISTRATION #: 71895

| | ANNUAL |
|-----------------------------------|-------------|
| RELEASE POINT HEIGHT (ft) | 210 |
| RELEASE POINT DIAMETER (ft) | 5.19 |
| EXIT GAS TEMPERATURE (E F) | 289* |
| EXIT GAS VELOCITY (ft per second) | 47.23* |
| ELEVATION (ft above sea level) | 110 |
| GAS FLOW RATE (cu.ft per minute) | 79888* ACFM |

RELEASE POINT NUMBER: Unit 2

| | ANNUAL |
|-----------------------------------|-------------|
| RELEASE POINT HEIGHT (ft) | 210 |
| RELEASE POINT DIAMETER (ft) | 5.19 |
| EXIT GAS TEMPERATURE (E F) | 291* |
| EXIT GAS VELOCITY (ft per second) | 49.73* |
| ELEVATION (ft above sea level) | 110 |
| GAS FLOW RATE (cu.ft per minute) | 84120* ACFM |

RELEASE POINT NUMBER: Unit 3

| | ANNUAL |
|-----------------------------------|--------|
| RELEASE POINT HEIGHT (ft) | 210 |
| RELEASE POINT DIAMETER (ft) | 5.19 |
| EXIT GAS TEMPERATURE (E F) | 290* |
| EXIT GAS VELOCITY (ft per second) | 49.78* |
| ELEVATION (ft above sea level) | 110 |
| GAS FLOW RATE (cu.ft per minute) | 84208* |

RELEASE POINT NUMBER: _____

| | ANNUAL |
|-----------------------------------|--------|
| RELEASE POINT HEIGHT (ft) | |
| RELEASE POINT DIAMETER (ft) | |
| EXIT GAS TEMPERATURE (E F) | |
| EXIT GAS VELOCITY (ft per second) | |
| ELEVATION (ft above sea level) | |
| GAS FLOW RATE (cu.ft per minute) | |

RELEASE POINT NUMBER: _____

| | ANNUAL |
|-----------------------------------|--------|
| RELEASE POINT HEIGHT (ft) | |
| RELEASE POINT DIAMETER (ft) | |
| EXIT GAS TEMPERATURE (E F) | |
| EXIT GAS VELOCITY (ft per second) | |
| ELEVATION (ft above sea level) | |
| GAS FLOW RATE (cu.ft per minute) | |

*2015 Stack Test Average

2/5/2016, 7:23 AM

**Commonwealth of Virginia
Department of Environmental Quality
Annual Update Report for Calendar Year: 2015**

| | | | |
|-------------------------------|--|-----------------|---|
| Registration No. | 71895 | Office: | Northern Regional Office |
| Site Name: | Covanta Alexandria/Arlington, Inc. | County / City: | Alexandria City 510 |
| Physical Location: | 5301 Eisenhower Ave, Alexandria, VA 22304 | NAICS: | Hazardous Waste Treatment and Disposal 562211 |
| Mailing Address: | 5301 Eisenhower Ave Alexandria, VA 22304 | Employees: | 48 |
| Annual Update Report Contact: | Bryan Donnelly Phone: (703) 370-7722 Email: bdonnelly@covantaenergy.com | Inspector: | Maryann Vaughn Phone: (703) 583-3918 |
| Billing Contact: | Bryan Donnelly Phone: (703) 370-7722 Email: bdonnelly@covantaenergy.com | Classification: | Major/Potential Major |

Process Data

| CEDs ID (Rept-Unit- Process) | Process Description | Annual Throughput | | | | | | Fuel Data | | | | | |
|------------------------------------|--|---------------------------------|--------|--------|---------------------|------|-----|--------------|-----------|---------------------------|---------|---------|-----|
| | | Annual Throughput by Season (%) | | | Units | | | Sulfur (Wt%) | Ash (Wt%) | Heat Content (MMBtu/unit) | CY 2014 | CY 2015 | |
| 1-1-1 | 1.5 FABER COMB. UNIT Unit Ref ID: 1 10200501 | CY 2014 | 14.17 | 12.73 | 1000 Gallons Burned | | | | | | | | |
| | | Dec-Feb | 23.8 | 27 | 26.4 | 22.8 | 31% | 0.5 | 0.015 | 0 | 0 | 140 | 140 |
| | | Mar-May | 23.8 | 27 | 26.4 | 22.8 | 25% | | | | | | |
| | | Sep-Nov | 23.8 | 27 | 26.4 | 22.8 | 25% | | | | | | |
| 1-1-2 | 1 KEELER BOILER Unit Ref ID: 1 10201201 | CY 2014 | 114212 | 114862 | Tons Burned | | | | | | | | |
| | | Dec-Feb | 23.8 | 27 | 26.4 | 22.8 | 27% | 0.13 | 0 | 28.1 | 0 | 10 | 10 |
| | | Mar-May | 23.8 | 27 | 26.4 | 22.8 | 23% | | | | | | |
| | | Sep-Nov | 23.8 | 27 | 26.4 | 22.8 | 23% | | | | | | |
| 2-2-1 | 1.5 FABER COMB. UNIT Unit Ref ID: 2 10200501 | CY 2014 | 14.17 | 12.73 | 1000 Gallons Burned | | | | | | | | |
| | | Dec-Feb | 24 | 25.6 | 26.5 | 23.9 | 31% | 0.5 | 0.015 | 0 | 0 | 140 | 140 |
| | | Mar-May | 24 | 25.6 | 26.5 | 23.9 | 25% | | | | | | |
| | | Sep-Nov | 24 | 25.6 | 26.5 | 23.9 | 25% | | | | | | |
| 2-2-2 | 1 KEELER BOILER Unit Ref ID: 2 10201201 | CY 2014 | 117764 | 118496 | Tons Burned | | | | | | | | |
| | | Dec-Feb | 24 | 25.6 | 26.5 | 23.9 | 27% | 0.13 | 0 | 28.1 | 0 | 10 | 10 |
| | | Mar-May | 24 | 25.6 | 26.5 | 23.9 | 23% | | | | | | |
| | | Sep-Nov | 24 | 25.6 | 26.5 | 23.9 | 23% | | | | | | |
| 3-3-1 | 1.5 FABER COMB. UNIT Unit Ref ID: 3 10200501 | CY 2014 | 14.17 | 12.73 | 1000 Gallons Burned | | | | | | | | |
| | | Dec-Feb | 25.2 | 25.9 | 25.7 | 23.2 | 31% | 0.5 | 0.015 | 0 | 0 | 140 | 140 |
| | | Mar-May | 25.2 | 25.9 | 25.7 | 23.2 | 25% | | | | | | |
| | | Sep-Nov | 25.2 | 25.9 | 25.7 | 23.2 | 25% | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|-------|-----------------|--|----------|--------|-------------|------|-----|---------|------|------|---------|------|-----|---------|------|-----|---------|---------|
| 3-3-2 | 1 KEELER BOILER | | 117909 | 116358 | Tons Burned | | | 0.13 | 0 | 28.1 | 0 | 10 | 10 | | | | | |
| | Unit Ref ID: 3 | | 10201201 | 23% | Dec-Feb | 25.2 | 23% | Mar-May | 25.9 | 27% | Jun-Aug | 25.7 | 26% | Sep-Nov | 23.2 | 24% | CY 2014 | CY 2015 |
| | | | | | | | | | | | | | | | | | | |

During the reporting period, have changes or corrections occurred?
 If yes, briefly explain:

The correct NAICS code is 562213 - Solid Waste Combustors & Incinerators. The facility currently now has 45 employees. Bryan Donnelly's email is now BDonnelly@Covanta.com.

Based on the data you are reporting, are you aware of any potential air permit violations?
 If yes, briefly explain:

Document Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Name of Responsible Official (Print) Bryan Donnelly

Title Facility Manager

Signature Bryan Donnelly

Date 2-9-16

Must be signed by a Responsible Official as defined in 9 VAC 5-20-230 of the Regulations for the Control and Abatement of Air Pollution, available at: <http://www.deq.virginia.gov/>

Attachment B

PSD Permit dated September 27, 2010



NRO-287-10

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

13901 Crown Court, Woodbridge, Virginia 22193

(703) 583-3800 Fax (703) 583-3821

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

September 27, 2010

Mr. Bryan Donnelly
Facility Manager
Covanta Alexandria/Arlington
5301 Eisenhower Avenue
Alexandria, Virginia 22304

Registration No.: 71895

Dear Mr. Donnelly:

Attached is a minor amendment to your new source review permit dated February 4, 2002, as amended March 16, 2010 to modify and operate a municipal solid waste incineration facility in accordance with the provisions of the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution (Regulations). Permit changes are reflected in Condition 5, Page 5; Conditions 115A and 115C, page 27; Conditions 151A and 151B, page 35; 160A, page 37; and Appendix A. This amended permit supersedes your permit dated February 4, 2002, as amended March 16, 2010.

This permit contains legally enforceable conditions. Failure to comply may result in appropriate enforcement. Please read all permit conditions carefully.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on September 22, 2010.

This permit approval to modify and operate shall not relieve Covanta Alexandria/Arlington of the responsibility to comply with all other local, state, and federal permit regulations.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code (VAC) 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. 9 VAC 5-170-200 also provides that you may request direct consideration of the decision by the Board if the Director of the DEQ made the decision. Please consult the relevant regulations for additional requirements for such requests.

| Event | Date | Initials |
|-----------|---------|----------|
| Code: PSD | 9/27/10 | EA |
| Scanned | | |
| QC | | |

Mr. Bryan Donnelly
September 27, 2010
Page 2

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

David K. Paylor, Director
Department of Environmental Quality
P. O. Box 1105
Richmond, VA 23218

If this permit was delivered to you by mail, three days are added to the thirty-day period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit, please contact the regional office at 703.583.3858.

Sincerely,



Terry H. Darton
Regional Air Permit Manager

TAF/THD/EHA/10-287-mnsr

Attachment: Permit
Appendix A

cc: Director, OAPP (electronic file submission)
Manager, Air Compliance
File



NRO-287-10

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

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(703) 583-3800 Fax (703) 583-3821

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Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

PREVENTION OF SIGNIFICANT DETERIORATION PERMIT STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE

**This permit includes designated equipment subject to
New Source Performance Standards (NSPS) and National Emission
Standards for Hazardous Air Pollutants (NESHAP) for source categories.**

This permit supersedes your permit dated February 4, 2002 as amended March 16, 2010.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia
Regulations for the Control and Abatement of Air Pollution,

Covanta Alexandria/Arlington, Incorporated
40 Lane Road, CN 2615
Fairfield, NJ 07007
Registration No. 71895
County-Plant No. 0080-0139

is authorized to modify and operate

A waste-to-energy facility containing three 121.8 MMBtu per hour
municipal waste combustors

located at

5301 Eisenhower Avenue
Alexandria, Virginia

in accordance with Part I – Part XIII, and Appendix A of this permit.

Approved on

September 27, 2010

Handwritten signature of Thomas A. Faha.

Thomas A. Faha,
Regional Director

Permit Consists of **52** pages and Appendix A
Part I - Facility Description 1 to 2.
Part II - Process Requirements 3 to 4A.
Part III - Limitations 5 to 13A.
Part IV - Operating Limits 14 to 16.
Part V - Operator Training and Certification 17 to 26.
Part VI - Test Methods and Procedures 27 to 113.
Part VII - Monitoring 114 to 135.
Part VIII - Notification, Recordkeeping and Reporting 136 to 170.
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Part X - Compliance Schedules 175 to 176.
Part XI - General Conditions 177 to 188.
Part XII - State Only Requirements 1 to 5.
Part XIII - Document List, 58 items.
Source Testing Report Format.
Appendix A

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PART I - Facility Description

1. The waste-to-energy plant is located at 5301 Eisenhower Avenue, the site of the former Alexandria Incinerator.
2. Modification and operation shall be conducted as proposed in the initial permit application dated March 28, 1984, revised June 1, 1984 and July 24, 1984, as changed by Covanta Alexandria/Arlington, Inc. letters of February 3, 1988, April 5, 1988, October 18, 1991, November 1, 1991, September 11, 1992, May 1, 2000, and September 10, 2010. The permit application and supporting documents (see Document List) are a part of this permit. Any changes in the permit application or supporting document specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.
(9 VAC 5-50-390, 9 VAC 5-80-10 K 4 and 9 VAC 5-170-160)

PART II – Process Requirements

3. Equipment List –
The equipment that has been constructed and operated consists of:
 - fabric filters/baghouse;
 - lime slurry injection system (semi-dry scrubber);
 - ammonia injection system (Selective Non-Catalytic Reduction);
 - one underground storage tank for fuel oil with a total capacity of 20,000 gallons;
 - one lime storage silo with rated capacity of 2548 ft³/hr; and
 - one carbon storage silo with a rated capacity of 2010 ft³/hr.

Previously permitted equipment at this facility prior to the date of this permit consists of:

- three municipal waste combustors (MWC's) each nominally rated at 121.8 MMBtu per hour based on a higher heating value (HHV) of 4,500 Btu/lb for MSW;
- three municipal waste combustor trains, for this permit a municipal waste combustor train is defined as the feed hopper, feed chute, charging equipment, stoker/grate unit, furnace section, second pass, generating section, superheater, economizer, induced draft fan and flue;
- two nominal 12.8 megawatt turbine/electric generators;
- municipal waste handling and storage facilities; and
- activated carbon injection system.

Exempted equipment at this facility prior to the date of this permit consists of:

- ventilation system above the residue handling area.

The equipment to be removed consists of:

- three 4-field United McGill (or equivalent) electrostatic precipitators; and
- dry lime injection system.

(9 VAC 5-170-160)

4. Particulate matter emissions from the municipal waste combustors shall be controlled by fabric filters. Each fabric filter shall be provided with adequate access for inspection and shall be in operation when the municipal waste combustors are operating.
(9 VAC 5-50-260)
- 4A. Particulate matter emissions from the carbon silo and lime silo shall be controlled by fabric filters. The fabric filters shall be provided with adequate access for inspection.
(9 VAC 5-50-90)

PART III - Limitations

5. **Municipal Solid Waste (MSW) –**
 - a. Acceptable municipal solid waste includes household waste, commercial/retail waste, institutional waste, and other waste with emission characteristics similar to the acceptable wastes as determined by the permittee and approved by the Regional Air Permit Manager of the DEQ's Northern Regional Office (NRO), or a combination thereof as defined in this condition.
 - b. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities.
 - c. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, non-manufacturing activities at industrial facilities, and other similar establishments or facilities. All commercial/retail waste shall be mixed with other approved fuels prior to charging to the combustor in order to prevent discreet loads from being charged to a boiler.
 - d. Institutional waste includes material discarded by schools, non-medical waste discarded by hospitals, material discarded by non-manufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities.
 - e. Municipal solid waste does not include hazardous waste, as defined by federal and state waste regulations.
 - f. In addition, municipal solid waste shall not include industrial process or manufacturing waste, used oil, sewage sludge, wood pallets, construction, renovation, and demolition wastes, medical waste, motor vehicles (including motor vehicle parts or vehicle fluff) unless approved via the approved Material Review Process (MRP).
 - g. The permittee shall monitor the waste delivered to the facility to ensure that only MSW as defined herein is being processed by the facility.
 - h. This definition of MSW may in the future be expanded to include additional waste types not identified in this condition. To facilitate any revision, the permittee shall submit requests in writing to the Regional Air Permit Manager of the DEQ's NRO. Information

on waste composition and emissions characterizations shall be included with any submittal. The request and supporting information will be reviewed and evaluated to determine new source review applicability. The permit will be revised in accordance with the procedures established in the appropriate permitting regulations in the Regulations for the Control and Abatement of Air Pollution.

- i. Any waste not classified as hazardous waste, and not covered by the definition of MSW above, shall be reviewed in accordance with the approved MRP (see Appendix A).
(9 VAC 5-170-160)
6. The approved fuels for the municipal waste combustors are municipal waste and No. 2 fuel oil. A change in the fuel may require a permit to modify and operate.
(9 VAC 5-170-160)
- 6A. The No. 2 fuel oil shall meet the ASTM specification D396-78 for No. 2 fuel oil. The maximum sulfur content per shipment shall not exceed 0.5 weight percent.
(40 CFR 60.42b(j))
7. The firing of each municipal waste combustor with fuel oil shall not exceed an annual capacity factor of 10 percent. The annual capacity factor is determined by dividing the actual heat input to the municipal waste combustor unit during the calendar year from the combustion of Number 2 fuel oil by the potential heat input to the municipal waste combustor unit if the municipal waste combustor unit had been operating 8,760 hours at the maximum design heat input capacity.
(9 VAC 5-50-410, 40 CFR 60.43b(d), 40 CFR 60.43b(e) and 40 CFR 60.44b(c))
8. Each municipal waste combustor train design includes a No. 2 fuel oil burner for use in maintaining appropriate municipal waste combustor temperatures.
(9 VAC 5-170-160)
9. The following standards, contained in 9 VAC 5-40-Article 46 and 40 CFR 62 Subpart FFF, apply to the emissions from each municipal waste combustor:
 - a. **Particulate Matter:** 27 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.
(9 VAC 5-40-7970)
 - b. **Carbon Monoxide:** 100 parts per million by volume, corrected to 7 percent oxygen, dry basis, calculated as an arithmetic average (4-hour block average). A 4-hour block average is defined as the average of all hourly emission concentrations when the affected facility is operating and combusting municipal solid waste measured over 4-hour periods of time from 12:00 midnight to 4 a.m., 4a.m. to 8 a.m., 8 a.m. to 12:00 noon, 12:00 noon to 4 p.m., 4p.m. to 8 p.m., and 8 p.m. to 12:00 midnight.
(9 VAC 5-40-7980 and 9 VAC 5-40-7960C)

- c. **Sulfur Dioxide:** 29 parts per million by volume or 25 percent of the potential sulfur dioxide emission concentration (75 percent reduction by weight or volume), corrected to 7 percent oxygen, dry basis, whichever is less stringent. Compliance with this standard is based on a 24-hour daily geometric mean. A 24-hour daily average is defined as either the arithmetic or geometric mean (as specified) of all hourly emission concentrations when the affected facility is operating and combusting municipal solid waste measured over a 24-hour period between 12:00 midnight and the following midnight.
(9 VAC 5-40-8020 and 9 VAC 5-40-7960C)
- d. **Nitrogen Oxides:** 205 parts per million by volume, corrected to 7 percent oxygen, dry basis, based on a 24-hour daily arithmetic average. A 24-hour daily average is defined as either the arithmetic or geometric mean (as specified) of all hourly emission concentrations when the affected facility is operating and combusting municipal solid waste measured over a 24-hour period between 12:00 midnight and the following midnight.
(9 VAC 5-40-8050 and 9 VAC 5-40-7960C)
- e. **Hydrogen Chloride:** 29 parts per million by volume or 5 percent of the potential hydrogen chloride emission concentration (95 percent reduction by weight or volume), corrected to 7 percent oxygen, dry basis, whichever is less stringent.
(9 VAC 5-40-8030)
- f. **Cadmium:** 0.040 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.
(9 VAC 5-40-7990)
- g. **Lead:** 0.44 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.
(9 VAC 5-40-8000)
- h. **Mercury:** 0.080 milligrams per dry standard cubic meter or 15 percent of the potential mercury emission concentration (85 percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent.
(9 VAC 5-40-8010)
- i. **Dioxin/Furan:** 30 nanograms per dry standard cubic meter, expressed as total mass dioxins/furans, corrected to 7 percent oxygen.
(9 VAC 5-40-8040)

10. **Unit Emission Limits**

Emissions from the operation of EACH municipal waste combustor shall not exceed the limitations specified below, as of August 22, 2000:

| | <u>lb/MMBtu</u> | <u>lbs/hr</u> | <u>tons/yr</u> |
|---|-----------------|---------------|----------------|
| Particulate Matter | 0.07 | | 35.3 |
| Particulate Matter 10 (PM ₁₀) | 0.07 | | 35.3 |

| | | | |
|---|---------------------------|------------------------|-------------------------|
| Sulfur Dioxide | 0.14*** | 16.6*** | 69.0 |
| Volatile Organic Compounds | 0.006 | | 3.0 |
| Nitrogen Oxides (as NO ₂) | 0.55 | | 277.0 |
| Carbon Monoxide | 0.56* | 68.5* | 48.5** |
| Municipal Waste Combustor Metals (measured as particulate matter & made up of the following:) | 6.47 x 10 ⁻³ | | 3.42 |
| Cadmium | 2.7 x 10 ⁻⁴ | | 0.14 |
| Lead | 4.4 x 10 ⁻³ | | 2.32 |
| Mercury | 1.8 x 10 ^{-3***} | | 0.96 |
| Municipal Waste Combustor Acid Gases (measured as the sum of SO ₂ and HCl) | 0.48*** | 58.3*** | 242 |
| Hydrogen Chloride | 0.34*** | | 173.0 |
| Municipal Waste Combustor Organics (measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans) | 1.26 x 10 ⁻⁷ | | 6.7 x 10 ⁻⁵ |
| Total Dioxins and Furans | 1.26 x 10 ⁻⁷ | | 6.7 x 10 ⁻⁵ |
| Beryllium | 4.9 x 10 ⁻⁷ | 6.0 x 10 ⁻⁵ | 2.63 x 10 ⁻⁴ |

* Maximum short-term carbon monoxide emission rate.

** Based on an average annual carbon monoxide emission rate of 0.096 lb/MMBtu, calculated monthly as the average of each consecutive 12 month period.

***For HCl, SO₂ and mercury, compliance will be demonstrated on a short-term basis by meeting the lb/MMBtu and lbs/hr emission limits specified in this condition or by the percent removal requirements specified in Condition #9.

Except for the lb/MMBtu and lb/hr HCl, SO₂ and mercury emission limits, the lb/MMBtu, lbs/hr and tons/yr emission limits in this condition may not be an indicator of compliance with the emission concentration and percent removal standards contained in condition #9. Annual emissions shall be calculated monthly as the sum of each consecutive 12 month period unless specified otherwise.

(9 VAC 5-50-260, 9 VAC 5-50-270, 9 VAC 5-50-280, 40 CFR 61.32(a) and 9 VAC 5-50-180)

- 10A. Particulate matter emissions from the carbon and lime silos shall each not exceed 22.22 lbs/hr.
(9 VAC 5-40-270)

11. Facility Emission Limits

Total emissions from the operation of the municipal waste combustor plant shall not exceed the limitations specified below, as of the date this permit application was deemed complete:

| | <u>tons/yr</u> |
|---|-------------------------|
| Particulate Matter | 106 |
| Particulate Matter 10 (PM ₁₀) | 106 |
| Sulfur Dioxide | 206 |
| Volatile Organic Compounds | 9.1 |
| Nitrogen Oxides (as NO ₂) | 830 |
| Carbon Monoxide | 145.5** |
| Municipal Waste Combustor Metals (measured as particulate matter & made up of the following:) | 10.27 |
| Cadmium | 0.43 |
| Lead | 6.96 |
| Mercury | 2.88 |
| Municipal Waste Combustor Acid Gases (measured as the sum of SO ₂ and HCl) | 723 |
| Hydrogen Chloride | 517 |
| Municipal Waste Combustor Organics Total Dioxins and Furans | 2.01 x 10 ⁻⁴ |
| Beryllium | 7.89 x 10 ⁻⁴ |

** Based on an average annual carbon monoxide emission rate of 0.096 lb/MMBtu, calculated monthly as the average of each consecutive 12 month period.

The tons/yr emission limits may not be an indicator of compliance with the emission concentration standards contained in condition #9. Annual emissions shall be calculated monthly as the sum of each consecutive 12 month period unless specified otherwise.

(9 VAC 5-50-260, 9 VAC 5-50-270, 9 VAC 5-50-280 and 9 VAC 5-50-180)

12. Standard for Visible Emissions:

The provisions of Article 1 (9 VAC 5-40-60 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Visible Emissions and Fugitive Dust/Emissions, Rule 4-1) apply except that the provisions of 9 VAC 5-40-80 shall be replaced by the following:

Covanta Alexandria/Arlington, Inc. shall not cause or permit to be discharged into the atmosphere from any affected facility any gases that exhibit greater than 10 percent opacity (6-minute average).

(9 VAC 5-40-8060.)

12A. Visible Emissions from the carbon and lime silos shall not exceed 20% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity.

(9 VAC 5-50-80)

13. Standard for Fugitive Dust/Emissions:

- a. The provisions of Article 1 (9 VAC 5-40-60 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Visible Emissions and Fugitive Dust/Emissions, Rule 4-1) apply except as provided in sections b. through d. of this condition.
- b. Covanta Alexandria/Arlington, Inc. shall not cause to be discharged to the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (i.e., 9 minutes per 3-hour period), as determined by Reference Method 22 observations as specified in 9 VAC 5-40-8140 H, except as provided in sections c. and d. of this condition.
- c. The emission limit specified in section b. of this condition shall not cover visible emissions discharged inside buildings or enclosures of ash conveying systems; however, the emission limit specified in section b. of this condition shall cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.
- d. The provisions specified in section b. of this condition shall not apply during maintenance and repair of ash conveying systems.

(9 VAC 5-40-8070)

- 13A. The permittee shall not emit particulate matter in excess of 0.18 grams per dry standard cubic meter (0.08 grains per dry standard cubic foot), corrected to 12% CO₂, from each municipal waste combustor.
(40 CFR 60.52)

PART IV- Operating Limits

14. The annual steam production for the facility shall not exceed 1,170,400 tons on the basis of an average value of 3.34 pounds of steam produced per pound of municipal solid waste (MSW) processed, calculated monthly as the sum of each consecutive 12 month period.
(9 VAC 5-80-10H)
15. Covanta Alexandria/Arlington, Inc. shall not operate any municipal waste combustor at a 4-hour average steam load level greater than 110 percent of the maximum demonstrated municipal waste combustor unit load which is the maximum 4-hour arithmetic average unit load during four consecutive hours achieved during the most recent dioxin/furan test demonstrating compliance with the applicable limit for municipal waste combustor organics specified under 9 VAC 5-40-8040, except:
 - a. During the annual dioxin/furan performance test and the 2 weeks preceding the

annual dioxin/furan performance test, the municipal waste combustor unit load limit is not applicable.

- b. The municipal waste combustor unit load limit may be waived in accordance with permission granted by the board, for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions.

(9 VAC 5-40-8120A)

- 16. The 4-hour average temperature, measured at each particulate matter control device inlet, shall not exceed 17°C (30.6°F) above the maximum demonstrated particulate matter control device temperature which is the highest 4-hour arithmetic average flue gas temperature measured at the particulate matter control device inlet during the most recent dioxin/furan test demonstrating compliance with the applicable limit for municipal waste combustor organics specified under 9 VAC 5-40-8040, except:

- a. During the annual dioxin/furan performance test and the 2 weeks preceding the annual dioxin/furan performance test, the particulate matter control device temperature limitations are not applicable.
- b. The particulate matter control device temperature limits may be waived, in accordance with permission granted by the board, for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions.

(9 VAC 5-40-8120B)

PART V- Operator Training and Certification:

- 17. Each chief facility operator and shift supervisor shall obtain and maintain one of the following:
 - a. A current provisional operator training certification from the American Society of Mechanical Engineers (QRO-1-1994) in conjunction with licensing requirements of the Board for Waste Management Facility Operators as required by 18 VAC 155 Chapter 20 (18 VAC 155-20-10 et seq.); or
 - b. A license from the Board for Waste Management Facility Operators as required by 18 VAC 155 Chapter 20 (18 VAC 18-20-10 et seq.).

(9 VAC 5-40-8130A)

- 18. Each chief facility operator and shift supervisor shall have:
 - a. (Satisfactorily) Completed full certification exam with the American Society of Mechanical Engineers (QRO-1-1994) certification program in conjunction with

the Board for Waste Management Facility Operators as required by 18 VAC 155 Chapter 20 (18 VAC 155-20-10 et seq.); or

- b. Obtained a license from the Board for Waste Management Facility Operators as required by 18 VAC 155 Chapter 20 (18 VAC 155-20-10 et seq.).

(9 VAC 5-40-8130B)

19. Covanta Alexandria/Arlington, Inc. shall not allow the municipal waste combustor facility to be operated at any time unless a person is on duty who is responsible for the proper operation of the facility and has a license from the Board for Waste Management Facility Operators in the correct classification.

(9 VAC 5-40-8130C)

20. Covanta Alexandria/Arlington, Inc. shall not allow the municipal waste combustor facility to be operated at any time unless one of the following persons is on duty and at Covanta Alexandria/Arlington, Inc.: A fully certified chief facility operator, a provisionally certified chief facility operator who is scheduled to take the full certification exam according to the schedule specified in 9 VAC 5-40-8110 B 1, a fully certified shift supervisor, or a provisionally certified shift supervisor who is scheduled to take the full certification exam according to the schedule specified in 9 VAC 5-40-8110 B 1. If one of the persons listed in condition #19 of this permit must leave Covanta Alexandria/Arlington, Inc. during their operating shift, a provisionally certified control room operator who is onsite at Covanta Alexandria/Arlington, Inc. may fulfill the requirements of this condition

(9VAC 5-40-8130D).

21. All chief facility operators, shift supervisors, and control room operators must (satisfactorily) complete the board-approved municipal waste combustor operator training course.

(9 VAC 5-40-8130E)

22. Covanta Alexandria/Arlington, Inc. shall develop and update on a yearly basis a site-specific operating manual that shall, at a minimum, address the elements of municipal waste combustor unit operation specified in sections a. through k. of this condition.

- a. A summary of the applicable standards under this permit;
- b. A description of basic combustion theory applicable to a municipal waste combustor unit;
- c. Procedures for receiving, handling, and feeding municipal solid waste;
- d. Municipal waste combustor unit startup, shutdown, and malfunction procedures;
- e. Procedures for maintaining proper combustion air supply levels;
- f. Procedures for operating the municipal waste combustor unit within the standards established under this permit;
- g. Procedures for responding to periodic upset or off-specification conditions;

- h. Procedures for minimizing particulate matter carryover;
- i. Procedures for handling ash;
- j. Procedures for monitoring municipal waste combustor unit emissions; and
- k. Reporting and recordkeeping procedures.

The operations manual shall include a copy of this permit.

(9 VAC 5-40-8130F & 9 VAC 5-170-160)

23. The site-specific operations manual required in condition #22 shall include a copy of the current, approved Standby Emission Reduction Plan required under 9 VAC 5-70-50 for reducing nonattainment emissions during an Air Pollution Episode.
(9 VAC 5-170-160)

24. Covanta Alexandria/Arlington, Inc. shall establish a training program to review the operating manual according to the schedule specified in sections a and b of this condition with each person who has responsibilities affecting the operation of the facility including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers.

- a. Each person shall undergo initial training no later than the date prior to the day the person assumes responsibilities affecting municipal waste combustor unit operation; or August 1, 2000, whichever is later.
- b. Each person shall repeat the initial training annually, within 12 months of the initial training required by section a. of this condition.

(9 VAC 5-40-8130G)

25. The operating manual required by condition #22 shall be kept in a readily accessible location for all persons required to undergo training under condition #24. The operating manual and records of training shall be available for inspection by the board upon request.

(9 VAC 5-40-8130H)

26. All training and licensing shall be in accordance with Section 54.1-1212 of the Code of Virginia.

(9 VAC 5-40-8130I)

PART VI - Test Methods and Procedures (9 VAC 5-40-8140).

27. The provisions of 9 VAC 5-40-30 (Emission testing) apply except as provided in conditions #28 through #113.

(9 VAC 5-40-8140A)

Particulate Matter

28. The procedures and test methods specified in conditions #29 through #38 of this section shall be used to determine compliance with the emission limits for particulate matter and opacity under 9 VAC 5-40-7970 and 9 VAC 5-40-8060.
(9VAC 5-40-8140B)
29. Reference Method 1 shall be used to select sampling site and number of traverse points. (9VAC 5-40-8140B.1)
30. Reference Method 3, 3A, or 3B, as applicable, shall be used for gas analysis.
(9VAC 5-40-8140B.2)
31. Reference Method 5 shall be used for determining compliance with the particulate matter emission limit contained in condition #9. The minimum sample volume shall be 1.7 cubic meters. The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature no greater than $160 + 14^{\circ}\text{C}$. An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Reference Method 5 run (9VAC 5-40-8140B.3)
32. Covanta Alexandria/Arlington, Inc. may request that compliance with the particulate matter emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for Covanta Alexandria/Arlington, Inc. shall be established as specified in 9 VAC 5-40-8150 B 6.
(9VAC 5-40-8140B.4)
33. As specified in 9 VAC 5-40-30, all performance tests shall consist of three test runs. The average of the particulate matter emission concentrations from the three test runs, one of which shall include normal sootblowing operations, shall be used to determine compliance.
(9VAC 5-40-8140B.5)

Opacity

34. In accordance with conditions #35 and #38, Reference Method 9 shall be used for determining compliance with the opacity limit except as provided in 9 VAC 5-40-20.
(9VAC 5-40-8140B.6)
35. Covanta Alexandria/Arlington, Inc. shall conduct an initial performance test for particulate matter emissions and opacity as required in 9 VAC 5-40-8100.
(Note: This performance standard has been achieved.)
(9VAC 5-40-8140B.7)

36. Covanta Alexandria/Arlington, Inc. shall install, calibrate, maintain, and operate a continuous opacity monitoring system for measuring opacity and shall follow the methods and procedures specified in sections a. through d. of this condition.
- a. The output of the continuous opacity monitoring system shall be recorded on a 6-minute average basis.
 - b. The continuous opacity monitoring system shall be installed, evaluated, and operated in accordance with 9 VAC 5-40-40 and 9 VAC 5-40-41.
 - c. The continuous opacity monitoring system shall conform to Performance Specification 1 in appendix B of 40 CFR 60.
 - d. The initial performance evaluation shall be completed as specified in 9 VAC 5-40-8100.
(9 VAC 5-40-8140B.8)
37. Following the date that the initial performance test for particulate matter is completed or is required to be completed in 9 VAC 5-40-8100 Covanta Alexandria/Arlington, Inc. shall conduct a performance test for particulate matter on an annual basis (no more than 12 calendar months following the previous performance test).
(9VAC 5-40-8140B.9)
38. Following the date that the initial performance test for opacity is completed or is required to be completed in 9 VAC 5-40-8100 Covanta Alexandria/Arlington, Inc. shall conduct a performance test for opacity on an annual basis (no more than 12 calendar months following the previous performance test) using the test method specified in permit condition #34.
(9VAC 5-40-8140B.10)

Cadmium and Lead

39. The procedures and test methods specified in conditions #40 and #58 of this permit shall be used to determine compliance with the emission limits for cadmium, lead, and mercury under 9 VAC 5-40-7990, 9 VAC 5-40-8000, and 9 VAC 5-40-8010.
(9VAC 5-40-8140C)
40. The procedures and test methods specified in conditions #41 through #47 of this permit shall be used to determine compliance with the emission limits for cadmium and lead under 9 VAC 5-40-7990 and 9 VAC 5-40-8000.
(9VAC 5-40-8140C.1)
41. Reference Method 1 shall be used for determining the location and number of sampling points.
(9VAC 5-40-8140C.1a)

42. Reference Method 3, 3A, or 3B, as applicable, shall be used for flue gas analysis.
(9VAC 5-40-8140C.1b)
43. Reference Method 29 shall be used for determining compliance with the cadmium and lead emission limits.
(9VAC 5-40-8140C.1c)
44. An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Reference Method 29 test run for cadmium and lead required under permit condition # 43.
(9VAC 5-40-8140C.1d)
45. Covanta Alexandria/Arlington, Inc. may request that compliance with the cadmium or lead emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for Covanta Alexandria/Arlington, Inc. shall be established as specified in 9 VAC 5-40-8150 B 6.
(9VAC 5-40-8140C.1e)
46. All performance tests shall consist of a minimum of three test runs conducted under representative full load operating conditions. The average of the cadmium or lead emission concentrations from three test runs or more shall be used to determine compliance.
(9VAC 5-40-8140C.1f)
47. Following the date of the initial performance test or the date on which the initial performance test is required to be completed in 9 VAC 5-40-8100, Covanta Alexandria/Arlington, Inc. shall conduct a performance test for compliance with the emission limits for cadmium and lead on an annual basis (no more than 12 calendar months following the previous performance test).
(9VAC 5-40-8140C.1g)

Mercury

48. The procedures and test methods specified in conditions #49 through #58 shall be used to determine compliance with the mercury emission limit under 9 VAC 5-40-8010.
(9VAC 5-40-8140C.2)
49. Reference Method 1 shall be used for determining the location and number of sampling points.
(9VAC 5-40-8140C.2a)
50. Reference Method 3, 3A, or 3B, as applicable, shall be used for flue gas analysis.
(9VAC 5-40-8140C.2b)
51. Reference Method 29 shall be used to determine the mercury emission concentration.

The minimum sample volume when using Reference Method 29 for mercury shall be 1.7 cubic meters.
(9VAC 5-40-8140C.2c)

52. An oxygen (or carbon dioxide) measurement shall be obtained simultaneously with each Reference Method 29 test run for mercury required under permit condition #51.
(9VAC 5-40-8140C.2d)

53. The percent reduction in the potential mercury emissions ($\%PHg$) is computed using the following equation:

$$(\%PHg) = \left(\frac{E_i - E_o}{E_i} \right) \times 100$$

where:

$\%PHg$ = percent reduction of the potential mercury emissions achieved.

E_i = potential mercury emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis).

E_o = controlled mercury emission concentration measured at the mercury control device outlet, corrected to 7 percent oxygen (dry basis).

(9VAC 5-40-8140C.2e)

54. All performance tests shall consist of a minimum of three test runs conducted under representative full load operating conditions. The average of the mercury emission concentrations or percent reductions from three test runs or more is used to determine compliance.
(9VAC 5-40-8140C.2f)

55. Covanta Alexandria/Arlington, Inc. may request that compliance with the mercury emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for Covanta Alexandria/Arlington, Inc. shall be established as specified in 9 VAC 5-40-8150 B 6.
(9VAC 5-40-8140C.2g)

56. Covanta Alexandria/Arlington, Inc. shall conduct an initial performance test for mercury emissions as required in 9 VAC 5-40-8100.
(Note: This performance standard has been achieved.)
(9VAC 5-40-8140C.2h)

57. Following the date that the initial performance test for mercury is completed or is required to be completed in 9 VAC 5-40-8100, Covanta Alexandria/Arlington, Inc. shall conduct a performance test for mercury emissions on an annual basis (no more than 12

calendar months from the previous performance test).
(9VAC 5-40-8140C.2i)

58. Covanta Alexandria/Arlington, Inc. where activated carbon injection is used to comply with the mercury emission limit shall follow the procedures specified in 9 VAC 5-40-8140 J for measuring and calculating carbon usage. (9VAC 5-40-8140C.2j)

Sulfur Dioxide

59. The procedures and test methods specified in conditions #59 through #73 shall be used for determining compliance with the sulfur dioxide emission limit under 9 VAC 5-40-8020.
(9VAC 5-40-8140D)
60. Reference Method 19, section 4.3, shall be used to calculate the daily geometric average sulfur dioxide emission concentration.
(9VAC 5-40-8140D.1)
61. Reference Method 19, section 5.4, shall be used to determine the daily geometric average percent reduction in the potential sulfur dioxide emission concentration.
(9VAC 5-40-8140D.2)
62. Covanta Alexandria/Arlington, Inc. may request that compliance with the sulfur dioxide emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for Covanta Alexandria/Arlington, Inc. shall be established as specified in 9 VAC 5-40-8150 B 6.
(9VAC 5-40-8140D.3)
63. Covanta Alexandria/Arlington, Inc. shall conduct an initial performance test for sulfur dioxide emissions as required in 9 VAC 5-40-8100. Compliance with the sulfur dioxide emission limit (concentration or percent reduction) shall be determined by using the continuous emission monitoring system specified in permit condition #64 to measure sulfur dioxide and calculating a 24-hour daily geometric average emission concentration or a 24-hour daily geometric average percent reduction using Reference Method 19, sections 4.3 and 5.4, as applicable.
(Note: This performance standard has been achieved.)
(9VAC 5-40-8140D.4)
64. Covanta Alexandria/Arlington, Inc. shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring sulfur dioxide emissions discharged to the atmosphere and record the output of the system.
(9VAC 5-40-8140D.5)
65. Following the date that the initial performance test for sulfur dioxide is completed or is required to be completed in 9 VAC 5-40-8100, compliance with the sulfur dioxide emission limit shall be determined based on the 24-hour daily geometric average of the

hourly arithmetic average emission concentrations using continuous emission monitoring system outlet data if compliance is based on an emission concentration, or continuous emission monitoring system inlet and outlet data if compliance is based on a percent reduction.
(9VAC 5-40-8140D.6)

66. At a minimum, valid continuous monitoring system hourly averages shall be obtained as specified in sections a. and b. of this condition, for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that Covanta Alexandria/Arlington, Inc. is combusting municipal solid waste.
- a. At least two data points per hour shall be used to calculate each 1-hour arithmetic average.
 - b. Each sulfur dioxide 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(9VAC 5-40-8140D.7)

67. The 1-hour arithmetic averages required under permit condition #65 shall be expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 24-hour daily geometric average emission concentrations and daily geometric average emission percent reductions. The 1-hour arithmetic averages shall be calculated using the data points required in 9 VA 5-40-41 B 3.
(9VAC 5-40-8140D.8)

68. All valid continuous emission monitoring system data shall be used in calculating average emission concentrations and percent reductions even if the minimum continuous emission monitoring system data requirements of permit condition #66 are not met.
(9VAC 5-40-8140D.9)

69. The procedures in 9 VAC 5-40-40 and 9 VAC 5-40-41 shall be followed for installation, evaluation, and operation of the continuous emission monitoring system.
(9VAC 5-40-8140D.10)

70. The initial performance evaluation shall be completed as specified in 9 VAC 5-40-8100.
(Note: This performance standard has been achieved.)
(9VAC 5-40-8140D.11)

71. The continuous emission monitoring system shall be operated according to Performance Specification 2 in appendix B of 40 CFR 60.
- a. During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 2 in appendix B of 40 CFR 60, sulfur dioxide and oxygen (or carbon dioxide) data shall be collected concurrently

(or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in permit conditions #71a(1) and #71a(2), below.

- (1) For sulfur dioxide, Reference Method 6, 6A, or 6C shall be used.
- (2) For oxygen (or carbon dioxide), Reference Method 3, 3A, or 3B, as applicable, shall be used.

- b. The span value of the continuous emissions monitoring system at the inlet to the sulfur dioxide control device shall be 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the municipal waste combustor unit. The span value of the continuous emission monitoring system at the outlet of the sulfur dioxide control device shall be 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the municipal waste combustor unit.

(9VAC 5-40-8140D.12).

72. Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 1 in appendix F of 40 CFR 60.
(9VAC 5-40-8140D.13)

73. When sulfur dioxide emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the board or Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 75 percent of the hours per day that Covanta Alexandria/Arlington, Inc. is operated and combusting municipal solid waste for 90

percent of the days per calendar quarter that Covanta Alexandria/Arlington, Inc. is operated and combusting municipal solid waste.
(9VAC 5-40-8140D.14)

Hydrogen chloride

74. The procedures and test methods specified in conditions #75 through #81 shall be used for determining compliance with the hydrogen chloride emission limit under 9 VAC 5-40-8030.
(9VAC 5-40-8140E)
75. Reference Method 26 or 26A, as applicable, shall be used to determine the hydrogen chloride emission concentration. The minimum sampling time for Reference Method 26 shall be 1 hour.
(9VAC 5-40-8140E.1)
76. An oxygen (or carbon dioxide) measurement shall be obtained simultaneously with each Reference Method 26 test run for hydrogen chloride required by permit condition #75.

(9VAC 5-40-8140E.2)

77. The percent reduction in potential hydrogen chloride emissions (% PHCl) is computed using the following equation:

$$(\%PHCl) = \left(\frac{E_i - E_o}{E_i} \right) \times 100$$

where:

$\%PHCl$ = percent reduction of the potential hydrogen chloride emissions achieved.

E_i = potential hydrogen chloride emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis).

E_o = controlled hydrogen chloride emission concentration measured at the control device outlet, corrected to 7 percent oxygen (dry basis).

(9VAC 5-40-8140E.3)

78. Covanta Alexandria/Arlington, Inc. may request that compliance with the hydrogen chloride emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide

levels for Covanta Alexandria/Arlington, Inc. shall be established as specified in 9 VAC 5-40-8150 B 6.

(9VAC 5-40-8140E.4)

79. As specified in 9 VAC 5-40-30, all performance tests shall consist of three test runs. The average of the hydrogen chloride emission concentrations or percent reductions from the three test runs is used to determine compliance.

(9VAC 5-40-8140E.5)

80. Covanta Alexandria/Arlington, Inc. shall conduct an initial performance test for hydrogen chloride as required in 9 VAC 5-40-8100.

(Note: This performance standard has been achieved.)

(9VAC 5-40-8140E.6)

81. Following the date that the initial performance test for hydrogen chloride is completed or is required to be completed in 9 VAC 5-40-8100, Covanta Alexandria/Arlington, Inc. shall conduct a performance test for hydrogen chloride emissions on an annual basis (no more than 12 calendar months following the previous performance test).

(9VAC 5-40-8140E.7)

Dioxin/Furan

82. The procedures and test methods specified in conditions #83 through #91 shall be used to determine compliance with the limits for dioxin/furan emissions under 9 VAC 5-40-8040.
(9VAC 5-40-8140F)
83. Reference Method 1 shall be used for determining the location and number of sampling points.
(9VAC 5-40-8140F.1)
84. Reference Method 3, 3A, or 3B, as applicable, shall be used for flue gas analysis.
(9VAC 5-40-8140F.2)
85. Reference Method 23 shall be used for determining the dioxin/furan emission concentration.
- a. The minimum sample time shall be 4 hours per test run.
- b. An oxygen (or carbon dioxide) measurement shall be obtained simultaneously with each Reference Method 23 test run for dioxins/furans.
(9VAC 5-40-8140F.3)
86. Covanta Alexandria/Arlington, Inc. shall conduct an initial performance test for dioxin/furan emissions in accordance with permit condition #85, as required in 9 VAC 5-40-8100.
(Note: This performance standard has been achieved.)
(9VAC 5-40-8140F.4)
87. Following the date that the initial performance test for dioxins/furans is completed or is required to be completed in 9 VAC 5-40-8100, Covanta Alexandria/Arlington, Inc. shall conduct performance tests for dioxin/furan emissions in accordance with permit condition # 85, according to one of the schedules in sections a. and b. of this permit condition.
- a. For affected facilities, performance tests shall be conducted on an annual basis (no more than 12 calendar months following the previous performance test).
- b. Where all performance tests over a 2-year period indicate that dioxin/furan emissions are less than or equal to 15 nanograms per dry standard cubic meter (total mass) for all affected facilities located within a municipal waste combustor plant, the owner of the municipal waste combustor plant may elect to conduct annual performance tests for one affected facility (i.e., unit) per year at the municipal waste combustor plant. At a minimum, a performance test for dioxin/furan emissions shall be conducted annually (no more than 12 months following the previous performance test) for one affected facility at the municipal

waste combustor plant. Each year a different affected facility at the municipal waste combustor plant shall be tested, and the affected facilities at the plant shall be tested in sequence (e.g., unit 1, unit 2, unit 3, as applicable). If each annual performance test continues to indicate a dioxin/furan emission level less than or equal to 15 nanograms per dry standard cubic meter (total mass), the owner may continue conducting a performance test on only one affected facility per year. If any annual performance test indicates a dioxin/furan emission level greater than 15 nanograms per dry standard cubic meter (total mass), performance tests thereafter shall be conducted annually on all affected facilities at the plant until and unless all annual performance tests for all affected facilities at the plant over a 2-year period indicate a dioxin/furan emission level less than or equal to 15 nanograms per dry standard cubic meter (total mass).

(9VAC 5-40-8140F.5)

88. If Covanta Alexandria/Arlington, Inc. elects to follow the performance testing schedule specified in permit conditions #87a and #87b above, Covanta Alexandria/Arlington, Inc. shall follow the procedures specified in 9 VAC 5-40-8160 D 4 for reporting the selection of this schedule.

(9VAC 5-40-8140F.6)

89. [Reserved]

90. Covanta Alexandria/Arlington, Inc. may request that compliance with the dioxin/furan emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for Covanta Alexandria/Arlington, Inc. shall be established as specified in 9 VAC 5-40-8150 B 6.

(9VAC 5-40-8140F.8)

91. As specified in 9 VAC 5-40-30, all performance tests shall consist of three test runs. The average of the dioxin/furan emission concentrations from the three test runs is used to determine compliance.

(9VAC 5-40-8140F.9)

Nitrogen Oxides

92. The procedures and test methods specified in conditions #93 through #104 shall be used to determine compliance with the nitrogen oxides emission limit for affected facilities under 9 VAC 5-40-8050.

(9VAC 5-40-8140G)

93. Reference Method 19, section 4.1, shall be used for determining the daily arithmetic average nitrogen oxides emission concentration.

(9VAC 5-40-8140G.1)

94. Covanta Alexandria/Arlington, Inc. may request that compliance with the nitrogen oxides

emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for Covanta Alexandria/Arlington, Inc. shall be established as specified in 9 VAC 5-40-8150 B 6.

(9VAC 5-40-8140G.2)

95. Covanta Alexandria/Arlington, Inc. is subject to the nitrogen oxides limit under 9 VAC 5-40-8050 and shall conduct an initial performance test for nitrogen oxides as required in 9 VAC 5-40-8100. Compliance with the nitrogen oxides emission limit shall be determined by using the continuous emission monitoring system specified in permit condition #96 for measuring nitrogen oxides and calculating a 24-hour daily arithmetic average emission concentration using Reference Method 19, section 4.1. (Note: This performance standard has been achieved.)
(9VAC 5-40-8140G.3)

96. Covanta Alexandria/Arlington, Inc. is subject to the nitrogen oxides emission limit under 9 VAC 5-40-8050 and shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring nitrogen oxides discharged to the atmosphere, and record the output of the system.
(9VAC 5-40-8140G.4)

97. Following the date that the initial performance test for nitrogen oxides is completed or is required to be completed in 9 VAC 5-40-8100, compliance with the emission limit for nitrogen oxides required under 9 VAC 5-40-8050 shall be determined based on the 24-hour daily arithmetic average of the hourly emission concentrations using continuous emission monitoring system outlet data.
(9VAC 5-40-8140G.5)

98. At a minimum, valid continuous emission monitoring system hourly averages shall be obtained as specified in sections a. and b. of this condition for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that Covanta Alexandria/Arlington, Inc. is combusting municipal solid waste.
- a. At least 2 data points per hour shall be used to calculate each 1-hour arithmetic average.
- b. Each nitrogen oxides 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(9VAC 5-40-8140G.6)

99. The 1-hour arithmetic averages required by permit condition #97 shall be expressed in parts per million by volume (dry basis) and used to calculate the 24-hour daily arithmetic average concentrations. The 1-hour arithmetic averages shall be calculated using the data points required in 9 VAC 5-40-41 B 3.
(9VAC 5-40-8140G.7)

100. All valid continuous emission monitoring system data must be used in calculating emission averages even if the minimum continuous emission monitoring system data requirements of permit condition #98 are not met.
(9VAC 5-40-8140G.8)
101. The procedures in 9 VAC 5-40-40 and 9 VAC 5-40-41 shall be followed for installation, evaluation, and operation of the continuous emission monitoring system. The initial performance evaluation shall be completed as specified in 9 VAC 5-40-8100.
(9VAC 5-40-8140G.9)
102. Covanta Alexandria/Arlington, Inc. shall operate the continuous emission monitoring system according to Performance Specification 2 in appendix B of 40 CFR 60 and shall follow the procedures and methods as follows:
 - a. During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 2 of appendix B of 40 CFR 60, nitrogen oxides and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in this permit condition #102a(1) and #102a(2).
 - (1) For nitrogen oxides, Reference Method 7, 7A, 7C, 7D, or 7E shall be used.
 - (2) For oxygen (or carbon dioxide), Reference Method 3, 3A, or 3B, as applicable, shall be used.
 - b. The span value of the continuous emission monitoring system shall be 125 percent of the maximum estimated hourly potential nitrogen oxide emissions of the municipal waste combustor unit.
(9VAC 5-40-8140G.10)
103. Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 1 in appendix F of 40 CFR 60.
(9VAC 5-40-8140G.11)
104. When nitrogen oxides continuous emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained using other monitoring systems as approved by the board or Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 75 percent of the hours per day for 90 percent of the days per calendar quarter the unit is operated and combusting municipal solid waste.
(9VAC 5-40-8140G.12)

Fugitive Ash

105. The procedures specified in conditions #106 through #109 shall be used for determining compliance with the fugitive ash emission limit under 9 VAC 5-40-8070.
(9VAC 5-40-8140H)
106. Reference Method 22 shall be used for determining compliance with the fugitive ash emission limit under 9 VAC 5-40-8070. The minimum observation time shall be a series of three 1-hour observations. The observation period shall include times when the facility is transferring ash from the municipal waste combustor unit to the area where ash is stored or loaded into containers or trucks.
(9VAC 5-40-8140H.1)
107. The average duration of visible emissions per hour shall be calculated from the three 1-hour observations. The average shall be used to determine compliance with 9 VAC 5-40-8070.
(9VAC 5-40-8140H.2)
108. Covanta Alexandria/Arlington, Inc. shall conduct an initial performance test for fugitive ash emissions as required in 9 VAC 5-40-8100.
(Note: This performance standard has been achieved.)
(9VAC 5-40-8140H.3)
109. Following the date that the initial performance test for fugitive ash emissions is completed or is required to be completed in 9 VAC 5-40-8100 for an affected facility, the owner shall conduct a performance test for fugitive ash emissions on an annual basis (no more than 12 calendar months following the previous performance test).
(9VAC 5-40-8140H.4)

Carbon Mass

110. Since activated carbon injection is used at Covanta Alexandria/Arlington, Inc. to comply with the mercury emission limit under 9 VAC 5-40-8010, or the dioxin/furan emission limits under 9 VAC 5-40-8040, or the dioxin/furan emission level specified in 9 VAC 5-40-8140 F 5 b, Covanta Alexandria/Arlington, Inc. shall follow the procedures specified in conditions #111 through #113.
(9VAC 5-40-8140J)
111. During the performance tests for dioxins/furans and mercury, as applicable, the owner shall estimate an average carbon mass feed rate based on carbon injection system operating parameters such as the gravimetric feed rate, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed, as specified in section a. of this permit condition.
 - a. An average carbon mass feed rate in kilograms per hour or pounds per hour shall be estimated during the initial performance test for mercury emissions and

each subsequent performance test for mercury emissions. The average carbon mass feed rate shall be based on a 6-hour average or the total sampling time during the most recent annual performance test for mercury.

(9VAC 5-40-8140J.1)

112. During operation of Covanta Alexandria/Arlington, Inc., the carbon injection system operating parameter(s) that are the primary indicator(s) of the carbon mass feed rate (e.g., gravimetric feeder setting) must equal or exceed the level(s) documented during the performance tests specified under permit conditions #111a.
(9VAC 5-40-8140J.2)
113. Covanta Alexandria/Arlington, Inc. shall estimate the total carbon usage of the plant (kilograms or pounds) for each calendar quarter by two independent methods, according to the procedures in sections a. and b. of this permit condition.
- a. The weight of carbon delivered to the plant.
 - b. Estimate the average carbon mass feed rate in kilograms per hour or pounds per hour for each hour of operation for each affected facility based on the parameters specified under permit condition #111, and sum the results for all affected facilities at the plant for the total number of hours of operation during the calendar quarter.

(9VAC 5-40-8140J.3)

PART VII - Monitoring

114. The permittee will monitor the differential pressure drop across each fabric filter on an ongoing basis. The continuous opacity monitor will be used as an indicator of proper operation of the fabric filter.
(9 VAC 5-40-50 H)
115. The provisions of 9 VAC 5-40-40 (Monitoring) apply except as provided in permit conditions #115A through #135.
(9 VAC 5-40-8150A)
- 115A. [Reserved]
- 115B. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems for opacity. For facilities combusting municipal-type solid waste, the span value for a continuous monitoring system for measuring opacity shall be between 0 and 35 percent.
(40 CFR 60.48b and 9 VAC 5-40-8060)
- 115C. [Reserved]

116. Covanta Alexandria/Arlington, Inc. shall install, calibrate, maintain, and operate a continuous emission monitoring system and record the output of the system for measuring the oxygen or carbon dioxide content of the flue gas at each location where carbon monoxide, sulfur dioxide, or nitrogen oxides emissions are monitored and shall comply with the test procedures and test methods specified in conditions #117 through #123.
(9VAC 5-40-8150B)
117. The span value of the oxygen (or carbon dioxide) monitor shall be 25 percent oxygen (or carbon dioxide).
(9VAC 5-40-8150B.1)
118. All continuous emission monitors for oxygen or carbon dioxide shall be installed, evaluated, and operated in accordance with 9 VAC 5-40-40 and 9 VAC 5-40-41.
(9VAC 5-40-8150B.2)
119. The initial performance evaluation shall be completed as specified in 9 VAC 5-40-8100.
(9VAC 5-40-8150B.3)
120. All continuous emission monitors for oxygen and carbon dioxide shall conform to Performance Specification 3 in appendix B of 40 CFR 60 except for section 2.3 (relative accuracy requirement).
(9VAC 5-40-8150B.4)
121. The quality assurance procedures of appendix F of 40 CFR 60 except for section 5.1.1 (relative accuracy test audit) shall apply to the monitor.
(9VAC 5-40-8150B.5)
122. If carbon dioxide is selected for use in diluent corrections, the relationship between oxygen and carbon dioxide levels shall be established during the initial performance test according to the procedures and methods specified in sections a. through d. of this permit condition. This relationship may be reestablished during performance compliance tests.
 - a. The fuel factor equation in Reference Method 3B shall be used to determine the relationship between oxygen and carbon dioxide at a sampling location. Reference method 3, 3A, or 3B, as applicable, shall be used to determine the oxygen concentration at the same location as the carbon dioxide monitor.
 - b. Samples shall be taken for at least 30 minutes in each hour.
 - c. Each sample shall represent a 1-hour average.
 - d. A minimum of three runs shall be performed.
(9VAC 5-40-8150B.6)
123. The relationship between carbon dioxide and oxygen concentrations that is established

in accordance with permit condition #122 shall be submitted to the board as part of the initial performance test report and, if applicable, as part of the annual test report if the relationship is reestablished during the annual performance test.
(9VAC 5-40-8150B.7)

124. The procedures specified in conditions #125 through #136 shall be used for determining compliance with the operating requirements under 9 VAC 5-40-8120.
(9VAC 5-40-8150C)
125. Compliance with the carbon monoxide emission limits in 9 VAC 5-40-7980 shall be determined using a 4-hour block arithmetic average.
(9VAC 5-40-8150C.1)
126. Covanta Alexandria/Arlington, Inc. shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring carbon monoxide at the combustor outlet and record the output of the system and shall follow the procedures and methods specified in sections a. and b. of this permit condition.
 - a. The continuous emission monitoring system shall be operated according to Performance Specification 4A in appendix B of 40 CFR 60.
 - b. During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 4A in appendix B of 40 CFR 60, carbon monoxide and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in this permit condition #126b(1) and #126b(2).
 - (1) For carbon monoxide, Reference Method 10, 10A, or 10B shall be used.
 - (2) For oxygen (or carbon dioxide), Reference Method 3, 3A, or 3B, as applicable, shall be used.
 - c. The span value of the continuous emission monitoring system shall be 125 percent of the maximum estimated hourly potential carbon monoxide emissions of the municipal waste combustor unit.
(9VAC 5-40-8150C.3)
127. The 4-hour block arithmetic average specified in permit condition #125 of this section shall be calculated from 1-hour arithmetic averages expressed in parts per million by volume corrected to 7 percent oxygen (dry basis). The 1-hour arithmetic averages shall be calculated using the data points generated by the continuous emission monitoring system. At least two data points shall be used to calculate each 1-hour arithmetic average.
(9VAC 5-40-8150C.4)

128. Covanta Alexandria/Arlington, Inc. may request that compliance with the carbon monoxide emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for Covanta Alexandria/Arlington, Inc. shall be established as specified in permit condition #122.
(9VAC 5-40-8150C.5)
129. The procedures specified in section a. through d. of this condition shall be used to determine compliance with load level requirements under 9 VAC 5-40-8120 A.
- a. Covanta Alexandria/Arlington, Inc. shall install, calibrate, maintain, and operate a steam flow meter or a feedwater flow meter; measure steam (or feedwater) flow in megagrams per hour (or kilopounds per hour) on a continuous basis; and record the output of the monitor. Steam (or feedwater) flow shall be calculated in 4-hour block arithmetic averages.
 - b. The method included in the "American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1 -- 1964 (R1991)" section 4 shall be used for calculating the steam (or feedwater) flow required under section a. of this permit condition. The recommendations in "American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th edition (1971)," chapter 4 shall be followed for design, construction, installation, calibration, and use of nozzles and orifices except as specified in section c. of this permit condition.
 - c. Measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed.
 - d. All signal conversion elements associated with steam (or feedwater flow) measurements must be calibrated according to the manufacturer's instructions before each dioxin/furan performance test, and at least once per year.
- (9VAC 5-40-8150C.6)
130. To determine compliance with the maximum particulate matter control device temperature requirements under 9 VAC 5-40-8120 B, Covanta Alexandria/Arlington, Inc. shall install, calibrate, maintain, and operate a device for measuring on a continuous basis the temperature of the flue gas stream at the inlet to each particulate matter control device utilized by Covanta Alexandria/Arlington, Inc. Temperature shall be calculated in 4-hour block arithmetic averages.
(9VAC 5-40-8150C.7)
131. The maximum demonstrated municipal waste combustor unit load shall be determined during the initial performance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit specified in 9 VAC 5-40-8040 is achieved. The maximum demonstrated municipal waste combustor unit load shall be the highest 4-hour arithmetic average load achieved during four consecutive

hours during the most recent test during which compliance with the dioxin/furan emission limit was achieved.
(9VAC 5-40-8150C.8)

132. For each particulate matter control device employed at Covanta Alexandria/Arlington, Inc., the maximum demonstrated particulate matter control device temperature shall be determined during the initial performance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit specified in 9 VAC 5-40-8040 is achieved. The maximum demonstrated particulate matter control device temperature shall be the highest 4-hour arithmetic average temperature achieved at the particulate matter control device inlet during four consecutive hours during the most recent test during which compliance with the dioxin/furan limit was achieved.
(9VAC 5-40-8150C.9)
133. At a minimum, valid continuous emission monitoring system hourly averages shall be obtained as specified in sections a. and b. of this condition for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that Covanta Alexandria/Arlington, Inc. is combusting municipal solid waste.
- a. At least two data points per hour shall be used to calculate each 1-hour arithmetic average.
 - b. At a minimum, each carbon monoxide 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(9VAC 5-40-8150C.10)

134. All valid continuous emission monitoring system data must be used in calculating the parameters specified under this section even if the minimum data requirements of permit condition #133 are not met. When carbon monoxide continuous emission data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained using other monitoring systems as approved by the board or Reference Method 10 to provide, as necessary, the minimum valid emission data.
(9VAC 5-40-8150C.11)

135. Quarterly accuracy determinations and daily calibration drift tests for the carbon monoxide continuous emission monitoring system shall be performed in accordance with procedure 1 in appendix F of 40 CFR 60.
(9VAC 5-40-8150C.12)

PART VIII - Notification, Recordkeeping and Reporting

136. The provisions of 9 VAC 5-40-50 (Notification, records and reporting) apply except as provided in permit conditions #137 through #149, #152 through #156 and #160 through 169. (9VAC 5-40-8160A)

Records

137. Covanta Alexandria/Arlington, Inc. shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Air Compliance Manager, Northern Virginia Regional Office. These records shall include, but are not limited to the information specified in permit conditions #138 through #151, as applicable, for each affected facility. These records shall be available on-site for inspection by the DEQ for a period of at least 5 years.
(9VAC 5-40-8160B, 9 VAC 5-40-50 and 9 VAC 5-50-50)
138. Covanta Alexandria/Arlington, Inc. shall maintain the calendar date of each record.
(9VAC 5-40-8160B.1)
139. The emission concentrations and parameters measured using continuous monitoring systems as specified under this condition.
- a. The measurements specified in a(1) through a(4) of this condition shall be recorded and be available for submittal to the board or review onsite by an inspector.
- (1) All 6-minute average opacity levels as specified under 9 VAC 5-40-8140 B.
 - (2) All 1-hour average sulfur dioxide emission concentrations as specified under 9 VAC 5-40-8140 D.
 - (3) All 1-hour average nitrogen oxides emission concentrations as specified under 9 VAC 5-40-8140 G.
 - (4) All 1-hour average carbon monoxide emission concentrations, municipal waste combustor unit load measurements, and particulate matter control device inlet temperatures as specified under 9 VAC 5-40-8150 C.
- b. The average concentrations and percent reductions, as applicable, specified in permit conditions #139b(1) through #139b(4) shall be computed and recorded, and shall be available for submittal to the board or review on-site by an inspector.
- (1) All 24-hour daily geometric average sulfur dioxide emission concentrations and all 24-hour daily geometric average percent reductions in sulfur dioxide emissions as specified under 9 VAC-5-40-8140D.
 - (2) All 24-hour daily arithmetic average nitrogen oxides emission concentrations as specified under 9 VAC 5-40-8140 G
 - (3) All 4-hour block or 24-hour daily arithmetic average carbon monoxide emission concentrations, as applicable, as specified under 9 VAC 5-40-8150 C.
 - (4) All 4-hour block arithmetic average municipal waste combustor unit load

levels and particulate matter control device inlet temperatures as specified under 9 VAC 5-40-8150 C.

(9VAC 5-40-8160B.2)

140. Identification of the calendar dates when any of the average emission concentrations, percent reductions, or operating parameters recorded under b (1) through b (4) of permit condition #139, or the opacity levels recorded under a (1) of permit condition #139 are above the applicable limits, with reasons for such exceedances and a description of corrective actions taken.

(9VAC 5-40-8160B.3)

141. For affected facilities that apply activated carbon for mercury control, the records specified in sections a. through d. of this condition.

- a. The average carbon mass feed rate (in kilograms per hour or pounds per hour) estimated as required under 9 VAC 5-40-8140 J 1 a during all annual performance tests for mercury emissions, with supporting calculations. The average carbon mass feed rate shall be based on a 6-hour average or the total sampling time of the most recent annual performance test for mercury.
- b. The average carbon mass feed rate (in kilograms per hour or pounds per hour) estimated for each hour of operation as required under 9 VAC 5-40-8140 J 3 b, with supporting calculations. The average carbon mass feed rate shall be based on a 6-hour average or the total sampling time of the most recent annual performance test for mercury.
- c. The total carbon usage for each calendar quarter estimated as specified by 9 VAC 5-40-8140 J 3, with supporting calculations.
- d. Carbon injection system operating parameter data for the parameter(s) that are the primary indicator(s) of carbon feed rate (e.g., gravimetric feeder).

(9VAC 5-40-8160B.4)

142. Identification of the calendar dates for which the minimum number of hours of any of the data specified in sections a. through e. of this condition have not been obtained including reasons for not obtaining sufficient data and a description of corrective actions taken.

- a. Sulfur dioxide emissions data;
- b. Nitrogen oxides emissions data;
- c. Carbon monoxide emissions data;
- d. Municipal waste combustor unit load data; and

e. Particulate matter control device temperature data.

(9VAC 5-40-8160B.5)

143. Identification of each occurrence that sulfur dioxide emissions data, nitrogen oxides emissions data, or operational data (i.e., carbon monoxide emissions, unit load, and particulate matter control device temperature) have been excluded from the calculation of average emission concentrations or parameters, and the reasons for excluding the data.

(9VAC 5-40-8160B.6)

144. The results of daily drift tests and quarterly accuracy determinations for sulfur dioxide, nitrogen oxides (large municipal waste combustors only), and carbon monoxide continuous emission monitoring systems, as required under appendix F of 40 CFR 60, procedure 1.

(9VAC 5-40-8160B.7)

145. The test reports documenting the results of all annual performance tests listed in sections a. and b. of this permit condition shall be recorded along with supporting calculations.

a. The results of all annual performance tests conducted to determine compliance with the particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission limits.

b. For all dioxin/furan performance tests recorded under section a. of this permit condition, the maximum demonstrated municipal waste combustor unit load and maximum demonstrated particulate matter control device temperature (for each particulate matter control device).

(9 VAC 5-40-8160B.8)

146. The records specified in sections a. through c. of this condition.

a. Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have been provisionally certified by the American Society of Mechanical Engineers or an equivalent board-approved certification program as required by 9 VAC 5-40-8130 A including the dates of initial and renewal certifications and documentation of current certification.

b. Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have been fully certified by the American Society of Mechanical Engineers or an equivalent board-approved certification program as required by 9 VAC 5-40-8130 B including the dates of initial and renewal certifications and documentation of current certification.

c. Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have completed the

EPA municipal waste combustor operator training course or a board-approved equivalent course as required by 9 VAC 5-40-8130 E including documentation of training completion.

(9 VAC 5-40-8160B.9)

147. Records showing the names of persons who have completed a review of the operating manual as required by 9 VAC 5-40-8130 G including the date of the initial review and subsequent annual reviews.
(9 VAC 5-40-8160B.10)
148. For affected facilities that apply activated carbon for mercury control, identification of the calendar dates when the average carbon mass feed rates recorded under permit condition #141b were less than either of the hourly carbon feed rates estimated during performance tests for mercury emissions and recorded under permit conditions #141a, respectively, with reasons for such feed rates and a description of corrective actions taken.
(9 VAC 5-40-8160B.11)
149. Since Covanta Alexandria/Arlington, Inc. applies activated carbon for mercury control, identification of the calendar dates when the carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate (e.g. gravimetric feed rate) recorded under permit condition #141d are below the level(s) estimated during the performance tests as specified in 9 VAC 5-40-8140 J 1 a and 9 VAC 5-40-8140 J 1 b, with reasons for such occurrences and a description of corrective actions taken.
(9 VAC 5-40-8160B.12)
150. Records showing the amount of No. 2 fuel oil used as auxiliary fuel in each of the municipal waste combustors.
(9 VAC 5-50-50 and 9 VAC 5-80-1700)
151. The continuous emission monitor system records shall be annotated to identify the municipal waste combustor train, dates, light-off and securing times, and average firing rates.
(9 VAC 5-50-50)
- 151A. [Reserved]
- 151B. [Reserved]
- 151C. The permittee shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. The content and format of such records shall be arranged with the Air Compliance Manager, Northern Virginia Regional Office. These records shall be available on-site for inspection by the DEQ for the life of the source.
(9 VAC 5-40-50, 40 CFR 60.110b(c) and 40 CFR 60.11b(a)-(b))

Annual Report

152. Covanta Alexandria/Arlington, Inc. shall submit an annual report including the information specified in permit conditions #153 through #156, as applicable, no later than February 1 of each year following the calendar year in which the data were collected (once the unit is subject to permitting requirements in a federal operating permit, Covanta Alexandria/Arlington, Inc. must submit these reports semiannually).
(9 VAC 5-40-8160D)
153. A summary of data collected for all pollutants and parameters regulated under this article, which includes the information specified in sections a. through e. of this permit condition.
- a. A list of the particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission levels achieved during the performance tests recorded under permit condition #145.
 - b. A list of the highest emission level recorded for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, and particulate matter control device inlet temperature based on the data recorded under permit condition #139b.
 - c. List the highest opacity level measured, based on the data recorded under permit condition #139a(1).
 - d. The total number of days that the minimum number of hours of data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load, and particulate matter control device temperature data were not obtained based on the data recorded under permit condition #142.
 - e. The total number of hours that data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load, and particulate matter control device temperature were excluded from the calculation of average emission concentrations or parameters based on the data recorded under permit condition #143.
- (9 VAC 5-40-8160D.1)
154. The summary of data reported under permit condition #153 shall also provide the types of data specified in permit condition #153 for the calendar year preceding the year being reported, in order to provide the board with a summary of the performance of Covanta Alexandria/Arlington, Inc. over a 2-year period.
(9 VAC 5-40-8160D.2)
155. The summary of data including the information specified in permit conditions #153 and #154 shall highlight any emission or parameter levels that did not achieve the emission or parameter limits specified under this article.
(9 VAC 5-40-8160D.3)

156. A notification of intent to begin the reduced dioxin/furan performance testing schedule specified in 9 VAC 5-40-8140 F 5 b during the following calendar year.
(9 VAC 5-40-8160D.4)
157. Annual emissions and a certification of compliance with the facility annual permit mass emission limitations utilizing a combination of steam production data, CEMS data, and results of stack testing shall be included in Covanta Alexandria/Arlington, Inc.'s annual report.
(9 VAC 5-50-50)
158. Covanta Alexandria/Arlington, Inc. shall demonstrate compliance in its annual report with all the lb/MMBtu and lb/hr mass emission limitations, or for HCl, SO₂ and mercury the percent removal requirements utilizing a combination of steam production data, CEMS data, and results of stack testing.
(9 VAC 5-50-50)
159. Covanta Alexandria/Arlington, Inc. shall document in its annual report that actual carbon monoxide (CO) emissions have not increased more than 99 tons per year from an average of 1998 & 1999 facility wide actual CO emissions of 46.5 tpy, calculated on a cumulative basis.
(9 VAC 5-50-50)

Semiannual Report

160. Covanta Alexandria/Arlington, Inc. shall submit a semiannual report that includes the information specified in permit conditions #160A through #165 for any recorded pollutant or parameter that does not comply with the pollutant or parameter limit specified under this article, according to the schedule specified under permit condition #166.
(9VAC 5-40-8160E)
- 160A. [Reserved]
161. The semiannual report shall include information recorded under permit condition #140 for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, particulate matter control device inlet temperature, and opacity.
(9VAC 5-40-8160E.1)
162. For each date recorded as required by permit condition #140 and reported as required by permit condition #161, the semiannual report shall include the sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, particulate matter control device inlet temperature, or opacity data, as applicable, recorded under permit conditions #140a(1) and #140b, as applicable.
(9VAC 5-40-8160E.2)
163. If the test reports recorded under permit condition #145 document any particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash

emission levels that were above the applicable pollutant limits, the semiannual report shall include a copy of the test report documenting the emission levels and the corrective actions taken.

(9VAC 5-40-8160E.3)

164. The semiannual report shall include the information recorded under permit condition #149 for the carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate.

(9VAC 5-40-8160E.4)

165. For each operating date reported as required by permit condition #164 the semiannual report shall include the carbon feed rate data recorded under permit condition #141b.

(9VAC 5-40-8160E.5)

166. Semiannual reports required by permit conditions #160 through #166 shall be submitted according to the schedule specified in sections a. and b. of this permit condition.

a. If the data reported in accordance with permit conditions #161 through #165 were collected during the first calendar half, then the report shall be submitted by August 1 following the first calendar half.

b. If the data reported in accordance with permit conditions #161 through #165 were collected during the second calendar half, then the report shall be submitted by February 1 following the second calendar half.

(9VAC 5-40-8160E.6)

167. All reports specified under permit conditions #152 through #165 shall be submitted as a paper copy, postmarked on or before the submittal dates specified under these permit conditions, and maintained onsite as a paper copy for a period of 5 years.

(9VAC 5-40-8160G)

168. All records specified under permit conditions #137 through #149 shall be maintained onsite in either paper copy or computer-readable format, unless an alternative format is approved by the board.

(9VAC 5-40-8160H)

169. If Covanta Alexandria/Arlington, Inc. would prefer to select a different annual or semiannual date for submitting the periodic reports required by permit conditions #152 through #166, then the dates may be changed by mutual agreement between the owner and the board.

(9VAC 5-40-8160I)

Initial Performance Test Report

170. Covanta Alexandria/Arlington, Inc. shall submit the information specified in sections a. through f. of this permit condition in the initial performance test report.
- a. The initial performance test data as recorded under permit condition #139b for the initial performance test for sulfur dioxide, nitrogen oxides, carbon monoxide, MWC combustor unit load level, and particulate matter control device inlet temperature.
 - b. The test report documenting the initial performance test recorded under permit condition #145 for particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emissions.
 - c. The performance evaluation of the continuous emission monitoring system using the applicable performance specifications in appendix B of 40 CFR Part 60.
 - d. The maximum demonstrated MWC unit load and maximum demonstrated particulate matter control device inlet temperatures established during the initial dioxin/furan performance test as recorded in permit condition #145.
 - e. For affected facilities that apply activated carbon injection for mercury control, the owner shall submit the average carbon mass feed rate recorded under permit condition #141a.

(Note: This initial performance test report has been submitted and the requirements of this permit condition have been achieved.)
(9VAC 5-40-8160J)

PART IX - Compliance

171. The provisions of 9 VAC 5-40-20 (Compliance) apply except as provided in permit condition #172 through #174.
(9VAC-5-40-8100)
172. The provisions for startup, shutdown, and malfunction in this permit condition apply. Test methods and procedures for determining compliance shall be performed as specified in 9 VAC 5-40-8140. The standards under this permit apply at all times except during periods of startup, shutdown, or malfunction. Duration of startup, shutdown, or malfunction periods are limited to 3 hours per occurrence.
- a. The startup period commences when the municipal waste combustor unit begins the continuous burning of municipal solid waste and does not include any warmup period when the municipal waste combustor unit is combusting fossil fuel or other nonmunicipal solid waste fuel, and no municipal solid waste is being fed to the combustor.

- b. Continuous burning is the continuous, semicontinuous, or batch feeding of municipal solid waste for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation for waste disposal or energy production. The use of municipal solid waste solely to provide thermal protection of the grate or hearth during the startup period when municipal solid waste is not being fed to the grate is not considered to be continuous burning.

(9VAC 5-40-8100B)

173. Municipal waste combustor unit capacity shall be calculated based on 24 hours of operation at the maximum charging rate. The maximum charging rate shall be calculated based on the maximum design heat input capacity of the unit and a heating value of 10,500 kilojoules per kilogram (4,500 Btu/lb) for combustors firing municipal solid waste that is not refuse-derived fuel.
(9 VAC 5-40-8100C.1 and 9 VAC 5-40-8100C.1a)
174. The provisions of 40 CFR 62.14109, Subpart FFF reporting, and recordkeeping, and compliance and performance testing, (63 FR 63191, November 12, 1998) apply to the extent they do not conflict with this article.
(9VAC 5-40-8100F)

PART X - Compliance Schedules.

175. The compliance schedule provisions of 40 CFR 62.14108 (63 FR 63191, November 12, 1998) apply to the extent they do not conflict with 9 VAC 5-40 Article 46. Consistent with the compliance schedule set forth in Table 4 of Subpart FFF, final compliance with the provisions of this permit must be achieved by 12/19/00.
(Note: This performance standard has been achieved.)
(9VAC 5-40-8110A and 40 CFR Part 62.14100 et seq.)
176. Covanta Alexandria/Arlington, Inc. shall comply with the municipal waste combustor operator training and certification requirements under 9 VAC 5-40-8130 according to the schedule specified in sections a. and b. of this permit condition.
- a. Covanta Alexandria/Arlington, Inc. shall comply with the municipal waste combustor operator training and certification requirements specified in 9 VAC 5-40-8130 A through D by August 1, 2000.
- b. Covanta Alexandria/Arlington, Inc. shall comply with the requirements specified in 9 VAC 5-40-8130 E through H no later than August 1, 2000.
- (1) The requirement specified in 9 VAC 5-40-8130 E does not apply to chief facility operators, shift supervisors, and control room operators who have obtained full certification from the American Society of Mechanical Engineers on or before the effective date of this article.

- (2) Covanta Alexandria/Arlington, Inc. may request that the board waive the requirement specified in 9 VAC 5-40-8130 E for chief facility operators, shift supervisors, and control room operators who have obtained provisional certification from the American Society of Mechanical Engineers on or before the effective date of this article.
- (3) The initial training requirements specified in 9 VAC 5-40-8130 G 1 shall be completed no later than the date specified in this permit condition #176b(3a) and 176b(3) whichever is later.
 - (a) August 1, 2000; or
 - (b) The date prior to the day when the person assumes responsibilities affecting municipal waste combustor unit operation.

(Note: This performance standard has been achieved.)
(9 VAC 5-40-8110B)

PART XI - GENERAL CONDITIONS

177. **Testing/Monitoring Ports** - The permitted facility shall be constructed so as to allow for emissions testing and monitoring upon reasonable notice at any time, using appropriate methods. This includes constructing the facility such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and providing stack or duct that is free from cyclonic flow. Test ports shall be provided when requested in accordance with the applicable performance specification (reference 40 CFR Part 60, Appendix B).
(9 VAC 5-50-30 F)
178. This is not a permit under the Resource Conservation and Recovery Act (RCRA). Questions on the applicability of RCRA can be directed to the Virginia Department of Environmental Quality - Waste Division.
(9 VAC 5-170-160)
179. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:
 - a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
 - b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
 - c. To inspect at reasonable times any facility, equipment, or process subject to the

terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.
(9 VAC 5-170-130)

180. **Notification for Control Equipment Maintenance** - The permittee shall furnish notification to the Air Compliance Manager, Northern Virginia Regional Office of the intention to shut down or bypass, or both, air pollution control equipment for necessary scheduled maintenance, which results in excess emissions for more than one hour, at least 24 hours prior to the shutdown. The notification shall include, but is not limited to, the following information:

- a. Identification of the air pollution control equipment to be taken out of service, as well as its location, and registration number;
- b. The expected length of time that the air pollution control equipment will be out of service;
- c. The nature and quantity of emissions of air pollutants likely to occur during the shutdown period;
- d. Measures that will be taken to minimize the length of the shutdown or to negate the effect of the outage.

(9 VAC 5-20-180 B)

181. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Air Compliance Manager, Northern Virginia Regional Office of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone, telegraph, or other electronic methods. Excess emissions for NO_x, SO₂ and CO for more than one hour shall be based on the averaging periods specified in Condition #9 and the emission limits specified in Condition #10. Such notification shall be made as soon as practicable but not later than four daytime business hours of the malfunction.

The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within 14 days of the occurrence. Owners who are subject to the requirements of 9 VAC 5-40-50C and 9 VAC 5-50-50C, are not required to provide the written statement prescribed in this permit condition for facilities which are subject to the monitoring requirements of 9 VAC 5-40-40 and 9 VAC 5-50-40. 9 VAC 5-40-50C states that:

"Each owner required to install a continuous monitoring system shall submit a written report of excess emissions (as defined in the applicable emission standard) to the board for every calendar quarter. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter and shall include the following information:

- a. The magnitude of excess emissions computed in accordance with 9 VAC 5-40-41B6, any conversion factors used, and the date and time of commencement and completion of each period of excess emissions;
- b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the source. The nature and cause of any malfunction (if known), the corrective action taken or preventative measure adopted;
- c. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and
- d. When no excess emissions have occurred or the continuous monitoring system have not been inoperative, repaired or adjusted, such information shall be stated in the report."

When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Air Compliance Manager, Northern Virginia Regional Office in writing.
(9 VAC 5-20-180 C and 9 VAC 5-40-50C)

182. **Facility or Control Equipment Malfunction - Hazardous Air Pollutant Processes -** The processes listed below shall, upon request of the Department, shut down immediately if its emissions increase in any amount because of a bypass, malfunction, shutdown or failure of the process or its associated air pollution control equipment. The processes shall not return to operation until it and the associated air pollution control equipment are able to operate in the proper manner.

- a. Three municipal waste combustors (MWC's) each nominally rated at 121.8 million Btu per hour based on a higher heating value (HHV) of 4,500 Btu/lb for MSW.

(9 VAC 5-20-180 F 3)

183. **Violation of Ambient Air Quality Standard -** The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I)

184. **Permit Suspension/Revocation -** This permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the application for this permit or any amendments to it;
- b. Fails to comply with the conditions of this permit;
- c. Fails to comply with any emission standards applicable to the equipment listed in condition #2;
- d. Causes emissions from this facility which result in violations of, or interferes with the attainment and maintenance of, any ambient air quality standard;
- e. Fails to operate this facility in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect on the date that the application for this permit is submitted;
- f. Fails to modify or operate this facility in accordance with the application for this permit or any amendments to it; or
- g. Allows the permit to become invalid.

(9 VAC 5-80-10 K)

185. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Air Compliance Manager, Northern Virginia Regional Office of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-10 O)
186. **Registration/Update** - Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.
(9 VAC 5-170-60 and 9 VAC 5-20-160)
187. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-170-160)

188. **Disclaimer-** The standards of performance for Municipal Waste Combustors (MWC), Rule 4-46, 40 CFR 60 Subpart Cb – Emission Guidelines and 40 CFR 62 Subpart FFF referenced in this permit are current as of the effective date of this permit. If the applicable MWC rules are revised by EPA or the Virginia DEQ, the most recent regulations shall be used in determining compliance.
(9 VAC 5-170-80 and 9 VAC 5-40-7950)

Part XII - State Only Requirements

1. **Standard for Odor:** The provisions of Article 2 (9 VAC 5-40-130 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Odor, Rule 4-2) apply. To minimize odors at the facility, the tipping floor is fully enclosed. A negative pressure shall be maintained on the tipping floor and air from within the building will be used as combustion air. (9 VAC 5-40-8080.)

2. **Standard for Toxic Pollutants:** The provisions of Article 3 (9 VAC 5-40-160 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Toxic Pollutants, Rule 4-3) apply. (9 VAC 5-40-8090.)

3. Emissions from the operation of EACH municipal waste combustor shall not exceed the limitations specified below:

| | <u>lb/MMBtu</u> | <u>tons/yr</u> |
|-------------------|----------------------|----------------|
| Antimony | 3.3×10^{-4} | 0.175 |
| Arsenic | 7.6×10^{-5} | 0.04 |
| Hydrogen Bromide | 6.0×10^{-2} | 31.97 |
| Hydrogen Fluoride | 1.4×10^{-2} | 7.45 |

(9 VAC 5-50-260, 9 VAC 5-50-270, 9 VAC 5-50-280 and 9 VAC 5-50-180)

4. Emissions from the operation of the facility shall not exceed the limitations specified below:

| | <u>tons/yr</u> |
|-------------------|----------------|
| Antimony | 0.53 |
| Arsenic | 0.12 |
| Hydrogen Bromide | 95.91 |
| Hydrogen Fluoride | 22.35 |

(9 VAC 5-50-260, 9 VAC 5-50-270, 9 VAC 5-50-280 and 9 VAC 5-50-180)

5. Covanta Alexandria/Arlington, Inc. shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Air Compliance Manager, Northern Virginia Regional Office. These records shall include, but are not limited to:

- a. Stack test results demonstrating compliance with hydrogen fluoride, antimony, arsenic and hydrogen bromide emissions limits.

These records shall be available on-site for inspection by the DEQ. (9 VAC 5-50-50)

PART XIII - DOCUMENT LIST

1. Permit application from Ogden Martin Systems of Alexandria/Arlington, dated March 28, 1984 (Revised June 1, 1984 and July 25, 1984).
2. Letter to Howard Sharfner from Mr. John C. Doherty, dated April 9, 1984, Subject: Approval of Draft TRC Modeling Plan dated March 28, 1984.
3. Letter to Mr. Dennis Carroll from Mr. John M. Daniel, Jr., dated May 7, 1984, Subject: BACT determination and PSD Permit Application Requirements.
4. Modeling Plan for the Air Quality Analysis for the Alexandria Waste-to-Energy Facility; TRC Environmental Consultants, Inc., May 8, 1984.
5. TRC Project Note No. 1: Determination of the Modeling and Screening Areas for the Alexandria Waste-to-Energy Facility, dated June 6, 1984.
6. Letter to Mr. Mitchell Wormbrand from Mr. Limon E. Fortner, dated June 26, 1984, Subject: Approval of Screening Model Analysis and Instructions for PSD Modeling.
7. TRC, Inc. Report on Air Quality Impact Analysis, dated July 25, 1984.
8. Ogden Martin Systems of Alexandria/Arlington Solid Waste Management (RCRA) permit.
9. VDAPC-VII memorandum, Amendment to the Alexandria/Arlington Waste-to-Energy (WTE) Facility, dated May 25, 1988 (engineering analysis).
10. State Air Pollution Control Board, Acting Executive Director letter to OMS, transmittal of amended permit increasing annual throughput limit, June 19, 1986 (the current permit).
11. OMSA letter to SAPCB, PSD Permit Modification for the Alexandria/Arlington Resource Recovery Facility, December 29, 1987 (meeting request).
12. Ogden Projects, Inc., Environmental Test Report, dated December 30, 1987 and revised January 8, 1988.
13. OMSA letter to State Air Pollution Control Board, Region VII, Alexandria/Arlington Resource Recovery Facility PSD Permit No. 71895, dated February 3, 1988 (request for consent agreement).
14. OMS letter to State Air Pollution Control Board, same subject, dated February 11, 1988 (transmittal of information).
15. Consent Agreement and Order, State Air Pollution Control Board with OMSA, dated February 18, 1988 (authority to operate at NO_x emission levels above permit limits

pending Board action.

16. State Air Pollution Control Board, Assistant Executive Director, Operations memorandum Meeting on March 3 on Alexandria Incinerator, dated March 7, 1988.
17. Ogden Projects, Incorporated, Environmental Test Report #144B (dioxin test with lime), dated March 9, 1988.
18. OMS letter to State Air Pollution Control Board, Region VII, Alexandria/Arlington Waste-to-Energy Facility, March 11, 1988 (transmittal of air quality analysis report).
19. RTP Environmental Associates letter to State Air Pollution Control Board, Division of Computer Services, transmittal of computer modeling output, dated March 18, 1988.
20. OMS letter to State Air Pollution Control Board, Region VII, Alexandria/Arlington Waste-to-Energy Facility, received March 18, 1988 (transmittal of NO_x BACT Review)
21. State Air Pollution Control Board, Division of Computer Services memorandum, Meeting of March 22, 1988 with Source Representatives, dated March 25, 1988 (review of modeling report).
22. OMS letter to State Air Pollution Control Board, Region VII, Alexandria/Arlington Waste-to-Energy Facility; Agency Review Draft – PSD Permit No. 71895, dated April 5, 1988 (formal request for permit amendment to increase NO_x limit).
23. State Air Pollution Control Board, Division of Computer Services, memorandum, Report on Modeling for Proposed Change to PSD Permit for the Alexandria/Arlington Resource Recovery Facility (Ogden Martin Systems, Inc.), dated April 11, 1988.
24. State Air Pollution Control Board, Division of Computer Services, letter to RTP Environmental Associates, Modeling Protocol for Additional Analyses – Alexandria RRF, dated April 22, 1988.
25. State Air Pollution Control Board, Executive Director letter to OMS, request for detailed analysis and comparisons, Fairfax versus Alexandria/Arlington incinerators, dated May 2, 1988.
26. OMS letter to State Air Pollution Control Board, Region VII, Alexandria Air Quality Modeling, PSD Permit No. 71895, dated May 3, 1988 (transmittal of report of additional modeling).
27. OMS letter to SAPCB, Region VII, PSD Permit No. 71895 Lime Injection System Status Report, dated May 11, 1988 (modification completion report).
28. OMS letter to State Air Pollution Control Board, Executive Director, Alexandria/Arlington Resource Recovery Facility PSD Permit No. 71895, dated May 12, 1988 (response to May 2, 1988 request for analysis and comparisons, Fairfax facility versus Alexandria

facility).

29. State Air Pollution Control Board, Division of Computer Services, Report on Supplemental Modeling for Proposed Change to PSD Permit for the Alexandria/Arlington Resource Recovery Facility (Ogden Martin Systems, Inc.), dated May 13, 1988.
30. Exxon R&E Company letter to State Air Pollution Control Board, Division of Source Evaluation, Thermal DeNOX for MSW Incinerator, dated May 13, 1988.
31. State Air Pollution Control Board, Assistant Executive Director, Operations letter to EPA Region III, notification of scheduled public hearing for PSD permit changes and transmittal of relative documents, dated May 23, 1988 (copies also provided to numerous carbon copy addressees).
32. State Air Pollution Control Board, Division of Source Evaluation letter to OMS, Ogden Martin Systems of Alexandria/Arlington, Inc., Request for Permit Amendment, dated May 24, 1988 (notifies source of public hearing, requests their participation).
33. State Air Pollution Control Board, Assistant Executive Director, Operations letter to EPA, Region III, transmittal of staff engineering analysis, dated May 17, 1988 (same carbon copy addressees as with the May 23, 1988 PSD notification letter).
34. State Air Pollution Control Board, Division of Source Evaluation memorandum, Report of Modeling of Selected Pollutants; Ogden Martin Systems of Alexandria/Arlington (OMSA), dated May 31, 1988 (ambient air impact of non-criteria pollutants).
35. EPA Region III letter to State Air Pollution Control Board, Assistant Executive Director, Operations, Alexandria/Arlington, Inc. PSD Permit Modification, dated June 13, 1988 (provides EPA comments and suggestions concerning content of draft proposed permit).
36. Transcript of Alexandria/Arlington Waste-to-Energy Plant Public Hearing, City of Alexandria, Virginia, (conducted) June 20, 1988.
37. State Air Pollution Control Board, Region VII memorandum, Public Hearing Report – Amendment to Permit for Ogden Martin Systems of Alexandria/Arlington, Inc.; Registration No. 71895, dated July 1, 1988 (summarized proceedings, reports comments from attending citizens, transmits attendance record and written comments submitted to the Board).
38. Shenandoah National Park letter to State Air Pollution Control Board, Assistant Executive Director, Operations, comments on the draft proposed permit, dated July 1, 1988.
39. OMS letter to State Air Pollution Control Board, Division of Source Evaluation, Alexandria/Arlington Resource Recovery Facility PSD Permit No. 71895, dated July 8,

1988 (expression of concerns regarding intra-Staff recommendations for further changes to draft permit).

40. Virginia Department of Air Pollution Control letter to Superintendent, Shenandoah National Park, staff response to comments provided by the Park Service in their July 1, 1988 letter dated July 13, 1988.
41. OMS letter to Virginia Department of Air Pollution Control, Division of Source Evaluation, Alexandria/Arlington Resource Recovery Facility PSD Permit No. 71895, dated July 14, 1988 (transmittal of requested emission rates for non-criteria pollutants and comments concerning proposed reductions in SO₂ and HC₁ emission limits).
42. OMS letter to Virginia Department of Air Pollution Control, Alexandria/Arlington Resource Recovery Facility PSD Permit No. 71895, dated July 22, 1988 (budgetary cost estimates of retrofit control system options).
43. OMS letter to Virginia Department of Air Pollution Control, dated May 19, 1989 requesting use of the data acquisition system (DAS) at the facility in lieu of data loggers and strip chart recorders. (Granted in PSD permit amendment of July 7, 1989).
44. OMS letters to Region VII, Virginia Department of Air Pollution Control, dated November 1, and December 26, 1990 requesting increase in annual throughput limitation from 302,000 tons to 320,000 tons for the facility. (Granted in PSD permit amendment of February 15, 1991).
45. OMS letter to Executive Director, to Virginia Department of Air Pollution Control, dated May 29, 1991 concerning compliance with environmental guidelines.
46. OMS letter to Region VII, Virginia Department of Air Pollution Control, dated August 15, 1991 concerning proposed permit modifications.
47. OMS letter to Region VII, Virginia Department of Air Pollution Control, dated October 18, 1991 concerning implementation of MWC emission guidelines.
48. OMS letter to Region VII, Virginia Department of Air Pollution Control, dated November 1, 1991 concerning stream flow and summary of stack tests at the facility.
49. Joint Arlington County/City of Alexandria letter to Region VII, Virginia Department of Air Pollution Control, dated December 18, 1991 supporting the OMS request for permit amendments on increased throughput and that the demand was unanticipated.
50. Region VII, letter to OMS, dated January 9, 1992 requesting additional information on the proposed changes to the PSD permit for the facility.
51. OMS letter to Region VII, Department of Air Pollution Control, dated January 31, 1992 providing additional information on proposed changes to the PSD permit for the facility.

52. Region VII Memoranda to AED-Regional Operations, Subject: PSD Permit Amendment, Ogden Martin Systems of Alexandria/Arlington, Inc., Registration No. 71895, dated December 24, 1991 and February 18, 1992 the PSD permit for the facility.
53. OMS letter to Region VII, Department of Air Pollution Control, dated September 11, 1992 requesting amendments to the PSD permit for the facility.
54. Region VII Memorandum to AED-Regional Operations, dated October 20, 1992 providing proposed amendments to the PSD permit for the facility to include substitution of annual steam production for annual throughput, reductions in annual allowable emissions of NO_x, SO₂ and HCl, and other changes to the permit conditions based upon 40 CFR 60, Subpart Ca requirements.
55. OMS letter to the Virginia Department of Environmental Quality, Northern Virginia Regional Office, dated May 2, 2000 requesting amendments to the PSD permit for the facility.
56. OMS facsimile transmission to the Virginia Department of Environmental Quality, Northern Virginia Regional Office, dated August 22, 2000, providing additional information needed to process the amendment to the PSD permit.
57. Permit application from Covanta Alexandria/Arlington, dated August 13, 2007 (Revised February 4, 2009).
58. Covanta Alexandria/Arlington letter to the Virginia Department of Environmental Quality, Northern Regional Office, dated September 10, 2010 requesting amendments to the PSD permit for the facility and providing proposed Material Review Process.

SOURCE TESTING REPORT FORMAT

Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Tester; name, address and report date

Certification

1. Signed by team leader / certified observer (include certification date)
- 2.* Signed by reviewer

Introduction

1. Test purpose
2. Test location, type of process
3. Test dates
- 4.* Pollutants tested
5. Test methods used
6. Observers' names (industry and agency)
7. Any other important background information

Summary of Results

1. Pollutant emission results / visible emissions summary
2. Input during test vs. rated capacity
3. Allowable emissions
- 4.* Description of collected samples, to include audits when applicable
5. Discussion of errors, both real and apparent

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Process and control equipment data

*** Sampling and Analysis Procedures**

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2. Sampling point description
3. Sampling train description
4. Brief description of sampling procedures with discussion of deviations from standard methods
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___ * Not applicable to visible emission evaluations.

APPENDIX A

Material Review Process

Material Review Process

**Covanta Alexandria/Arlington, Inc.
5301 Eisenhower Avenue
Alexandria/Arlington, VA 22304**

**Prepared by
Covanta Energy
September 22, 2010**

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Section 1 - Objectives

The objective of this Material Review Process (MRP) is to ensure that the Covanta Alexandria/Arlington, Inc. (CAA) facility manages and processes Supplemental Waste in an environmentally sound manner in accordance with applicable environmental permits (ref appendix I) and regulations (ref appendix II). Supplemental wastes include other wastes which are not defined as MSW but have similar characteristics to MSW, and Special Wastes requiring special precautions as defined in 9VAC20-80-10 (reference Appendix I). Although MSW is defined in the Municipal Waste Combustor (MWC) regulations which govern the operation and establish the emission standards for facilities such as the CAA (9 VAC 5 Chapter 40, Part II, Article 54, currently codified at 9 VAC 5-40-7960), this definition of MSW is intended only to specify the types of wastes which trigger a combustion facility to be covered under the MWC rules. The language found in the Article 54 definition of MSW was used by VADEQ to develop the definition of Approved Fuel in Condition IIIA2 of the Title V permit for the CAA facility (see definitions, Appendix I in this MRP).

This MRP describes the process used to identify, evaluate, document, and properly handle all Supplemental Wastes received and processed by CAA. Detailed CAA procedures and coordination procedures between Covanta Secure Services (CSS), the corporate group responsible for reviewing Supplemental Waste and CAA are included in the 'Standard Operating Procedure - Supplemental Waste Program' for Covanta, Inc. These detailed procedures are provided to VADEQ as part of the documentation of the Solid Waste Facility Permit and are summarized in this MRP.

The MRP starts with a Material Characterization Form (MCF---copy provided in Appendix III of this MRP) prepared by a generator of Supplemental Waste. The generator is required to provide information on the waste (e.g. MSDS', analysis, generator knowledge, etc.) so that a total review and assessment can be made as to its suitability for thermal destruction at CAA. This review, which includes environmental, health, safety and process considerations, is conducted by CSS. Once the Supplemental Waste is approved by CSS, the entire package is sent to CAA for final review. The CAA Facility Manager has final authority to accept and process Supplemental Waste. Once the facility review is completed, the facility notifies CSS of its decision. Following CSS & CAA approvals, a letter of approval is sent to the generator for Supplemental Wastes which are approved. These wastes can then be received/processed at CAA. If the Supplemental Waste is rejected, a letter of rejection is sent to the generator. The MRP analysis/report will be sent to VADEQ for their record. All records and documentation will be kept on file at CAA for a minimum of 5 years.

Section 2 - Categories of Supplemental Waste Applications

Supplemental Waste Application categories established by the MRP include:

- Supplemental Waste that does not require review
- Supplemental Waste that does require review
- Supplemental Waste that is not acceptable

2.1 Supplemental Waste Applications That Do Not Require Review:

Supplemental Wastes that do not require review are those discarded materials excluded from the definition of MSW, which by nature of their similarity to items discarded in the MSW stream and chemical composition, have no impact on air emissions. These materials are limited to:

- Wood pallets (note: pallets cannot contain any “treated” wood)
- Combustible portion of “clean” construction, renovation and demolition waste such as wood and carpet (must not be covered in wire or roofing shingles)

In addition, Supplemental Wastes that do not require review also include discarded materials excluded from the definition of MSW due to origination as industrial process or manufacturing waste but are similar to the components of MSW. These materials are limited to:

- Packaging debris including
 - i. Paper, cardboard and cellulose products
 - ii. Plastic products
 - iii. Wood
- Food
- Clothing

This type of Supplemental Waste is not profiled, but instead receives a generic approval using the alternate MCF (Form 1G—see appendix III), and is processed when received.

2.2 Supplemental Waste Applications That Require Review:

Supplemental Wastes that requires review are profiled to determine acceptability. Generally, these categories of Supplemental Wastes are those discarded materials excluded from the definition of MSW because they are industrial process or manufacturing waste. Industrial process or manufacturing waste shall mean any solid waste that is the direct result of the production process, including finished product that has not been warehoused or distributed to commercial, retail or institutional facilities. Any source generating Supplemental Wastes will be considered for review, with the acceptability determined by the nature of the wastes themselves. Quantity limits will be determined on a case-by-case basis as necessary by CSS and will be consistent with limits imposed by the CAA operating requirements.

The following are categories of Supplemental Waste that are acceptable at CAA provided that they meet the review criteria established by this MRP.

- Oily waste, consisting of absorbents and debris with oil contamination. All recoverable oil removed.
- Soil contaminated with petroleum product as defined by 9 VAC 20-80-760 (Appendix I).
- Commercial Chemical Product as defined by 9 VAC 20-80-10.
- Industrial Waste as defined by 9 VAC 20-80-10 (Appendix I).
- Liquid Waste as defined by 9 VAC 20-80-10 (Appendix I).
- "RCRA empty" containers that are not subject to 40 CFR 261 through 265, etc. as defined in 40 CFR 261.7 (Appendix I).
- "Triple rinsed" pesticide containers.
- Sewage Sludge

2.3 Supplemental Waste That Is Not Acceptable

Supplemental Waste identified below is not acceptable for processing at CAA as applied to homogenous loads of the following materials:

- FIFRA regulated pesticides.
- RCRA hazardous waste.
- Hazardous waste as defined by 40 CFR 261 (Appendix D).
- Materials exempt from RCRA hazardous waste regulations due to the small quantity generator rules, 40 CFR 261.5 (Appendix D).
- Solid waste containing concentrations of PCBs greater than 1.0 ppmw, 9 VAC 20-80-650 (Appendix D).
- Regulated medical waste as defined by 9 VAC 20-120-10 (Appendix D).
- Batteries.
- Bulky waste, large machinery and appliances.
- Non combustible portion of construction and demolition materials.
- Explosives.
- Universal Waste.
- Radioactive materials.
- Street sweepings from public roads outside facility property.
- Transformers and ballasts.
- Any mercury containing waste.
- Any waste otherwise prohibited by state or federal regulation.
- Animal carcasses

Section 3 -Supplemental Waste Management

All Waste Material Generators are responsible for the proper identification and classification of their Supplemental Waste. Any Waste Material Generator that requests to have its Supplemental Waste processed at CAA must have an approval letter documenting CSS and CAA review and evaluation of the waste material. This section describes the review and evaluation procedures and the responsibilities of the Supplemental Waste generator.

3.1 Application, Review and Evaluation Process

3.1.1 Application Procedures

Generators of Supplemental Wastes pursuant to this document may apply for disposal at CAA by contacting CSS. Applicants will be sent a MCF to be completed for each waste stream; these forms have been included in Appendix III. The Waste Material Generator will complete, sign and return the forms to fully characterize the waste stream. The type of chemical information that may be requested is discussed in Section 4.2.

3.1.2 Waste Evaluation

CSS Environmental, Health and Safety Specialists will evaluate each Supplemental Waste application using the approval criteria outlined in Section 4 of this document. During the evaluation process, available information will be reviewed and additional information may be requested as necessary.

3.1.3 Approval or Rejection

Once CSS & CAA review the application, approval or rejection letters will be issued by CSS to the generator for each application received. A copy of the documentation will be filed with each application to ensure consistency with the manifest documentation system. If a waste is approved, the generator will be sent an approval letter. The approval package will contain a "Terms and Conditions" document which will list the conditions under which the material is acceptable.

3.1.4 Waste Delivery

After approval, delivery of approved Supplemental Waste materials to the CAA facility must be scheduled in advance. The generator shall contact CAA to arrange a delivery time. The CAAI operating staff will include the Chief Engineer who will also act as the designated Supplemental Waste Coordinator (SWC) to ensure that the materials will be processed in accordance with all approval conditions. Upon arrival of a Supplemental Waste delivery at the CAA facility the scale house attendant will notify the SWC who will confirm that they are delivering approved Supplemental Waste materials. The

original copy of the truck manifest form and non hazardous certification must accompany the load to the CAA facility and be presented at the scale-house upon arrival.

3.1.5 Waste Processing

At the beginning of each shift during which Supplemental Wastes will be received, the SWC will review with all appropriate personnel the materials to be received, any special handling requirements and any unique characteristics. During this meeting, a thorough discussion of feed requirements will be conducted, with the SWC explaining in detail the mixture requirements. The SWC will observe the initial feeding of wastes and communicate to the operator if any adjustments should be made. Once the Supplemental Waste processing proceeds, should any issues arise; the operator will immediately contact the SWC.

Upon delivery to the scale house at CAA, the scale house attendant will notify the Control Room of the arrival and will direct the vehicle to the appropriate location where it will be met by the SWC or his designee. CAA staff will then compare the truck manifest to the approval and visually inspect the contents of the shipment to ensure that it matches the physical description in the approval. In addition all containers will be checked for proper labeling and the quantity of material in the load will be checked against the manifest. All inconsistencies must be resolved before processing. Any unidentified materials will be rejected and returned to the generator.

Accepted Supplemental Waste will then be processed and fed into the boilers by one of two methods. The first method involves placing the Supplemental Waste directly into the refuse holding pit and mixing the Supplemental Waste with MSW. Supplemental Waste that can be blended with MSW at a mix rate of 30 parts MSW to one part Supplemental Waste or less e.g. (20 or 10 parts MSW to one part Supplemental Waste) will be placed into the refuse holding pit. These materials are pushed directly into the refuse holding pit with the front end loader. The crane operator then picks up the co-mingled Supplemental Waste materials with the grapple crane. The grapple crane has a nominal capacity of 6 cu. yds. and lifts mixed waste with an average density of 700 lb/cu.yd., or about 2.2 tons per lift. The material is lifted and then moved to one area of the pit. As the crane is being moved, the material is slowly released from the crane spreading the Supplemental Waste material throughout the pit. The operator then picks up a grapple load of MSW and lightly covers the Supplemental Waste material in the same manner. The crane operator then picks up parts of the Supplemental Waste/MSW mixture, lifts the material about 20 feet above the surface of the waste in the pit, then moves the crane while slowly releasing the mixture. This further mixes the materials. The process is repeated until the desired mix ratio is achieved. The crane operator will be briefed by the SWC prior to accepting and mixing Supplemental Waste. At this meeting, the operator is given a sheet with the schedule of supplemental loads for the day. The sheet lists the approval numbers, schedule times, tonnage, material type and mix ratio for each load. This allows the operator to know how much is on each load and how it is to be mixed.

The second method involves transporting the Supplemental Waste material directly to the feed hopper, then feeding the material directly into the feed hopper at a rate specified during the review process. CAA staff has a tracking document that lists each approved material and its specific feed rate. This tracking document is also provided to the generators as it identifies the packaging requirements for each material. These packaging requirements correspond with the feed rates for each material. For example, if the feed rate for a particular material is 500 lbs / 15 minutes per boiler, the tracking document tells the generator that each container of this material may weigh up to but not exceed 500 lbs. If the actual container weight is 250 lbs each, the operator may feed two (2) containers every 15 minutes.

The determination of pit and hopper approval conditions is made upon the basis of calculating a mix ratio of MSW to Supplemental Waste that may be processed in conformance with all applicable regulatory standards, employee health and safety standards and without exceeding any emission limit. If the calculated mix ratio exceeds 30:1 the material must be hopper fed and the mix ratio is converted into a feed rate as pounds per 15 minutes per hopper. Materials that have a pit mix ratio of 30:1 or less may be mixed in the pit. The approval conditions for each waste stream include processing directions. Materials that have mix ratios up to 10:1 are considered 'normal mixing', greater than 10:1 and up to 20:1 are considered 'medium' indicating that the crane operator should pay special attention to the material, and mix ratios over 20:1 are considered 'high' requiring more care in mixing. In some cases materials that are considered difficult to mix require 'extensive' mixing. In addition the approval will indicate the reason that any material that requires more than normal mixing (potential to form acid gases, physical properties, etc).

The designation of normal, medium, high and extensive mixing to CAA allows the crane operator to apply the level of mixing needed to process the material without causing process upsets. The linkage of mix ratios with these designations is based upon Covanta's Waste to Energy experience developing this program at various facilities and is consistent across all mass burn facilities. Due to the variety of pit conditions and waste properties it is not feasible to have a formula for the crane operator to follow for mixing Supplemental Waste with MSW. It is the crane operator's job to thoroughly mix MSW prior to the feeding the combustor. His experience in mixing MSW to provide uniform feed to the combustor is utilized when blending Supplemental Waste. The crane operator is in constant contact with the Control Room Operator and receives feed back regarding any combustion upset; this allows him to maintain a well mixed blend of waste to the unit to maintain good combustion which results in minimizing emissions.

3.2 CSS Criteria for Acceptance

Decisions on whether to accept a specific Supplemental Waste will be based on the acceptance criteria. These evaluations are based on employee safety, environmental protection, facility operation, shipping and handling requirements and other appropriate criteria. Meeting all criteria does not guarantee a waste will be accepted. CAA reserves the right to reject any waste. CAA also reserves the right to add additional acceptance criteria. All accepted waste must be delivered directly to the CAA facility.

3.3 Reporting

Files are maintained of each approved Supplemental Waste application at CAA for review by VADEQ for at least five (5) years after the Supplemental Waste in that approved application ceases to ship into the facility, consistent with the lifetime of CAA's Title V permit.

3.4 Responsibility for Laboratory Results

The Waste Material Generator is responsible for obtaining laboratory data requested by CSS. CSS may request that the generator supply additional information or supply information from laboratories regarding quality control information. All laboratory data must be certified, by the laboratory, as to the accuracy and methods used.

3.5 Responsibility for Accuracy

The generator is responsible for supplying CSS with all the information needed to appropriately evaluate a waste. CSS reserves the right to request additional information. CSS reserves the right to not accept the waste material.

3.6 Amendment of the MRP

CAA recognizes that the characteristics of wastes, the analytical procedures used to characterize wastes, modification of the facility's permits and emission standards, the rules governing management of wastes may change in the future. CAA will provide amendments to this MRP as necessary to accommodate these changes. MRP modifications will only be made upon receiving VADEQ approval to do so.

Section 4 Environmental Review Criteria

4.1 Purpose

The purpose of the Environmental Review is to fully understand the properties of the waste to determine if it can be accepted and processed as Supplemental Waste in compliance with all applicable permit and regulatory criteria.

4.2 Chemical data

The MCF requires that the Waste Material Generator identify the chemical composition of the waste. This data is used to evaluate the waste for environmental acceptance. An addendum to the 'standard' forms (Virginia Destination Addendum Form---see Appendix III) will be used for waste destined for Virginia to specifically identify any constituents in the waste that are Hazardous Air Pollutants (HAPs) as defined in the Commonwealth of Virginia State Air Pollution Control Board's (SAPCB's) Regulations for the Control and Abatement of Air Pollution (Regulations). CSS will use this information to determine whether additional feed considerations are necessary to meet state HAPs regulations. The chemical composition of the waste may be determined by either the Waste Material Generator's detailed process knowledge or analytical testing. Process knowledge is typically available for wastes produced by industrial manufacturing facilities. At these facilities, the generator has control over process variables and experience with raw materials, intermediate products and final products. The Waste Material Generator must submit the basis for any materials where process knowledge is used as the determining factor for acceptability. Process knowledge may include:

- Formulation sheets or chemical formulas
- Material Safety Data Sheets
- Detailed process descriptions, flow sheets, etc.
- Public documents (Chemical Engineer's Handbook, etc.)

Analytical data is required for wastes that cannot be completely described by process knowledge. Analytical data may include:

- RCRA tests as defined in 40 CFR 261 Appendix I, II, and III
- Total metals, sulfur, or chlorine analysis
- Tests to determine 'on-spec' used oil commingled with solid waste per 40 CFR 279

4.3 RCRA Characterization

This review ensures that all materials delivered to CAA are not RCRA hazardous.

- Each generator shall provide a certificate that materials are non-hazardous and information that supports the certification.
- CSS shall determine that the generator has appropriate procedures to characterize waste as non-hazardous based on the data provided and discussions with appropriate representatives of the generator. CSS will review generator information to confirm that there are no inconsistencies with the non-hazardous characterization. This information can include, but not be limited to, MSDS', physical analysis, chemical analysis, raw material lists and process descriptions. Any inconsistencies must be resolved to confirm the non-hazardous determination.

4.4 Air Emissions

4.4.1 Potential Emissions Review

CSS shall review the Supplemental Waste application to consider all potential air emissions. CSS conservatively assumes that all materials of concern are converted into air emissions, i.e. chlorine, sulfur, cadmium, mercury and lead (except that elements that are chemically bound in a non-combustible material are not considered, for example an alloy bolt that contains cadmium in the alloy). Where a range of concentration is provided, 'worst case' concentrations of chlorine, sulfur, cadmium, mercury, and lead are utilized in the review process. The ultimate goal of the review process is to ensure that the burning of any supplemental waste does not create any other regulated air pollutant, in any way deteriorate the air quality in the region or contain any air-pollution causing substance that was otherwise not considered in the current operating permits.

4.4.2 Acid gases

Acid gas emissions are calculated assuming that all (100%) sulfur and chlorine content is converted to acid gas in the raw (non-scrubbed) flue gas. These conservative assumptions establish a maximum allowable Supplemental Waste concentration of 0.9% by weight for chlorine and 1.2% by weight for sulfur that can be pit fed. These amounts of acid gas constituents conservatively increase the raw flue gas concentrations by approximately 120 ppm_{dv} and 180 ppm_{dv} respectively and are well within the capability of the air pollution control equipment to maintain permit limits. These criteria are selected to maintain acid gas concentrations within the desired operational target range. Supplemental Waste with higher concentrations of sulfur or chlorine is acceptable for disposal by mixing in the refuse pit or may be processed by periodically feeding measured quantities directly to the feed hopper of the MWC unit. These calculation procedures produce feed conditions for Supplemental Waste that are equivalent to the above criteria.

4.4.3 Lead, Cadmium and Mercury

Supplemental Waste applications that contain lead or cadmium will be evaluated based upon the baghouse efficiency described below, baseline emissions calculated from the 80% upper confidence limit of annual stack test data, and a maximum calculated emission (baseline plus Supplemental Waste) not to exceed 67% of the permit limit. All

lead and cadmium (except lead or cadmium contained in a non-combustible metal alloy or similar material) are assumed to be volatilized.

The allowable concentration for lead is based upon maintaining emissions below the permit limit of 440 ug/dscm (micro grams per standard dry cubic meter) @ 7% O₂. The allowable concentration for cadmium is based upon maintaining emissions below the permit limit of 40 ug/dscm @ 7% O₂.

The permit emission limit for mercury is 80 ug/dscm @7% O₂. Supplemental Waste containing manufactured mercury compounds is not accepted. In some wastes the Waste generator has knowledge of 'artifact' mercury that is trace mercury in minerals or compounds that is the result of mercury found in nature. These materials are accepted provided that the mercury concentration is less than 1 ppmw. Note that 1 ppmw is the equivalent of approximately 20 micrograms per standard cubic meter in the raw flue gas. As typical mercury removal efficiency exceeds 95%, the impact on emissions is generally less than 1 microgram per standard cubic meter or less than 0.045 grams per ton of Supplemental Waste processed from 'artifact' mercury.

4.4.4. Hazardous Air Pollutants (HAPs)

Each waste stream will be reviewed using generator knowledge or analytical results and the concentration of any HAPs contained in the Supplemental Waste will be reviewed for potential ambient air impact. This review will also include an assessment of the ability of the wastes to create HAPs during combustion. For example a benzene containing waste, say a material with 100 ppmw benzene contamination, would be analyzed for benzene HAPs emissions; just as chlorophenols have the potential to generate dioxins.

- **Particulate HAPs** - Collection efficiency of particulate HAPS (inorganic materials such as metals) will be 0.99, based upon baghouse collection efficiency. Typical inlet mass balance concentrations are in excess of 1 grain/dscf corrected and outlet particulate loadings are less than 0.01 grain/dscf corrected.

All 'Supplemental Waste' fed to the combustion units which contains HAPs will be limited to maintain emissions below the levels required by 9 VAC 5-60-200 unless applicable permit limits have been established; in that case applicable permit limits shall apply.

- **Combustible HAPs** - Covanta Alexandria/Arlington utilizes a substantially similar combustion train and air pollution control system as the Covanta Fairfax (Lorton, VA) facility. Combustion efficiency of the Covanta Fairfax facility has been modeled using procedures developed at the University of Dayton Research Institute to determine the relative stability of HAPs and correlation of calculated destructive efficiency with stack test data from similar combustion processes. This study indicated a destructive efficiency for the most difficult to destroy HAPs (benzene) of

0.9999 should be achieved. This is consistent with the facility's measured combustion efficiency which is generally 0.9996 or greater. Corrected CO₂ emissions are about 12% and corrected CO emissions are less than 50 ppm_{dv}. This translates into a combustion efficiency of about 0.9996; at the permit limit of 100 ppm_{dv} the combustion efficiency is about 0.9992. A combustion efficiency of 0.999 (approximately the combustion efficiency at the permit limit of 100 ppm_{dv} CO) will be used to analyze the worst case stack emissions of any combustible HAP contained in the Supplemental Waste. No additional removal efficiency will be considered due to adsorption on particulate and capture in the baghouse.

- **Sample Calculation Procedure** - Consider a hypothetical HAP with a molecular weight of 50. 100 ppm_w is equivalent to 0.2lbs of HAP/ton; with 0.999 destruction efficiency this results in an emission rate of 0.0002 lbs/ton. Consider that if the Supplemental Waste were mixed 10:1 with MSW the concentration of HAPs in the flue gas would be 0.001 ppm_{dv}. Alternately, based upon ambient air quality modeling conducted for the permitting of the Virginia facilities, the one hour worst case chi/Q factor was 5.4 ug/m³ per gram/sec leaving the stack. Suppose we assume 10 tons are burned in one hour (far more than we ever intend to burn in one hour), the stack emission rate is 0.0003 grams/second and worst case ground level concentration is $.0003 * 5.4 = .002$ ug/m³. We propose that this is a negligible amount for any listed HAP that does not have a Threshold Limit Value (TLV).
- **Additional Considerations** - For Supplemental Waste containing HAPs in concentrations exceeding 100 ppm_w and which do not have an established TLV, an appropriate ambient air concentration will be established from existing databases and existing air modeling parameters applied to determine allowable stack concentrations. Supplemental Waste feed rates will be calculated from the allowable stack concentrations. The basis for determining the ambient air concentration and the acceptability of processing the waste material will be calculated as above.

In conformance with 9 VAC 5-60-200, the potential to emit for any HAP from the CAA facility shall not exceed 22.8 lbs/hr.

4.5 Operations Review

After the successful completion of the Safety (addressed by the Standard Operating Procedure for the Supplemental Waste Program) and Environmental review (summarized in Section 4 of this MRP above) by CSS, CAA operations staff reviews the complete approval package. This review will focus upon operational considerations but will also consider the safety and environmental reviews. The CAA staff may require additional information or justification prior to accepting the Supplemental Waste. The Facility Manager has the authority to reject any proposed Supplemental Waste.

Section 5 Scheduling and Receiving Waste Materials

The safety, environmental and operations review may specify special shipping and handling conditions. Those conditions controlled by the generator will be included in the approval letter. All generators will be required to provide a pre-shipment notice and receive CAA approval prior to shipment. Any waste that cannot be handled in a manner to meet all requirements for safety, environmental compliance, and operational needs will be rejected.

Once the Waste Material Generator (or their authorized representative) receives the approval letter, they are authorized to request approval to ship the waste material. This is accomplished by calling CSS and requesting a delivery date. Once it is confirmed that the wastes are acceptable as part of the approval letter authorization that has been granted, a Covanta Secure Services Pre-shipment Notification Form (see Appendix III) is then generated and sent to the generator which details what wastes are to be delivered and when (date and time). This notice must then be sent directly to CAA so that the delivery can be entered into their schedule. Should there be a need to change the delivery schedule; CAA will notify CSS who in turn will notify the generator. New documents will be generated for the rescheduled delivery.

The scheduling of each delivery by CAA shall consider the impact of all Supplemental Waste deliveries. Deliveries of materials that have elevated levels of chlorine, sulfur, lead, cadmium, or mercury indicated in the approval conditions will be staggered to maintain compliance at all times. Materials that have the potential to emit HAPs will be scheduled to maintain potential emissions below those determined by the Environmental Review. In addition, Supplemental Waste will be scheduled consistent with the day-to-day operating conditions at the facility. For example, during maintenance and outage periods, delivery schedules will be consistent with the availability and through put of the facility.

All materials shall be shipped on a non-hazardous manifest or bill of lading. Each vehicle delivering Supplemental Waste shall include a RCRA non-hazardous certification. Supplemental Waste deliveries are carefully scheduled so they can be processed in a safe and efficient manner.

Section 6 Monitoring, Reporting and Record Keeping

For the first delivery of a new waste material to CAA, the CAA facility staff will file an Initial Waste Stream Review Report. This report will be retained in the CAA file and a copy will be forwarded to CSS for the permanent corporate file. Any processing difficulties encountered are investigated and resolved prior to accepting additional loads of the waste material.

Any difficulties experienced with ongoing deliveries of the waste materials authorized for delivery under this approval number will be reported and managed under the existing CSS Discrepancy Reporting Procedure included within the Standard Operating Procedure for the Supplemental Waste Program.

A Certificate of Destruction (see Appendix III) is generated as required which details what was destroyed and on what date. These reports are kept on file at CAA. All active Approval Packages will be maintained at the CAA site and at CSS in Fairfield, NJ. In the event that this customer ceases to use Covanta's services, these packages will be kept for at least five (5) years after the last shipment of waste has been received.

Appendix I

Definitions/Regulations

Municipal Solid Waste (MSW) shall be defined as:

- a. **Acceptable municipal solid waste includes household waste, commercial/retail waste, institutional waste, and other waste with emission characteristics similar to the acceptable wastes as determined by the permittee and approved by the Regional Air Permit Manager of the DEQ's Northern Regional Office (NRO), or a combination thereof as defined in this condition.**
- b. **Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities.**
- c. **Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, non-manufacturing activities at industrial facilities, and other similar establishments or facilities. All commercial/retail waste shall be mixed with other approved fuels prior to charging to the combustor in order to prevent discreet loads from being charged to a boiler.**
- d. **Institutional waste includes material discarded by schools, non-medical waste discarded by hospitals, material discarded by non-manufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities.**
- e. **Municipal solid waste does not include hazardous waste, as defined by federal and state waste regulations.**
- f. **In addition, municipal solid waste shall not include industrial process or manufacturing waste, used oil, sewage sludge, wood pallets, construction, renovation, and demolition wastes, medical waste, motor vehicles (including motor vehicle parts or vehicle fluff).**
- g. **The permittee shall monitor the waste delivered to the facility to ensure that only MSW as defined herein is being processed by the facility.**
- h. **This definition of MSW may in the future be expanded to include additional waste types not identified in this condition.**
- i. **In the event Covanta Alexandria/Arlington (CAA) wishes to process waste types other than MSW, as described above, or expand the definition of MSW, the permittee shall submit a request, including the applicable portion(s) of a Form 7, to the Regional Air Permit Manager of the DEQ's NRO. Information on waste composition and emissions characterizations shall be included with the submittal. The request and supporting documentation will be reviewed and evaluated to determine appropriate regulatory**

applicability. The permit may be revised in accordance with the procedures established by the appropriate permitting regulations in the State of Virginia's Regulations for the Control and Abatement of Air Pollution. CAA shall receive DEQ approval prior to processing any waste types not identified herein.

(9 VAC 5-80-110, 9 VAC 5-80-1180, and Condition 6 of 03/16/10 mNSR Permit)

9VAC20-80-10. Definitions.

"Special wastes" mean solid wastes that are difficult to handle, require special precautions because of hazardous properties or the nature of the waste creates waste management problems in normal operations. (See Part VIII (9VAC20-80-630 et seq.) of this chapter.)

9VAC20-80-630. General.

A. The requirements and standards contained in this part apply to solid waste that requires special handling and precautions and are in addition to the general requirements contained in Parts V (9VAC20-80-240 et seq.) and VI (9VAC20-80-320 et seq.) of this chapter, as applicable.

1. Facilities may receive solid waste that requires special handling for processing or disposal only with specific approval of the director or by specific provisions within the facility permit. The operator should contact the department for advice about new or unusual wastes and proper handling techniques. If it is not clear that a particular waste is within the authorized wastes that a permitted facility may receive, it is required that the operator receive a letter of clarification from the department before receiving the waste.

2. Nothing in this part shall limit or affect the power of the director, by his order, to prohibit storage, treatment or disposal of any waste or require special handling requirements he determines are necessary to protect the public health or the environment.

3. The specific special wastes identified in this part are not all inclusive but intended to provide instructions for the wastes most frequently managed through solid waste management facilities. Other special wastes such as discarded chemicals and pesticides not regulated as hazardous wastes, oil spill cleanup, hazardous materials incident site cleanup, underground and aboveground storage site residues from cleanup, pesticide containers, hazardous wastes generated by conditionally exempt small quantity generators as defined by the hazardous waste regulations, compressed gas cylinders, and contaminated food products and fabrics requiring supervised disposal are examples of the type of special wastes for which approval by the director would be required before permitted solid waste management facilities could receive and dispose of these materials, unless the material is specifically included in the facility permit. Facilities with an approved special waste acceptance plan incorporated into the operations manual of the

facility permit are not required to obtain specific approval when the waste acceptance plan is followed.

B. The requirements and standards contained in this part also apply to specific materials that are used in a manner that constitutes disposal.

9VAC20-80-240. General.

A. Any person who constructs, or operates any solid waste disposal facility (e.g., sanitary landfill, construction/demolition/debris landfill, or an industrial waste landfill), not otherwise exempt under 9VAC20-80-60 D, shall comply with the requirements of this part. Further, all applications for permits pursuant to these standards shall demonstrate specific means proposed for compliance with requirements set forth in this part.

B. Solid waste disposal facilities shall be maintained and operated in accordance with the permit issued pursuant to this chapter, and in accordance with the approved design and intended use of the facility.

C. Hazardous wastes shall not be disposed or managed in solid waste disposal facilities subject to this chapter unless specifically authorized by the facility permit or the director.

D. Solid waste disposal facilities shall comply with the Financial Assurance Regulations for Solid Waste Disposal, Transfer, and Treatment Facilities (9VAC20-70) of the Virginia Waste Management Board.

E. Establishment, operation or maintenance of any solid waste disposal facility as an open dump is prohibited (see Part IV (9VAC20-80-170 et seq.) of this chapter).

F. A solid waste management facility regulated under Part VI (9VAC20-80-320 et seq.) of this chapter will become subject to the appropriate closure and post-closure care standards contained in this part if solid waste will remain after the closure of such a facility.

9VAC20-80-320. General.

A. Purpose, scope, and applicability.

1. Any person who designs, constructs, or operates any solid waste treatment or storage facility not otherwise exempt under 9VAC20-80-60 D shall comply with the requirements of this part.

2. Facilities shall be maintained and operated in accordance with the permit issued pursuant to this chapter, and in accordance with the approved design and intended use of the facility.

3. Hazardous wastes shall not be disposed or managed in solid waste management facilities subject to this chapter unless specified in the permit or by specific approval of the executive director.

B. Siting. Siting standards for each type of solid waste management facility in this part shall be governed by the siting standards as established for each separate facility.

C. Closure. Solid waste management facilities regulated under this part which, upon closure, will dispose of solid waste residues on-site, are subject to the ground water monitoring requirements in 9VAC20-80-250 D, closure and post-closure care requirements in 9VAC20-80-250 E and F, and permitting requirements of Part VII (9VAC20-80-480 et seq.) of this chapter. All other facilities shall close in accordance with the closure plan prepared in accordance with the requirements described in this part and 9VAC20-80-530 or 9VAC20-80-540, as applicable. Owners and operators of facilities that treat solid wastes are required to demonstrate financial assurance for closure in accordance with 9VAC20-70-10 et seq.

D. Solid waste left in place. Solid waste management facilities regulated under this part which place solid wastes or residues on site for disposal or leave such wastes in place after closure, are subject to the provisions of Part V (9VAC20-80-240 et seq.) of this chapter.

9VAC20-80-700. Soil contaminated with petroleum products.

A. Applicability.

1. The specific requirements contained in this section apply to requests by the owner or operator of a solid waste disposal facility for approval of disposal of soil contaminated solely with petroleum and petroleum products, including but not limited to diesel fuels, kerosene, gasoline, hydraulic fluids, jet engine fuel, and motor oil.
2. Any contaminated soil from a state other than Virginia that is classified as a hazardous waste in the state of origin shall be managed as a hazardous waste. Such wastes are not acceptable for disposal in a solid waste management facility in the Commonwealth.

B. Required information.

1. A statement from the generator certifying that the soil is non-hazardous waste as defined by the Virginia Hazardous Waste Management Regulations or federal regulations under Subtitle C, Resource Conservation and Recovery Act.
2. The amount of petroleum contaminated soil to be disposed.
3. A description of the sampling protocol and a copy of all laboratory analyses.
4. If generated in a state other than Virginia, certification from the generator that the waste is not considered a hazardous waste in its state of generation.

C. Testing requirements.

1. Analytical methods. Following methods shall be used in the analysis of the contaminated soil:
 - a. The presence of any free liquid shall be determined by EPA SW-846 method 9095, Paint Filter Liquids Test.
 - b. The total petroleum hydrocarbon (TPH) concentration shall be determined by using EPA SW-846 method 5035/8015B.

c. The concentration of benzene, toluene, ethyl benzene, and xylene (BTEX) shall be determined by using EPA SW-846 method 8021B.

d. The soil shall be tested for total organic halogens (TOX) in accordance with test methods contained in EPA SW-846.

e. The soil contaminated by leakage from an underground tank shall be tested for EP toxicity using EPA SW-846 method 1310. If the tank contained motor oil, the testing may be limited to heavy metals; tanks that contained all other petroleum products shall be tested for lead and any other compound covered by that test known to be present.

f. The soil contaminated as a result of anything other than leakage from an underground storage tank shall be tested by the Toxicity Characteristic Leaching Procedure (TCLP). If the soil was contaminated by virgin motor oil, the testing may be limited to heavy metals. Soil contaminated by any petroleum product other than virgin motor oil shall be tested for lead and any other compound covered by that test known to be present. If other TCLP constituents are not tested for, the generator shall be able to certify that the soil is not a hazardous waste, and certify that it did not contain those constituents not tested.

2. Sampling. A minimum of one composite sample shall be analyzed for each required test for every 100 cubic yards of soil to be disposed. In the case of soil reclaimed by thermal treatment, a minimum of one sample shall be analyzed for every production day composited hourly. For very large amounts of soil the sampling rates may be adjusted with the approval of the director.

3. a. In the case of soil contaminated with gasoline, the testing requirements for TCLP for lead, TOX, or the paint filter liquids test may be waived, if the department staff determines that the material was contaminated with unleaded gasoline, does not contain any halogenated hydrocarbons, or free liquids.

b. Waiver for BTEX testing requirements may be granted, if the generator can provide sufficient documentation that the material does not contain any benzene, toluene, ethyl benzene, or xylenes, and the amount of material to be disposed of is less than 20 cubic yards.

D. Disposal criteria.

1. Soils failing the TCLP test shall be managed in accordance with the Virginia Hazardous Waste Management Regulations.

2. Soils exhibiting greater than 100 milligram per kilogram (mg/kg) of TOX may not be disposed of until separate approval from the department is granted. This request shall document the cause for the high TOX level.

3. If the concentration of total BTEX is greater than 10 mg/kg or TPH is greater than 500 mg/kg, the soil cannot be disposed of in any sanitary or industrial landfill unless the facility permit expressly allows such disposal.

4. If the concentration of TPH is less than 500 mg/kg and total BTEX is less than 10 mg/kg, the disposal of the contaminated soil may be approved for permitted sanitary or industrial landfills equipped with liners and leachate collection systems.

5. Soil containing less than 50 mg/kg TPH and total BTEX less than 10 mg/kg may be used as clean fill. This soil, however, may not be disposed of closer than 100 feet of any regularly flowing surface water body or river, 500 feet of any well, spring or other ground water source of drinking water, and 200 feet from any residence, school, hospital, nursing home or recreational park area. In addition, if the soil is not to be disposed of on the generator's property, the generator shall notify the property owner that the soil is contaminated and with what it is contaminated.

E. Exemptions.

1. Contaminated soil resulting from a storage tank release or from a spill may be considered for an exemption from the limits and/or testing specified in subsection D of this section where the total volume of contaminated soil from a cleanup site is less than 20 cubic yards, and the contaminated soil is not a hazardous waste.

2. The director may approve the disposal of contaminated soil resulting from an emergency cleanup of a spill of petroleum products, provided that the waste is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations or by federal regulations under Subtitle C of RCRA.

3. Soil contaminated with petroleum products resulting from ordinary household functions may be disposed with the general household waste.

9VAC20-80-10. Definitions.

"Commercial chemical product" means a chemical substance which is manufactured or formulated for commercial, agricultural or manufacturing use. This term includes a manufacturing chemical intermediate, off-specification chemical product, which, if it met specification, would have been a chemical product or intermediate. It includes any residues remaining in the container or the inner liner removed from the container that has been used to hold any of the above which have not been removed using the practices commonly employed to remove materials from that type of container and has more than one inch of residue remaining.

"Industrial waste" means any solid waste generated by manufacturing or industrial process that is not a regulated hazardous waste. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: Electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

"Liquid waste" means any waste material that is determined to contain "free liquids" as defined by this chapter. "Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure as determined by the Paint Filter Liquids Test, Method 9095, U.S. Environmental Protection Agency, Publication SW-846.

§ 261.7 Residues of hazardous waste in empty containers.

(a)(1) Any hazardous waste remaining in either (i) an empty container or (ii) an inner liner removed from an empty container, as defined in paragraph (b) of this section, is not subject to regulation under parts 261 through 265, or part 268, 270 or 124 of this chapter or to the notification requirements of section 3010 of RCRA.

(2) Any hazardous waste in either (i) a container that is not empty or (ii) an inner liner removed from a container that is not empty, as defined in paragraph (b) of this section, is subject to regulation under parts 261 through 265, and parts 268, 270 and 124 of this chapter and to the notification requirements of section 3010 of RCRA.

(b)(1) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste listed in §§261.31, 261.32, or 261.33(e) of this chapter is empty if:

(i) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, *e.g.*, pouring, pumping, and aspirating, *and*

(ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, *or*

(iii)(A) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 110 gallons in size, or

(B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size.

(2) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

(3) A container or an inner liner removed from a container that has held an acute hazardous waste listed in §§261.31, 261.32, or 261.33(e) is empty if:

(i) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

(ii) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(iii) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

§ 261.3 Definition of hazardous waste.

(a) A solid waste, as defined in §261.2, is a hazardous waste if:

(1) It is not excluded from regulation as a hazardous waste under §261.4(b); and

(2) It meets any of the following criteria:

(i) It exhibits any of the characteristics of hazardous waste identified in subpart C of this part. However, any mixture of a waste from the extraction, beneficiation, and processing of ores and minerals excluded under §261.4(b)(7) and any other solid waste exhibiting a characteristic of hazardous waste under subpart C is a hazardous waste only if it exhibits a characteristic that would not have been exhibited by the excluded waste alone if such mixture had not occurred, or if it continues to exhibit any of the characteristics exhibited by the non-excluded wastes prior to mixture. Further, for the purposes of applying the Toxicity Characteristic to such mixtures, the mixture is also a hazardous waste if it exceeds the maximum concentration for any contaminant listed in table I to §261.24 that would not have been exceeded by the excluded waste alone if the mixture had not occurred or if it continues to exceed the maximum concentration for any contaminant exceeded by the nonexempt waste prior to mixture.

(ii) It is listed in subpart D of this part and has not been excluded from the lists in subpart D of this part under §§260.20 and 260.22 of this chapter.

(iii) [Reserved]

(iv) It is a mixture of solid waste and one or more hazardous wastes listed in subpart D of this part and has not been excluded from paragraph (a)(2) of this section under §§260.20 and 260.22, paragraph (g) of this section, or paragraph (h) of this section; however, the following mixtures of solid wastes and hazardous wastes listed in subpart D of this part are not hazardous wastes (except by application of paragraph (a)(2)(i) or (ii) of this section) if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewater at facilities which have eliminated the discharge of wastewater) and;

(A) One or more of the following solvents listed in §261.31—carbon tetrachloride, tetrachloroethylene, trichloroethylene—*Provided*, That the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 1 part per million; or

(B) One or more of the following spent solvents listed in §261.31—methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent

chlorofluorocarbon solvents—provided that the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 25 parts per million; or

(C) One of the following wastes listed in §261.32, provided that the wastes are discharged to the refinery oil recovery sewer before primary oil/water/solids separation—heat exchanger bundle cleaning sludge from the petroleum refining industry (EPA Hazardous Waste No. K050), crude oil storage tank sediment from petroleum refining operations (EPA Hazardous Waste No. K169), clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations (EPA Hazardous Waste No. K170), spent hydrotreating catalyst (EPA Hazardous Waste No. K171), and spent hydrorefining catalyst (EPA Hazardous Waste No. K172); or

(D) A discarded commercial chemical product, or chemical intermediate listed in §261.33, arising from *de minimis* losses of these materials from manufacturing operations in which these materials are used as raw materials or are produced in the manufacturing process. For purposes of this paragraph (a)(2)(iv)(D), “*de minimis*” losses include those from normal material handling operations (e.g., spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing; or

(E) Wastewater resulting from laboratory operations containing toxic (T) wastes listed in subpart D of this part, Provided, That the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pre-treatment system or provided the wastes, combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pre-treatment facility. Toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation; or

(F) One or more of the following wastes listed in §261.32—wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157)—Provided that the maximum weekly usage of formaldehyde, methyl chloride, methylene chloride, and triethylamine (including all amounts that can not be demonstrated to be reacted in the process, destroyed through treatment, or is recovered, i.e., what is discharged or volatilized) divided by the average weekly flow of process wastewater prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 parts per million by weight; or

(G) Wastewaters derived from the treatment of one or more of the following wastes listed in §261.32—organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156).—Provided, that the maximum concentration of formaldehyde, methyl chloride, methylene chloride, and triethylamine prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 milligrams per liter.

(v) *Rebuttable presumption for used oil.* Used oil containing more than 1000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in subpart D of part 261 of this chapter. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, to show that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix VIII of part 261 of this chapter).

(b) A solid waste which is not excluded from regulation under paragraph (a)(1) of this section becomes a hazardous waste when any of the following events occur:

(1) In the case of a waste listed in subpart D of this part, when the waste first meets the listing description set forth in subpart D of this part.

(2) In the case of a mixture of solid waste and one or more listed hazardous wastes, when a hazardous waste listed in subpart D is first added to the solid waste.

(3) In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in subpart C of this part.

(c) Unless and until it meets the criteria of paragraph (d) of this section:

(1) A hazardous waste will remain a hazardous waste.

(2)(i) Except as otherwise provided in paragraph (c)(2)(ii), (g) or (h) of this section, any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash emission control dust, or leachate (but not including precipitation run-off) is a hazardous waste. (However, materials that are reclaimed from solid wastes and that are used beneficially are not solid wastes and hence are not hazardous wastes under this provision unless the reclaimed material is burned for energy recovery or used in a manner constituting disposal.)

(ii) The following solid wastes are not hazardous even though they are generated from the treatment, storage, or disposal of a hazardous waste, unless they exhibit one or more of the characteristics of hazardous waste:

(A) Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (SIC Codes 331 and 332).

(B) Waste from burning any of the materials exempted from regulation by §261.6(a)(3)(iii) and (iv).

(C)(1) Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062 or F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in paragraphs (6), (7), and (13) of the definition for "Industrial furnace" in 40 CFR 260.10), that are disposed in subtitle D units, provided that these residues meet the generic exclusion levels identified in the tables in this paragraph for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes. Persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements.

| Constituent | Maximum for any single composite sample_TCLP (mg/L) |
|---|---|
| ----- | |
| Generic exclusion levels for K061 and K062 nonwastewater HTMR residues | |
| ----- | |
| Antimony..... | 0.10 |
| Arsenic..... | 0.50 |
| Barium..... | 7.6 |
| Beryllium..... | 0.010 |
| Cadmium..... | 0.050 |
| Chromium (total)..... | 0.33 |
| Lead..... | 0.15 |
| Mercury..... | 0.009 |
| Nickel..... | 1.0 |
| Selenium..... | 0.16 |
| Silver..... | 0.30 |
| Thallium..... | 0.020 |
| Zinc..... | 70.0 |
| ----- | |
| Generic exclusion levels for F006 nonwastewater HTMR residues | |
| ----- | |
| Antimony..... | 0.10 |
| Arsenic..... | 0.50 |

| | |
|------------------------------|-------|
| Barium..... | 7.6 |
| Beryllium..... | 0.010 |
| Cadmium..... | 0.050 |
| Chromium (total)..... | 0.33 |
| Cyanide (total) (mg/kg)..... | 1.8 |
| Lead..... | 0.15 |
| Mercury..... | 0.009 |
| Nickel..... | 1.0 |
| Selenium..... | 0.16 |
| Silver..... | 0.30 |
| Thallium..... | 0.020 |
| Zinc..... | 70.0 |

(2) A one-time notification and certification must be placed in the facility's files and sent to the EPA region or authorized state for K061, K062 or F006 HTMR residues that meet the generic exclusion levels for all constituents and do not exhibit any characteristics that are sent to subtitle D units. The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the subtitle D unit receiving the waste changes. However, the generator or treater need only notify the EPA region or an authorized state on an annual basis if such changes occur. Such notification and certification should be sent to the EPA region or authorized state by the end of the calendar year, but no later than December 31. The notification must include the following information: The name and address of the subtitle D unit receiving the waste shipments; the EPA Hazardous Waste Number(s) and treatability group(s) at the initial point of generation; and, the treatment standards applicable to the waste at the initial point of generation. The certification must be signed by an authorized representative and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

(D) Biological treatment sludge from the treatment of one of the following wastes listed in §261.32—organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156), and wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157).

(E) Catalyst inert support media separated from one of the following wastes listed in §261.32—Spent hydrotreating catalyst (EPA Hazardous Waste No. K171), and Spent hydrorefining catalyst (EPA Hazardous Waste No. K172).

(d) Any solid waste described in paragraph (c) of this section is not a hazardous waste if it

meets the following criteria:

(1) In the case of any solid waste, it does not exhibit any of the characteristics of hazardous waste identified in subpart C of this part. (However, wastes that exhibit a characteristic at the point of generation may still be subject to the requirements of part 268, even if they no longer exhibit a characteristic at the point of land disposal.)

(2) In the case of a waste which is a listed waste under subpart D of this part, contains a waste listed under subpart D of this part or is derived from a waste listed in subpart D of this part, it also has been excluded from paragraph (c) of this section under §§260.20 and 260.22 of this chapter.

(e) [Reserved]

(f) Notwithstanding paragraphs (a) through (d) of this section and provided the debris as defined in part 268 of this chapter does not exhibit a characteristic identified at subpart C of this part, the following materials are not subject to regulation under 40 CFR parts 260, 261 to 266, 268, or 270:

(1) Hazardous debris as defined in part 268 of this chapter that has been treated using one of the required extraction or destruction technologies specified in Table 1 of §268.45 of this chapter; persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements; or

(2) Debris as defined in part 268 of this chapter that the Regional Administrator, considering the extent of contamination, has determined is no longer contaminated with hazardous waste.

(g)(1) A hazardous waste that is listed in subpart D of this part solely because it exhibits one or more characteristics of ignitability as defined under §261.21, corrosivity as defined under §261.22, or reactivity as defined under §261.23 is not a hazardous waste, if the waste no longer exhibits any characteristic of hazardous waste identified in subpart C of this part.

(2) The exclusion described in paragraph (g)(1) of this section also pertains to:

(i) Any mixture of a solid waste and a hazardous waste listed in subpart D of this part solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (a)(2)(iv) of this section; and

(ii) Any solid waste generated from treating, storing, or disposing of a hazardous waste listed in subpart D of this part solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (c)(2)(i) of this section.

(3) Wastes excluded under this section are subject to part 268 of this chapter (as

applicable), even if they no longer exhibit a characteristic at the point of land disposal.

(4) Any mixture of a solid waste excluded from regulation under §261.4(b)(7) and a hazardous waste listed in subpart D of this part solely because it exhibits one or more of the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (a)(2)(iv) of this section is not a hazardous waste, if the mixture no longer exhibits any characteristic of hazardous waste identified in subpart C of this part for which the hazardous waste listed in subpart D of this part was listed.

(h)(1) Hazardous waste containing radioactive waste is no longer a hazardous waste when it meets the eligibility criteria and conditions of 40 CFR part 266, Subpart N ("eligible radioactive mixed waste").

(2) The exemption described in paragraph (h)(1) of this section also pertains to:

(i) Any mixture of a solid waste and an eligible radioactive mixed waste; and

(ii) Any solid waste generated from treating, storing, or disposing of an eligible radioactive mixed waste.

(3) Waste exempted under this section must meet the eligibility criteria and specified conditions in 40 CFR 266.225 and 40 CFR 266.230 (for storage and treatment) and in 40 CFR 266.310 and 40 CFR 266.315 (for transportation and disposal). Waste that fails to satisfy these eligibility criteria and conditions is regulated as hazardous waste.

§ 261.5 Special requirements for hazardous waste generated by conditionally exempt small quantity generators.

(a) A generator is a conditionally exempt small quantity generator in a calendar month if he generates no more than 100 kilograms of hazardous waste in that month.

(b) Except for those wastes identified in paragraphs (e), (f), (g), and (j) of this section, a conditionally exempt small quantity generator's hazardous wastes are not subject to regulation under parts 262 through 266, 268, and parts 270 and 124 of this chapter, and the notification requirements of section 3010 of RCRA, provided the generator complies with the requirements of paragraphs (f), (g), and (j) of this section.

(c) When making the quantity determinations of this part and 40 CFR part 262, the generator must include all hazardous waste that it generates, except hazardous waste that:

(1) Is exempt from regulation under 40 CFR 261.4(c) through (f), 261.6(a)(3), 261.7(a)(1), or 261.8; or

(2) Is managed immediately upon generation only in on-site elementary neutralization units, wastewater treatment units, or totally enclosed treatment facilities as defined in 40 CFR 260.10; or

(3) Is recycled, without prior storage or accumulation, only in an on-site process subject to regulation under 40 CFR 261.6(c)(2); or

(4) Is used oil managed under the requirements of 40 CFR 261.6(a)(4) and 40 CFR part 279; or

(5) Is spent lead-acid batteries managed under the requirements of 40 CFR part 266, subpart G; or

(6) Is universal waste managed under 40 CFR 261.9 and 40 CFR part 273.

(d) In determining the quantity of hazardous waste generated, a generator need not include:

(1) Hazardous waste when it is removed from on-site storage; or

(2) Hazardous waste produced by on-site treatment (including reclamation) of his hazardous waste, so long as the hazardous waste that is treated was counted once; or

(3) Spent materials that are generated, reclaimed, and subsequently reused on-site, so long as such spent materials have been counted once.

(e) If a generator generates acute hazardous waste in a calendar month in quantities greater than set forth below, all quantities of that acute hazardous waste are subject to full regulation under parts 262 through 266, 268, and parts 270 and 124 of this chapter, and the notification requirements of section 3010 of RCRA:

(1) A total of one kilogram of acute hazardous wastes listed in §§261.31, 261.32, or 261.33(e).

(2) A total of 100 kilograms of any residue or contaminated soil, waste, or other debris resulting from the clean-up of a spill, into or on any land or water, of any acute hazardous wastes listed in §§261.31, 261.32, or 261.33(e).

[Comment: "Full regulation" means those regulations applicable to generators of greater than 1,000 kg of non-acutely hazardous waste in a calendar month.]

(f) In order for acute hazardous wastes generated by a generator of acute hazardous wastes in quantities equal to or less than those set forth in paragraph (e)(1) or (2) of this section to be excluded from full regulation under this section, the generator must comply with the following requirements:

(1) Section 262.11 of this chapter;

(2) The generator may accumulate acute hazardous waste on-site. If he accumulates at any time acute hazardous wastes in quantities greater than those set forth in paragraph (e)(1) or (e)(2) of this section, all of those accumulated wastes are subject to regulation under parts 262 through

266, 268, and parts 270 and 124 of this chapter, and the applicable notification requirements of section 3010 of RCRA. The time period of §262.34(a) of this chapter, for accumulation of wastes on-site, begins when the accumulated wastes exceed the applicable exclusion limit;

(3) A conditionally exempt small quantity generator may either treat or dispose of his acute hazardous waste in an on-site facility or ensure delivery to an off-site treatment, storage, or disposal facility, either of which, if located in the U.S., is:

(i) Permitted under part 270 of this chapter;

(ii) In interim status under parts 270 and 265 of this chapter;

(iii) Authorized to manage hazardous waste by a State with a hazardous waste management program approved under part 271 of this chapter;

(iv) Permitted, licensed, or registered by a State to manage municipal solid waste and, if managed in a municipal solid waste landfill is subject to Part 258 of this chapter;

(v) Permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste and, if managed in a non-municipal non-hazardous waste disposal unit after January 1, 1998, is subject to the requirements in §§257.5 through 257.30 of this chapter; or

(vi) A facility which:

(A) Beneficially uses or reuses, or legitimately recycles or reclaims its waste; or

(B) Treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation; or

(vii) For universal waste managed under part 273 of this chapter, a universal waste handler or destination facility subject to the requirements of part 273 of this chapter.

(g) In order for hazardous waste generated by a conditionally exempt small quantity generator in quantities of less than 100 kilograms of hazardous waste during a calendar month to be excluded from full regulation under this section, the generator must comply with the following requirements:

(1) Section 262.11 of this chapter;

(2) The conditionally exempt small quantity generator may accumulate hazardous waste on-site. If he accumulates at any time more than a total of 1000 kilograms of his hazardous wastes, all of those accumulated wastes are subject to regulation under the special provisions of part 262 applicable to generators of between 100 kg and 1000 kg of hazardous waste in a calendar month as well as the requirements of parts 263 through 266, 268, and parts 270 and 124 of this chapter, and the applicable notification requirements of section 3010 of RCRA. The time period of §262.34(d) for accumulation of wastes on-site begins for a conditionally exempt small quantity generator when the accumulated wastes exceed 1000 kilograms;

(3) A conditionally exempt small quantity generator may either treat or dispose of his hazardous waste in an on-site facility or ensure delivery to an off-site treatment, storage or disposal facility, either of which, if located in the U.S., is:

(i) Permitted under part 270 of this chapter;

(ii) In interim status under parts 270 and 265 of this chapter;

(iii) Authorized to manage hazardous waste by a State with a hazardous waste management program approved under part 271 of this chapter;

(iv) Permitted, licensed, or registered by a State to manage municipal solid waste and, if managed in a municipal solid waste landfill is subject to Part 258 of this chapter;

(v) Permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste and, if managed in a non-municipal non-hazardous waste disposal unit after January 1, 1998, is subject to the requirements in §§257.5 through 257.30 of this chapter; or

(vi) A facility which:

(A) Beneficially uses or reuses, or legitimately recycles or reclaims its waste; or

(B) Treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation; or

(vii) For universal waste managed under part 273 of this chapter, a universal waste handler or destination facility subject to the requirements of part 273 of this chapter.

(h) Hazardous waste subject to the reduced requirements of this section may be mixed with non-hazardous waste and remain subject to these reduced requirements even though the resultant mixture exceeds the quantity limitations identified in this section, unless the mixture meets any of the characteristics of hazardous waste identified in subpart C.

(i) If any person mixes a solid waste with a hazardous waste that exceeds a quantity exclusion level of this section, the mixture is subject to full regulation.

(j) If a conditionally exempt small quantity generator's wastes are mixed with used oil, the mixture is subject to part 279 of this chapter. Any material produced from such a mixture by processing, blending, or other treatment is also so regulated.

9VAC20-80-650. Wastes containing polychlorinated biphenyls (PCBs).

A. Definitions. The definitions provided in this subsection are derived from definitions in 40 CFR 761.3 and are provided here for the convenience of the regulated community. The definitions here have been altered from those appearing in the federal regulation in order to simplify the definitions to indicate the specific types of items that can or cannot be considered for disposal in a sanitary landfill. These definitions are not identical to the federal definitions. All terms that are used in this section and that are not defined in this subsection shall have the same meaning as in Part I (9VAC20-80-10 et seq.) of this chapter or 40 CFR 761.3 as applicable.

Nothing in this section shall be deemed to allow management other than as required by federal law and regulation.

"PCB bulk product waste" means:

1. Nonliquid bulk wastes or debris from the demolition of buildings and other man-made structures manufactured, coated, or serviced with PCBs. PCB bulk product waste does not include debris from the demolition of buildings or other man-made structures that is contaminated by spills from regulated PCBs which have not been disposed of, decontaminated, or otherwise cleaned in accordance with 40 CFR Part 761 Subpart D.
2. PCB containing wastes from the shredding of automobiles, household appliances, or industrial appliances where PCB small capacitors have been removed (shredder fluff).
3. Plastics (such as plastic insulation from wire or cable; radio, television and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes waxes or similar coatings or sealants; Galbestos.

"PCB cleanup waste" means nonliquid cleaning materials and personal protective equipment at any concentration including nonporous surfaces and other nonliquid materials such as rags, gloves, booties, other disposable personal protective equipment, and similar materials.

"PCB-contaminated electrical equipment" means any electrical equipment including, but not limited to, transformers (including those used in railway locomotives and self-propelled cars), capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, and cable, that contains PCBs at concentrations of ≥ 50 ppm and < 500 ppm in the contaminating fluid. In the absence of liquids, electrical equipment is PCB-Contaminated if it has PCBs at > 10 ig/100 cm² and < 100 ig/100 cm² as measured by a standard wipe test (as defined in 40 CFR 761.123) of a non-porous surface.

"PCB remediation waste" means soil, rags, and other debris generated as a result of any PCB spill cleanup, including, but not limited to:

1. Environmental media containing PCBs, such as soil and gravel; dredged materials, such as sediments, settled sediment fines, and aqueous decantate from sediment.
2. Sewage sludge containing < 50 ppm PCBs; PCB sewage sludge; commercial or industrial sludge contaminated as the result of a spill of PCBs including sludges located in or removed from any pollution control device; aqueous decantate from an industrial sludge.
3. Buildings and other man-made structures, such as concrete or wood floors or walls contaminated from a leaking PCB or PCB-Contaminated transformer, porous surfaces and nonporous surfaces.

B. Solid wastes containing PCB concentrations between 1.0 ppm and 50 ppm are restricted to disposal in sanitary landfills or industrial waste landfills with leachate collection, liners, and

appropriate ground water monitoring as required in Part V (9VAC20-80-240 et seq.) of this chapter, except as allowed in subsection C of this section.

C. Other PCB wastes.

1. PCB bulk product wastes with concentrations above 50 ppm may be approved for disposal by the director on a case-by-case basis. Submissions prepared for the director's decision will include a description of the PCB waste indicating the material proposed for disposal and how the federal regulations under 40 CFR 761.62 apply to the material. Consistent with the procedures in 40 CFR Part 761, PCB bulk product wastes that are shredder fluff or plastics as defined above need not be tested for PCBs prior to disposal. However, other PCB bulk product waste that has been sampled in accordance with the protocols set out in 40 CFR Part 761 Subpart R and may be considered for disposal if the waste leaches PCBs at less than 10 %v(508)%E2%v/L measured using a procedure used to simulate leachate generation. Requests for a director's determination must come from a permitted landfill. Alternatively, a landfill may modify its permit to incorporate a special waste acceptance plan which addresses PCB wastes. Facilities requesting to receive PCB bulk product waste must also meet the following provisions:

a. The unit to receive the waste must have a liner system meeting the requirements of 9VAC20-80-250 B 9 or an alternate liner approved under the provisions of 9VAC20-80-780.

b. The unit to receive the waste must have a leachate collection system consistent with 9VAC20-80-290.

c. Ground water monitoring may not have detected Table 5.1 constituents above the maximum contaminant levels (MCLs) promulgated under §141.2 of the Safe Drinking Water Act (40 CFR Part 141 Subpart B) during the active life of the facility.

2. Consistent with 40 CFR Part 761, PCB articles such as PCB-contaminated electrical equipment, PCB hydraulic machines, or pipe that have previously contained PCB, which have been drained, may be disposed of in a sanitary landfill with leachate collection, liners, and appropriate ground water monitoring as required in Part V of this chapter. PCB testing, draining and other preparation for disposal of the equipment, if required, will be consistent with 40 CFR Part 761.

D. Consistent with 40 CFR Part 761, PCB remediation waste with PCB concentrations =50 ppm may not be disposed of in a sanitary landfill. PCB remediation waste includes but is not limited to items such as soil, sediments, dredged materials, muds, and sludge. PCB cleanup waste as defined above may be disposed of in a sanitary landfill with liners and a leachate collection system.

9VAC20-120-10. Definitions.

"Regulated medical waste" means solid wastes defined to be regulated medical wastes in Part III (9VAC20-120-80 et seq.) of this chapter.

9VAC20-120-140. Characteristics of regulated medical waste.

A solid waste is a regulated medical waste if it meets either of the two criteria of this section:

1. Any solid waste, as defined in this chapter is a regulated medical waste if it is suspected by the health care professional in charge of being capable of producing an infectious disease in humans. A solid waste shall be considered to be capable of producing an infectious disease if it has been or is likely to have been contaminated by an organism likely to be pathogenic to healthy humans, such organism is not routinely and freely available in the community, and if such organism has a significant probability of being present in sufficient quantities and with sufficient virulence to transmit disease. If the exact cause of a patient's illness is unknown, but the health care professional in charge suspects a contagious disease is the cause, the likelihood of pathogen transmission shall be assessed based on the pathogen suspected of being the cause of the illness.

2. Any solid waste that is not excluded from regulation is a regulated medical waste if it is listed in 9VAC20-120-150.

9VAC20-120-150. Lists of controlled regulated medical wastes.

In addition to wastes described by the characteristics set forth in 9VAC20-120-140, each solid waste or solid waste stream on the following lists is subject to this chapter, unless exempted in 9VAC20-120-120 or excluded in 9VAC20-120-130.

1. Cultures and stock of microorganisms and biologicals. Discarded cultures, stocks, specimens, vaccines and associated items likely to have been contaminated by them are regulated medical wastes if they are likely to contain organisms likely to be pathogenic to healthy humans. Discarded etiologic agents are regulated medical waste. Wastes from the production of biologicals and antibiotics likely to have been contaminated by organisms likely to be pathogenic to healthy humans are regulated medical wastes.

2. Human blood and human body fluids. Wastes consisting of human blood or human body fluids or items contaminated with human blood or human body fluids.

3. Tissues and other anatomical wastes. All human anatomical wastes and all wastes that are human tissues, organs, or body parts are regulated medical waste.

4. Sharps. Sharps likely to be contaminated with organisms that are pathogenic to healthy humans, and all needles, syringes with attached needles, suture needles, and scalpels are regulated medical wastes. This includes sharps generated through veterinary practice.

5. Animal carcasses, body parts, bedding and related wastes. When animals are intentionally infected with organisms likely to be pathogenic to healthy humans for the purposes of research, in vivo testing, production of biological materials or any other reason; the animal carcasses, body parts, bedding material and all other wastes likely to have been contaminated are regulated medical wastes when discarded, disposed of or placed in accumulated storage.

6. Any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill of any regulated medical waste.

7. Any solid waste contaminated by or mixed with regulated medical waste.

Appendix II Permits

Air

PSD permit
mNSR permit
Title V Operating Permit

Exp. Date: None
Exp Date: None
Exp. Date: 02/28/07 (Under Permit Shield)

Water

SIU Permit
VPDES Permit

Exp. Date: 01/31/2012
Exp. Date: 06/30/2014

Solid Waste

Solid Waste Permit By Rule

Exp. Date: None

APPENDIX III

FORMS

- 1. Material Characterization Form (MCF)**
- 2. Material Characterization Form (Form 1G-General Information)**
- 3. Addendum to Form 1G**
- 4. Virginia Destination Addendum Form for Reporting the Presence of Air Pollutants (HAP's)**
- 5. Pre-shipment Notification/Certificate of Destruction**

Attachment C

Minor NSR Permit dated September 27, 2010



NRO-288-10

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

13901 Crown Court, Woodbridge, Virginia 22193

(703) 583-3800 Fax (703) 583-3821

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

September 27, 2010

Mr. Bryan Donnelly
Facility Manager
Covanta Alexandria/Arlington
5301 Eisenhower Avenue
Alexandria, Virginia 22304

Registration No.: 71895

Dear Mr. Donnelly:

Attached is a minor amendment to your new source review permit dated March 16, 2010 to modify and operate a municipal solid waste incineration facility in accordance with the provisions of the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution (Regulations). Permit changes are reflected in Conditions 6, page 4; Condition 12, page 7; Condition 14.I, page 10; and Appendix A. This amended permit supersedes your permit dated March 16, 2010.

This permit contains legally enforceable conditions. Failure to comply may result in appropriate enforcement. Please read all permit conditions carefully.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on September 22, 2010.

This permit approval to modify and operate shall not relieve Covanta Alexandria/Arlington of the responsibility to comply with all other local, state, and federal permit regulations.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code (VAC) 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. 9 VAC 5-170-200 also provides that you may request direct consideration of the decision by the Board if the Director of the DEQ made the decision. Please consult the relevant regulations for additional requirements for such requests.

| Event | Date | Initials |
|-----------|---------|----------|
| Code: mNR | 9/27/10 | EA |
| Scanned | | |
| QC | | |

Mr. Bryan Donnelly
September 27, 2010
Page 2

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

David K. Paylor, Director
Department of Environmental Quality
P. O. Box 1105
Richmond, VA 23218

If this permit was delivered to you by mail, three days are added to the thirty-day period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit, please contact the regional office at 703.583.3858.

Sincerely,



Terry H. Darton
Regional Air Permit Manager

TAF/THD/EHA/10-288-mnsr

Attachment: Permit
Appendix A

cc: Director, OAPP (electronic file submission)
Manager, Air Compliance
File



NRO-288-10

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE

Douglas W. Domenech
Secretary of Natural Resources

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www.deq.virginia.gov

David K. Paylor
Director

Thomas A. Faha
Regional Director

**STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE
This permit includes designated equipment subject to
New Source Performance Standards (NSPS) and
National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source
Categories.**

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia
Regulations for the Control and Abatement of Air Pollution,

Covanta Alexandria/Arlington, Incorporated
40 Lane Road, CN 2615
Fairfield, NJ 07007
Registration No.: 71895

is authorized to modify and operate

A waste-to-energy facility containing three 121.8 MMBtu per hour
municipal waste combustors

located at

5301 Eisenhower Avenue
Alexandria, Virginia

in accordance with the Conditions of this permit.

Approved on: September 27, 2010

A handwritten signature in black ink, appearing to read 'T. Faha'.

Thomas A. Faha,
Regional Director

Permit consists of 16 pages.
Permit Conditions 1 to 27.
Appendix A

INTRODUCTION

This permit approval is based on the permit application dated September 10, 2010, with additional information dated September 22, 2010, and permit application dated August 13, 2007, as amended by letter dated February 4, 2009 and supplemental information dated March 3, 2009 and March 13, 2009. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-80-1110 (definitions) and 9 VAC 5-10-20 of the State Air Pollution Control Board's (Board) Regulations for the Control and Abatement of Air Pollution (Regulations). The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the Department of Environmental Quality (DEQ) or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

PROCESS REQUIREMENTS

1. **Equipment List** – Previously permitted equipment at this facility prior to the date of this permit consists of

- Fabric filters/baghouse;
- Lime slurry injection system (semi-dry scrubber);
- Ammonia injection system (Selective Non-Catalytic Reduction);
- One underground storage tank for fuel oil with a total capacity of 20,000 gallons;
- One lime storage silo with rated capacity of 2548 ft³/hr;
- One Dolomitic lime silo with rated capacity of 973 ft³/hr
- One carbon storage silo with a rated capacity of 2010 ft³/hr.
- Three municipal waste combustors (MWC) each nominally rated at 121.8 MMBtu per hour based on a higher heating value (HHV) of 4,500 Btu/lb of municipal solid waste (MSW);
- Three municipal waste combustor trains, for this permit a municipal waste combustor train is defined as the feed hopper, feed chute, charging equipment, stoker/grate unit, furnace

section, second pass, generating section, superheater, economizer, induced draft fan and flue;

- Two nominal 12.8 megawatt turbine/electric generators;
- Municipal waste handling and storage facilities; and
- Activated carbon injection system.

Exempted equipment at this facility prior to the date of this permit consists of:

- Ventilation system above the residue handling area.

Specifications included in the permit under this subdivision are for informational purposes only and do not form enforceable terms or conditions of the permit unless the specifications are needed to form the basis for one or more of the other terms or conditions in the permit. (9 VAC 80-1180 D 3)

2. **Emission Controls – MWC** - Particulate matter emissions from the municipal waste combustors shall be controlled by fabric filters. Each fabric filter shall be provided with adequate access for inspection and shall be in operation when the municipal waste combustors are operating. (9 VAC 5-80-1180 and 9 VAC 5-50-260)
3. **Emission Controls – Silos** - Particulate matter emissions from the carbon silo, lime silo, and dolomitic lime silo shall be controlled by fabric filters. The fabric filters shall be provided with adequate access for inspection. (9 VAC 5-80-1180 and 9 VAC 5-50-90)

MONITORING

4. **Monitoring Devices** - The permittee shall install, calibrate, maintain, and operate:
 - a. A continuous emission monitoring system (CEMS) for measuring and recording the oxygen or carbon dioxide content of the flue gas at each location where carbon monoxide, sulfur dioxide, or nitrogen oxides emissions are monitored. The CEMS shall comply with the test procedures and test methods specified in 9 VAC 5-40-8150 B.1 thru B.7.
 - b. Continuous emission monitoring systems for measuring nitrogen oxides (NO_x) and sulfur dioxide (SO₂) discharged to the atmosphere, record the output of the system, and shall follow the procedures and methods specified in 9 VAC 5-80-8140.
 - c. Continuous opacity monitoring systems (COMS) for measuring opacity at each stack where flue gas is vented to the atmosphere and shall follow the methods and procedures specified in 9 VAC 5-40-8140.B.
 - d. A continuous emission monitoring system for measuring carbon monoxide at the

combustor outlet and record the output of the system and shall follow the procedures and methods specified in 9 VAC 5-80-8150 C.3.a through 9 VAC 5-80-8150 C.3.c

(9 VAC 5-80-1180, 9 VAC 5-40-8140, and 9 VAC 5-40-8150)

5. **Monitoring Devices** - The fabric filters shall be equipped with a device to continuously measure differential pressure drop across the baghouse. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the fabric filter is operating.
(9 VAC 5-80-1180 and 9 VAC 5-40-50 H)

OPERATING LIMITATIONS

6. Approved Fuel: Municipal Solid Waste (MSW) –

- a. Acceptable municipal solid waste includes household waste, commercial/retail waste, institutional waste, and other waste with emission characteristics similar to the acceptable wastes as determined by the permittee and approved by the Regional Air Permit Manager of the DEQ's Northern Regional Office (NRO), or a combination thereof as defined in this condition.
- b. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities.
- c. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, non-manufacturing activities at industrial facilities, and other similar establishments or facilities. All commercial/retail waste shall be mixed with other approved fuels prior to charging to the combustor in order to prevent discreet loads from being charged to a boiler.
- d. Institutional waste includes material discarded by schools, non-medical waste discarded by hospitals, material discarded by non-manufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities.
- e. Municipal solid waste does not include hazardous waste, as defined by federal and state waste regulations.
- f. In addition, municipal solid waste shall not include industrial process or manufacturing waste, used oil, sewage sludge, wood pallets, construction, renovation, and demolition wastes, medical waste, motor vehicles (including motor vehicle parts or vehicle fluff) unless approved via the approved Material Review Process (MRP).
- g. The permittee shall monitor the waste delivered to the facility to ensure that only MSW as defined herein is being processed by the facility.

h. This definition of MSW may in the future be expanded to include additional waste types not identified in this condition. To facilitate any revision, the permittee shall submit requests in writing to the Regional Air Permit Manager of the DEQ's NRO. Information on waste composition and emissions characterizations shall be included with any submittal. The request and supporting information will be reviewed and evaluated to determine new source review applicability. The permit will be revised in accordance with the procedures established in the appropriate permitting regulations in the Regulations for the Control and Abatement of Air Pollution.

i. Any waste not classified as hazardous waste, and not covered by the definition of MSW above, shall be reviewed in accordance with the approved MRP (see Appendix A).

(9 VAC 5-80-1180)

7. **Steam Production** - The annual steam production for the facility shall not exceed 1,170,400 tons, on the basis of an average value of 3.34 pounds of steam produced per pound of municipal solid waste (MSW) processed, calculated monthly as the sum of each consecutive twelve month period.

(9 VAC 5-80-1180)

8. **Monthly Steam Production Calculation** - Monthly steam production shall be calculated using the following equation:

$$\text{Tons of Steam Produced} = (\text{Total monthly pounds of MSW combusted}^{**} \times 3.34 \text{ lbs steam/lb of MSW}) \div 2000$$

****MSW combusted** shall be calculated monthly using the following formula:

$$\text{MSW combusted} = \text{Starting pit inventory} + \text{MSW Received} - \text{MSW Rejected} - \text{Ending pit inventory.}$$

(9 VAC 5-80-1180)

9. **Requirements by Reference** - Except where this permit is more restrictive than the applicable requirement, CAA shall operate the three municipal waste combustors in compliance with the applicable requirements of 40 CFR 60 Subpart Cb and 40 CFR 61 Subpart C.

(9 VAC 5-50-400, 9 VAC 5-50-410, 9 VAC 5-60-60, and 9 VAC 5-60-70)

EMISSION LIMITS

10. **Unit Emission Limits** – Subsequent to the issuance of this permit, emissions from the operation of each municipal waste combustor shall not exceed the limitations specified below:

| | <u>lb/MMBtu</u> | <u>lbs/hr</u> | <u>tons/yr</u> |
|--------------------|-----------------|---------------|----------------|
| Particulate Matter | 0.07 | | 12 |

| | | | |
|--|-------------------------|------------------------|-------------------------|
| Particulate Matter 10 (PM ₁₀) | 0.07 | | 12 |
| Sulfur Dioxide | 0.14 | 16.6 | 53 |
| Volatile Organic Compounds | 0.006 | | 3.0 |
| Nitrogen Oxides (as NO ₂) | 0.55 | | 177 |
| Carbon Monoxide | 0.56* | 68.5* | 48.5** |
| Municipal Waste Combustor Metals (measured as particulate matter & made up of the following:) | 6.47 x 10 ⁻³ | | 3.42 |
| Cadmium | 2.7 x 10 ⁻⁴ | | 0.14 |
| Lead | 4.4 x 10 ⁻³ | | 2.32 |
| Mercury | 1.8 x 10 ⁻³ | | 0.96 |
| Municipal Waste Combustor Acid Gases (measured as the sum of SO ₂ and HCl) | 0.48 | 58.3 | 102 |
| Hydrogen Chloride | 0.34 | | 49 |
| Municipal Waste Combustor Organics (measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans) | 1.26 x 10 ⁻⁷ | | 6.7 x 10 ⁻⁵ |
| Total Dioxins and Furans | 5.05 x 10 ⁻⁹ | | 2.7 x 10 ⁻⁵ |
| Beryllium | 4.9 x 10 ⁻⁷ | 6.0 x 10 ⁻⁵ | 2.63 x 10 ⁻⁴ |
| Sulfuric Acid Mist (H ₂ SO ₄) | 2.9 x 10 ⁻³ | | 1.54 |

* Maximum short-term carbon monoxide emission rate.

** Based on an average annual carbon monoxide emission rate of 0.096 lb/MMBtu, calculated monthly as the average of each consecutive twelve month period. Annual emissions shall be calculated monthly as the sum of each consecutive twelve month period unless specified otherwise.
 (9 VAC 5-80-1180, 9 VAC 5-50-260, 9 VAC 5-50-270, 9 VAC 5-50-280, and 9 VAC 5-60-320)

11. **Facility Emission Limits** – Subsequent to the issuance of this permit, total emissions from the operation of the municipal waste combustor plant shall not exceed the limitations specified below, calculated monthly as the sum of each consecutive twelve month period:

| | <u>tons/yr</u> |
|---|----------------|
| Particulate Matter | 35.6 |
| Particulate Matter 10 (PM ₁₀) | 35.6 |

| | |
|---|-------------------------|
| Sulfur Dioxide | 159 |
| Volatile Organic Compounds | 9.1 |
| Nitrogen Oxides (as NO ₂) | 530 |
| Carbon Monoxide | 145.5** |
| Municipal Waste Combustor Metals (measured as particulate matter & made up of the following:) | 10.27 |
| Cadmium | 0.43 |
| Lead | 6.96 |
| Mercury | 2.88 |
| Municipal Waste Combustor Acid Gases (measured as the sum of SO ₂ and HCl) | 305 |
| Hydrogen Chloride | 146 |
| Municipal Waste Combustor Organics Total Dioxins and Furans | 8.1 x 10 ⁻⁵ |
| Beryllium | 7.89 x 10 ⁻⁴ |
| Sulfuric Acid Mist (H ₂ SO ₄) | 4.62 |

** Based on an average annual carbon monoxide emission rate of 0.096 lb/MMBtu, calculated monthly as the average of each consecutive twelve month period.

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits.

(9 VAC 5-80-1180, 9 VAC 5-50-260, 9 VAC 5-50-270, 9 VAC 5-50-280 and 9 VAC 5-60-320)

COMPLIANCE DETERMINATION

12. **Stack Tests** – Within six months of the issuance of this permit, and annually thereafter, the permittee shall conduct performance tests for sulfuric acid mist and particulate matter (PM_{2.5} filterable and PM_{2.5} condensable) from the MWC stacks using EPA methods 1-5, 8, OTM 027, and OTM 028, or other methods as approved by the DEQ. Sulfuric acid mist stack testing shall be conducted to demonstrate compliance with the emission limits contained in this permit.

- a. Emissions testing of each pollutant shall consist of three one-hour test runs (or other length of time as required by the applicable test method). The average of the three runs shall be reported as the short-term emission rate for the facility.
- b. Testing shall be conducted with the MWC operating at eighty percent or more of its maximum rated capacity.

- c. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30.
- d. The details of the tests are to be arranged with the Regional Air Compliance Manager of the DEQ's NRO at the address listed in Condition 13. The permittee shall submit two copies, one paper copy and one on removable electronic media, of the test protocol to the Regional Air Compliance Manager of the DEQ's NRO at least thirty days prior to testing to ensure adequate time for DEQ approval. If the test protocol is received by the DEQ with less than thirty days for review and acceptance, DEQ approval may not be issued in a timely manner to allow for testing to take place according to the permittee's schedule.
- e. Should conditions occur which would require rescheduling the testing, the permittee shall notify the Regional Air Compliance Manager of the DEQ's NRO (at the address listed in Condition 13) in writing, within seven days of the scheduled test date or as soon as the rescheduling is deemed necessary.
- f. Two copies, one paper copy and one on removable electronic media, of the test results shall be submitted to the Regional Air Compliance Manager of the DEQ's NRO (at the address listed in Condition 13) within forty-five days after test completion and shall conform to the test report format enclosed with this permit.

(9 VAC 5-80-1200 and 9 VAC 5-50-30 G)

RECORDS

13. All correspondence concerning this permit shall be submitted to the following address -

Regional Air Compliance/Regional Air Permit Manager
Department of Environmental Quality
Northern Regional Office
13901 Crown Court
Woodbridge, VA 22193

(9 VAC 5-50-50)

14. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO at the address referenced in the Condition 13. These records shall include, but are not limited to:
- a. All scale house receipts documenting incoming MSW deliveries and outgoing MSW that has been rejected.
 - b. A log of daily pit inventory estimations for each bay (Bays 1 – 5).

- c. Annual steam production using the calculation method in Condition 8 to verify compliance with the ton/yr limitation in Condition 7, calculated monthly as the sum of each consecutive twelve-month period. Compliance for the consecutive twelve-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding eleven months.
- d. The emission concentrations and parameters measured using continuous monitoring systems as specified in subsections i and ii below:
 - i. The following measurements specified in i(1) through i(4) of this subpart shall be recorded and be available for submittal to the board or review onsite by an inspector.
 - (1) All six-minute average opacity levels as specified under 9 VAC 5-40-8140 B.
 - (2) All one-hour average sulfur dioxide emission concentrations as specified under 9 VAC 5-40-8140 D.
 - (3) All one-hour average nitrogen oxides emission concentrations as specified under 9 VAC 5-40-8140 G.
 - (4) All one-hour average carbon monoxide emission concentrations, municipal waste combustor unit load measurements, and particulate matter control device inlet temperatures as specified under 9 VAC 5-40-8150 C.
 - ii. The average concentrations and percent reductions, as applicable, specified in subsection ii(1) through ii(4) below shall be computed and recorded, and shall be available for submittal to the board or review on-site by an inspector.
 - (1) All twenty-four hour daily geometric average sulfur dioxide emission concentrations and all twenty-four hour daily geometric average percent reductions in sulfur dioxide emissions as specified in 9 VAC-5-40-8140D.
 - (2) All twenty-four hour daily arithmetic average nitrogen oxides emission concentrations as specified under 9 VAC 5-40-8140 G.
 - (3) All four-hour block or twenty-four hour daily arithmetic average carbon monoxide emission concentrations, as applicable, as specified under 9 VAC 5-40-8150 C.
 - (4) All four-hour block arithmetic average municipal waste combustor unit load levels and particulate matter control device inlet temperatures as specified under 9 VAC 5-40-8150 C.
- e. Identification of the calendar dates when any of the average emission concentrations, percent reductions, or operating parameters recorded under ii(1) through ii(4) of subsection a. above, or the opacity levels recorded under i(1) of subsection a. above, are above the applicable limits, with reasons for such exceedance and a description of corrective actions taken.
- f. Identification of the calendar dates for which the minimum number of hours of any of the

data specified in sections i. through v. of this subpart have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.

- i. Sulfur dioxide emissions data;
 - ii. Nitrogen oxides emissions data;
 - iii. Carbon monoxide emissions data;
 - iv. Municipal waste combustor unit load data; and
 - v. Particulate matter control device temperature data.
- g. Identification of each occurrence that sulfur dioxide emissions data, nitrogen oxides emissions data, or operational data (i.e., carbon monoxide emissions, unit load, and particulate matter control device temperature) have been excluded from the calculation of average emission concentrations or parameters, and the reasons for excluding the data.
- h. The results of daily drift tests and quarterly accuracy determinations for sulfur dioxide, nitrogen oxides (large municipal waste combustors only), and carbon monoxide continuous emission monitoring systems, as required under appendix F of 40 CFR 60, procedure 1.
- i. The continuous emission monitor system records shall be annotated to identify the municipal waste combustor train, dates, light-off and securing times, and average firing rates.
- j. All emission stack test reports.
- k. A copy of the maintenance schedule and records of scheduled and unscheduled maintenance and operator training, in accordance with Condition 18.
- l. All documents required to demonstrate compliance with the approved MRP in Appendix A.

(9 VAC 5-80-1180 and 9 VAC 5-50-50)

GENERAL CONDITIONS

15. Certification of Documents

- A. The following documents submitted to the Board shall be signed by a responsible official: (i) any emission statement, application, form, report, or compliance certification; (ii) any document required to be signed by any provision of the regulations of the Board; or (iii) any other document containing emissions data or compliance information the owner wishes the Board to consider in the administration of its air quality programs. A responsible official is defined as follows:

1. For a business entity, such as a corporation, association or cooperative, a responsible official is either:
 - a. The president, secretary, treasurer, or a vice president of the business entity in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the business entity; or
 - b. A duly authorized representative of such business entity if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars) or (ii) the authority to sign documents has been assigned or delegated to such representative in accordance with procedures of the business entity.
2. For a partnership or sole proprietorship, a responsible official is a general partner or the proprietor, respectively.
3. For a municipality, state, federal, or other public agency, a responsible official is either a principal executive officer or ranking elected official. A principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of the principal geographic unit of the agency.

- B. Any person signing a document under subsection A above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

- C. Subsection B shall be interpreted to mean that the signer must have some form of direction or supervision over the persons gathering the data and preparing the document (the preparers), although the signer need not personally nor directly supervise these activities. The signer need not be in the same line of authority as the preparers, or do the persons gathering the form need to be employees (e.g., outside contractors can be used). It is sufficient that the signer has authority to assure that the necessary actions are taken to prepare a complete and accurate document.

16. Permit Suspension/Revocation - This permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the permit application or any amendments to it;
- b. Fails to comply with the conditions of this permit;
- c. Fails to comply with any emission standards applicable to a permitted emissions unit, included in this permit;
- d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or
- e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9 VAC 5-80-1210 F)

17. Right of Entry - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
- c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

(9 VAC 5-170-130 and 9 VAC 5-80-1180)

18. Maintenance/Operating Procedures – At all times, including periods of start-up, shutdown, soot blowing, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

- 19. Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause of malfunction), corrective action, preventive measures taken and name of person generating the record.
(9 VAC 5-20-180 J and 9 VAC 5-80-1180 D)

- 20. Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Regional Air Compliance Manager of the DEQ's NRO (at the address referenced in Condition 13) of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone, email, or telegraph. Excess emissions for NO_x, SO₂ and CO for more than one hour shall be based on the averaging periods specified in 9 VAC 5-40-7950 et al and the emission limits specified in Condition 10. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered.

The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within 14 days of the occurrence. Owners who are subject to the requirements of 9 VAC 5-40-50C and 9 VAC 5-50-50C, are not required to provide the written statement prescribed in this permit condition for facilities which are subject to the monitoring requirements of 9 VAC 5-40-40 and 9 VAC 5-50-40. 9 VAC 5-40-50C states that:

"Each owner required to install a continuous monitoring system shall submit a written report of excess emissions (as defined in the applicable emission standard) to the board for every calendar quarter. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter and shall include the following information:

- a. The magnitude of excess emissions computed in accordance with 9 VAC 5-40-41B6, any conversion factors used, and the date and time of commencement and completion of each period of excess emissions;
- b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the source. The nature and cause of any malfunction (if known), the corrective action taken or preventative measure adopted;
- c. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and
- d. When no excess emissions have occurred or the continuous monitoring system have not been inoperative, repaired or adjusted, such information shall be stated in the report."

When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Regional Air Compliance Manager of the DEQ's NRO in writing.

(9 VAC 5-20-180 C, 9 VAC 5-40-50C, and 9 VAC 5-80-1180)

21. Notification for Control Equipment Maintenance - The permittee shall furnish notification to the Regional Air Compliance Manager of the DEQ's NRO (at the address referenced in Condition 13) of the intention to shut down or bypass, or both, air pollution control equipment for necessary scheduled maintenance, which results in excess emissions for more than one hour, at least twenty-four hours prior to the shutdown. The notification shall include, but is not limited to, the following information:

- a. Identification of the air pollution control equipment to be taken out of service, as well as its location, and registration number;
- b. The expected length of time that the air pollution control equipment will be out of service;
- c. The nature and quantity of emissions of air pollutants likely to occur during the shutdown period;
- d. Measures that will be taken to minimize the length of the shutdown or to negate the effect of the outage.

(9 VAC 5-20-180 B)

22. Violation of Ambient Air Quality Standard - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I and 9 VAC 5-80-1180)

23. Change of Ownership - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Regional Air Compliance Manager of the DEQ's NRO (at the address referenced in Condition 13) of the change of ownership within thirty days of the transfer.
(9 VAC 5-80-1240)

24. Permit Copy - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)

STATE-ONLY ENFORCEABLE REQUIREMENTS

25. Emissions from the operation of each municipal waste combustor shall not exceed the limitations specified below:

| | <u>lb/MMBtu</u> | <u>tons/yr</u> |
|-------------------|----------------------|----------------|
| Antimony | 3.3×10^{-4} | 0.175 |
| Arsenic | 7.6×10^{-5} | 0.04 |
| Hydrogen Bromide | 6.0×10^{-2} | 31.97 |
| Hydrogen Fluoride | 3.2×10^{-3} | 1.74 |

(9 VAC 5-50-260, 9 VAC 5-50-270, 9 VAC 5-50-280 and 9 VAC 5-60-220)

26. Emissions from the operation of the facility shall not exceed the limitations specified below:

| | <u>tons/yr</u> |
|-------------------|----------------|
| Antimony | 0.53 |
| Arsenic | 0.12 |
| Hydrogen Bromide | 95.91 |
| Hydrogen Fluoride | 5.2 |

(9 VAC 5-50-260, 9 VAC 5-50-270, 9 VAC 5-50-280 and 9 VAC 5-60-220)

27. Covanta Alexandria/Arlington, Inc. shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO. These records shall include, but are not limited to:

- a. Stack test results demonstrating compliance with hydrogen fluoride, antimony, arsenic and hydrogen bromide emissions limits.

These records shall be available on-site for inspection by the DEQ.
(9 VAC 5-80-1180 and 9 VAC 5-50-50)

APPENDIX A
MATERIAL REVIEW PROCESS

Material Review Process

**Covanta Alexandria/Arlington, Inc.
5301 Eisenhower Avenue
Alexandria/Arlington, VA 22304**

**Prepared by
Covanta Energy
September 22, 2010**

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Section 1 - Objectives

The objective of this Material Review Process (MRP) is to ensure that the Covanta Alexandria/Arlington, Inc. (CAA) facility manages and processes Supplemental Waste in an environmentally sound manner in accordance with applicable environmental permits (ref appendix I) and regulations (ref appendix II). Supplemental wastes include other wastes which are not defined as MSW but have similar characteristics to MSW, and Special Wastes requiring special precautions as defined in 9VAC20-80-10 (reference Appendix D). Although MSW is defined in the Municipal Waste Combustor (MWC) regulations which govern the operation and establish the emission standards for facilities such as the CAA (9 VAC 5 Chapter 40, Part II, Article 54, currently codified at 9 VAC 5-40-7960), this definition of MSW is intended only to specify the types of wastes which trigger a combustion facility to be covered under the MWC rules. The language found in the Article 54 definition of MSW was used by VADEQ to develop the definition of Approved Fuel in Condition IIIA2 of the Title V permit for the CAA facility (see definitions, Appendix I in this MRP).

This MRP describes the process used to identify, evaluate, document, and properly handle all Supplemental Wastes received and processed by CAA. Detailed CAA procedures and coordination procedures between Covanta Secure Services (CSS), the corporate group responsible for reviewing Supplemental Waste and CAA are included in the 'Standard Operating Procedure - Supplemental Waste Program' for Covanta, Inc. These detailed procedures are provided to VADEQ as part of the documentation of the Solid Waste Facility Permit and are summarized in this MRP.

The MRP starts with a Material Characterization Form (MCF---copy provided in Appendix III of this MRP) prepared by a generator of Supplemental Waste. The generator is required to provide information on the waste (e.g. MSDS', analysis, generator knowledge, etc.) so that a total review and assessment can be made as to its suitability for thermal destruction at CAA. This review, which includes environmental, health, safety and process considerations, is conducted by CSS. Once the Supplemental Waste is approved by CSS, the entire package is sent to CAA for final review. The CAA Facility Manager has final authority to accept and process Supplemental Waste. Once the facility review is completed, the facility notifies CSS of its decision. Following CSS & CAA approvals, a letter of approval is sent to the generator for Supplemental Wastes which are approved. These wastes can then be received/processed at CAA. If the Supplemental Waste is rejected, a letter of rejection is sent to the generator. The MRP analysis/report will be sent to VADEQ for their record. All records and documentation will be kept on file at CAA for a minimum of 5 years.

Section 2 - Categories of Supplemental Waste Applications

Supplemental Waste Application categories established by the MRP include:

- Supplemental Waste that does not require review
- Supplemental Waste that does require review
- Supplemental Waste that is not acceptable

2.1 Supplemental Waste Applications That Do Not Require Review:

Supplemental Wastes that do not require review are those discarded materials excluded from the definition of MSW, which by nature of their similarity to items discarded in the MSW stream and chemical composition, have no impact on air emissions. These materials are limited to:

- Wood pallets (note: pallets cannot contain any “treated” wood)
- Combustible portion of “clean” construction, renovation and demolition waste such as wood and carpet (must not be covered in wire or roofing shingles)

In addition, Supplemental Wastes that do not require review also include discarded materials excluded from the definition of MSW due to origination as industrial process or manufacturing waste but are similar to the components of MSW. These materials are limited to:

- Packaging debris including
 - i. Paper, cardboard and cellulose products
 - ii. Plastic products
 - iii. Wood
- Food
- Clothing

This type of Supplemental Waste is not profiled, but instead receives a generic approval using the alternate MCF (Form 1G—see appendix III), and is processed when received.

2.2 Supplemental Waste Applications That Require Review:

Supplemental Wastes that requires review are profiled to determine acceptability. Generally, these categories of Supplemental Wastes are those discarded materials excluded from the definition of MSW because they are industrial process or manufacturing waste. Industrial process or manufacturing waste shall mean any solid waste that is the direct result of the production process, including finished product that has not been warehoused or distributed to commercial, retail or institutional facilities. Any source generating Supplemental Wastes will be considered for review, with the acceptability determined by the nature of the wastes themselves. Quantity limits will be determined on a case-by-case basis as necessary by CSS and will be consistent with limits imposed by the CAA operating requirements.

The following are categories of Supplemental Waste that are acceptable at CAA provided that they meet the review criteria established by this MRP.

- Oily waste, consisting of absorbents and debris with oil contamination. All recoverable oil removed.
- Soil contaminated with petroleum product as defined by 9 VAC 20-80-700 (Appendix I).
- Commercial Chemical Product as defined by 9 VAC 20-80-10.
- Industrial Waste as defined by 9 VAC 20-80-10 (Appendix I).
- Liquid Waste as defined by 9 VAC 20-80-10 (Appendix I).
- "RCRA empty" containers that are not subject to 40 CFR 261 through 265, etc. as defined in 40 CFR 261.7 (Appendix I).
- "Triple rinsed" pesticide containers.
- Sewage Sludge

2.3 Supplemental Waste That Is Not Acceptable

Supplemental Waste identified below is not acceptable for processing at CAA as applied to homogenous loads of the following materials:

- FIFRA regulated pesticides.
- RCRA hazardous waste.
- Hazardous waste as defined by 40 CFR 261 (Appendix D).
- Materials exempt from RCRA hazardous waste regulations due to the small quantity generator rules, 40 CFR 261.5 (Appendix D).
- Solid waste containing concentrations of PCBs greater than 1.0 ppmw, 9 VAC 20-80-650 (Appendix D).
- Regulated medical waste as defined by 9 VAC 20-120-10 (Appendix D).
- Batteries.
- Bulky waste, large machinery and appliances.
- Non combustible portion of construction and demolition materials.
- Explosives.
- Universal Waste.
- Radioactive materials.
- Street sweepings from public roads outside facility property.
- Transformers and ballasts.
- Any mercury containing waste.
- Any waste otherwise prohibited by state or federal regulation.
- Animal carcasses

Section 3 -Supplemental Waste Management

All Waste Material Generators are responsible for the proper identification and classification of their Supplemental Waste. Any Waste Material Generator that requests to have its Supplemental Waste processed at CAA must have an approval letter documenting CSS and CAA review and evaluation of the waste material. This section describes the review and evaluation procedures and the responsibilities of the Supplemental Waste generator.

3.1 Application, Review and Evaluation Process

3.1.1 Application Procedures

Generators of Supplemental Wastes pursuant to this document may apply for disposal at CAA by contacting CSS. Applicants will be sent a MCF to be completed for each waste stream; these forms have been included in Appendix III. The Waste Material Generator will complete, sign and return the forms to fully characterize the waste stream. The type of chemical information that may be requested is discussed in Section 4.2.

3.1.2 Waste Evaluation

CSS Environmental, Health and Safety Specialists will evaluate each Supplemental Waste application using the approval criteria outlined in Section 4 of this document. During the evaluation process, available information will be reviewed and additional information may be requested as necessary.

3.1.3 Approval or Rejection

Once CSS & CAA review the application, approval or rejection letters will be issued by CSS to the generator for each application received. A copy of the documentation will be filed with each application to ensure consistency with the manifest documentation system. If a waste is approved, the generator will be sent an approval letter. The approval package will contain a "Terms and Conditions" document which will list the conditions under which the material is acceptable.

3.1.4 Waste Delivery

After approval, delivery of approved Supplemental Waste materials to the CAA facility must be scheduled in advance. The generator shall contact CAA to arrange a delivery time. The CAAI operating staff will include the Chief Engineer who will also act as the designated Supplemental Waste Coordinator (SWC) to ensure that the materials will be processed in accordance with all approval conditions. Upon arrival of a Supplemental Waste delivery at the CAA facility the scale house attendant will notify the SWC who will confirm that they are delivering approved Supplemental Waste materials. The

original copy of the truck manifest form and non hazardous certification must accompany the load to the CAA facility and be presented at the scale-house upon arrival.

3.1.5 Waste Processing

At the beginning of each shift during which Supplemental Wastes will be received, the SWC will review with all appropriate personnel the materials to be received, any special handling requirements and any unique characteristics. During this meeting, a thorough discussion of feed requirements will be conducted, with the SWC explaining in detail the mixture requirements. The SWC will observe the initial feeding of wastes and communicate to the operator if any adjustments should be made. Once the Supplemental Waste processing proceeds, should any issues arise; the operator will immediately contact the SWC.

Upon delivery to the scale house at CAA, the scale house attendant will notify the Control Room of the arrival and will direct the vehicle to the appropriate location where it will be met by the SWC or his designee. CAA staff will then compare the truck manifest to the approval and visually inspect the contents of the shipment to ensure that it matches the physical description in the approval. In addition all containers will be checked for proper labeling and the quantity of material in the load will be checked against the manifest. All inconsistencies must be resolved before processing. Any unidentified materials will be rejected and returned to the generator.

Accepted Supplemental Waste will then be processed and fed into the boilers by one of two methods. The first method involves placing the Supplemental Waste directly into the refuse holding pit and mixing the Supplemental Waste with MSW. Supplemental Waste that can be blended with MSW at a mix rate of 30 parts MSW to one part Supplemental Waste or less e.g. (20 or 10 parts MSW to one part Supplemental Waste) will be placed into the refuse holding pit. These materials are pushed directly into the refuse holding pit with the front end loader. The crane operator then picks up the co-mingled Supplemental Waste materials with the grapple crane. The grapple crane has a nominal capacity of 6 cu. yds. and lifts mixed waste with an average density of 700 lb/cu.yd., or about 2.2 tons per lift. The material is lifted and then moved to one area of the pit. As the crane is being moved, the material is slowly released from the crane spreading the Supplemental Waste material throughout the pit. The operator then picks up a grapple load of MSW and lightly covers the Supplemental Waste material in the same manner. The crane operator then picks up parts of the Supplemental Waste/MSW mixture, lifts the material about 20 feet above the surface of the waste in the pit, then moves the crane while slowly releasing the mixture. This further mixes the materials. The process is repeated until the desired mix ratio is achieved. The crane operator will be briefed by the SWC prior to accepting and mixing Supplemental Waste. At this meeting, the operator is given a sheet with the schedule of supplemental loads for the day. The sheet lists the approval numbers, schedule times, tonnage, material type and mix ratio for each load. This allows the operator to know how much is on each load and how it is to be mixed.

The second method involves transporting the Supplemental Waste material directly to the feed hopper, then feeding the material directly into the feed hopper at a rate specified during the review process. CAA staff has a tracking document that lists each approved material and its specific feed rate. This tracking document is also provided to the generators as it identifies the packaging requirements for each material. These packaging requirements correspond with the feed rates for each material. For example, if the feed rate for a particular material is 500 lbs / 15 minutes per boiler, the tracking document tells the generator that each container of this material may weigh up to but not exceed 500 lbs. If the actual container weight is 250 lbs each, the operator may feed two (2) containers every 15 minutes.

The determination of pit and hopper approval conditions is made upon the basis of calculating a mix ratio of MSW to Supplemental Waste that may be processed in conformance with all applicable regulatory standards, employee health and safety standards and without exceeding any emission limit. If the calculated mix ratio exceeds 30:1 the material must be hopper fed and the mix ratio is converted into a feed rate as pounds per 15 minutes per hopper. Materials that have a pit mix ratio of 30:1 or less may be mixed in the pit. The approval conditions for each waste stream include processing directions. Materials that have mix ratios up to 10:1 are considered 'normal mixing', greater than 10:1 and up to 20:1 are considered 'medium' indicating that the crane operator should pay special attention to the material, and mix ratios over 20:1 are considered 'high' requiring more care in mixing. In some cases materials that are considered difficult to mix require 'extensive' mixing. In addition the approval will indicate the reason that any material that requires more than normal mixing (potential to form acid gases, physical properties, etc).

The designation of normal, medium, high and extensive mixing to CAA allows the crane operator to apply the level of mixing needed to process the material without causing process upsets. The linkage of mix ratios with these designations is based upon Covanta's Waste to Energy experience developing this program at various facilities and is consistent across all mass burn facilities. Due to the variety of pit conditions and waste properties it is not feasible to have a formula for the crane operator to follow for mixing Supplemental Waste with MSW. It is the crane operator's job to thoroughly mix MSW prior to the feeding the combustor. His experience in mixing MSW to provide uniform feed to the combustor is utilized when blending Supplemental Waste. The crane operator is in constant contact with the Control Room Operator and receives feed back regarding any combustion upset; this allows him to maintain a well mixed blend of waste to the unit to maintain good combustion which results in minimizing emissions.

3.2 CSS Criteria for Acceptance

Decisions on whether to accept a specific Supplemental Waste will be based on the acceptance criteria. These evaluations are based on employee safety, environmental protection, facility operation, shipping and handling requirements and other appropriate criteria. Meeting all criteria does not guarantee a waste will be accepted. CAA reserves the right to reject any waste. CAA also reserves the right to add additional acceptance criteria. All accepted waste must be delivered directly to the CAA facility.

3.3 Reporting

Files are maintained of each approved Supplemental Waste application at CAA for review by VADEQ for at least five (5) years after the Supplemental Waste in that approved application ceases to ship into the facility, consistent with the lifetime of CAA's Title V permit.

3.4 Responsibility for Laboratory Results

The Waste Material Generator is responsible for obtaining laboratory data requested by CSS. CSS may request that the generator supply additional information or supply information from laboratories regarding quality control information. All laboratory data must be certified, by the laboratory, as to the accuracy and methods used.

3.5 Responsibility for Accuracy

The generator is responsible for supplying CSS with all the information needed to appropriately evaluate a waste. CSS reserves the right to request additional information. CSS reserves the right to not accept the waste material.

3.6 Amendment of the MRP

CAA recognizes that the characteristics of wastes, the analytical procedures used to characterize wastes, modification of the facility's permits and emission standards, the rules governing management of wastes may change in the future. CAA will provide amendments to this MRP as necessary to accommodate these changes. MRP modifications will only be made upon receiving VADEQ approval to do so.

Section 4 Environmental Review Criteria

4.1 Purpose

The purpose of the Environmental Review is to fully understand the properties of the waste to determine if it can be accepted and processed as Supplemental Waste in compliance with all applicable permit and regulatory criteria.

4.2 Chemical data

The MCF requires that the Waste Material Generator identify the chemical composition of the waste. This data is used to evaluate the waste for environmental acceptance. An addendum to the 'standard' forms (Virginia Destination Addendum Form—see Appendix III) will be used for waste destined for Virginia to specifically identify any constituents in the waste that are Hazardous Air Pollutants (HAPs) as defined in the Commonwealth of Virginia State Air Pollution Control Board's (SAPCB's) Regulations for the Control and Abatement of Air Pollution (Regulations). CSS will use this information to determine whether additional feed considerations are necessary to meet state HAPs regulations. The chemical composition of the waste may be determined by either the Waste Material Generator's detailed process knowledge or analytical testing. Process knowledge is typically available for wastes produced by industrial manufacturing facilities. At these facilities, the generator has control over process variables and experience with raw materials, intermediate products and final products. The Waste Material Generator must submit the basis for any materials where process knowledge is used as the determining factor for acceptability. Process knowledge may include:

- Formulation sheets or chemical formulas
- Material Safety Data Sheets
- Detailed process descriptions, flow sheets, etc.
- Public documents (Chemical Engineer's Handbook, etc.)

Analytical data is required for wastes that cannot be completely described by process knowledge. Analytical data may include:

- RCRA tests as defined in 40 CFR 261 Appendix I, II, and III
- Total metals, sulfur, or chlorine analysis
- Tests to determine 'on-spec' used oil commingled with solid waste per 40 CFR 279

4.3 RCRA Characterization

This review ensures that all materials delivered to CAA are not RCRA hazardous.

- Each generator shall provide a certificate that materials are non-hazardous and information that supports the certification.
- CSS shall determine that the generator has appropriate procedures to characterize waste as non-hazardous based on the data provided and discussions with appropriate representatives of the generator. CSS will review generator information to confirm that there are no inconsistencies with the non-hazardous characterization. This information can include, but not be limited to, MSDS', physical analysis, chemical analysis, raw material lists and process descriptions. Any inconsistencies must be resolved to confirm the non-hazardous determination.

4.4 Air Emissions

4.4.1 Potential Emissions Review

CSS shall review the Supplemental Waste application to consider all potential air emissions. CSS conservatively assumes that all materials of concern are converted into air emissions, i.e. chlorine, sulfur, cadmium, mercury and lead (except that elements that are chemically bound in a non-combustible material are not considered, for example an alloy bolt that contains cadmium in the alloy). Where a range of concentration is provided, 'worst case' concentrations of chlorine, sulfur, cadmium, mercury, and lead are utilized in the review process. The ultimate goal of the review process is to ensure that the burning of any supplemental waste does not create any other regulated air pollutant, in any way deteriorate the air quality in the region or contain any air-pollution causing substance that was otherwise not considered in the current operating permits.

4.4.2 Acid gases

Acid gas emissions are calculated assuming that all (100%) sulfur and chlorine content is converted to acid gas in the raw (non-scrubbed) flue gas. These conservative assumptions establish a maximum allowable Supplemental Waste concentration of 0.9% by weight for chlorine and 1.2% by weight for sulfur that can be pit fed. These amounts of acid gas constituents conservatively increase the raw flue gas concentrations by approximately 120 ppm_{dv} and 180 ppm_{dv} respectively and are well within the capability of the air pollution control equipment to maintain permit limits. These criteria are selected to maintain acid gas concentrations within the desired operational target range. Supplemental Waste with higher concentrations of sulfur or chlorine is acceptable for disposal by mixing in the refuse pit or may be processed by periodically feeding measured quantities directly to the feed hopper of the MWC unit. These calculation procedures produce feed conditions for Supplemental Waste that are equivalent to the above criteria.

4.4.3 Lead, Cadmium and Mercury

Supplemental Waste applications that contain lead or cadmium will be evaluated based upon the baghouse efficiency described below, baseline emissions calculated from the 80% upper confidence limit of annual stack test data, and a maximum calculated emission (baseline plus Supplemental Waste) not to exceed 67% of the permit limit. All

lead and cadmium (except lead or cadmium contained in a non-combustible metal alloy or similar material) are assumed to be volatilized.

The allowable concentration for lead is based upon maintaining emissions below the permit limit of 440 ug/dscm (micro grams per standard dry cubic meter) @ 7% O₂. The allowable concentration for cadmium is based upon maintaining emissions below the permit limit of 40 ug/dscm @ 7% O₂.

The permit emission limit for mercury is 80 ug/dscm @7% O₂. Supplemental Waste containing manufactured mercury compounds is not accepted. In some wastes the Waste generator has knowledge of 'artifact' mercury that is trace mercury in minerals or compounds that is the result of mercury found in nature. These materials are accepted provided that the mercury concentration is less than 1 ppmw. Note that 1 ppmw is the equivalent of approximately 20 micrograms per standard cubic meter in the raw flue gas. As typical mercury removal efficiency exceeds 95%, the impact on emissions is generally less than 1 microgram per standard cubic meter or less than 0.045 grams per ton of Supplemental Waste processed from 'artifact' mercury.

4.4.4. Hazardous Air Pollutants (HAPs)

Each waste stream will be reviewed using generator knowledge or analytical results and the concentration of any HAPs contained in the Supplemental Waste will be reviewed for potential ambient air impact. This review will also include an assessment of the ability of the wastes to create HAPs during combustion. For example a benzene containing waste, say a material with 100 ppmw benzene contamination, would be analyzed for benzene HAPs emissions; just as chlorophenols have the potential to generate dioxins.

- **Particulate HAPs** - Collection efficiency of particulate HAPS (inorganic materials such as metals) will be 0.99, based upon baghouse collection efficiency. Typical inlet mass balance concentrations are in excess of 1 grain/dscf corrected and outlet particulate loadings are less than 0.01 grain/dscf corrected.

All 'Supplemental Waste' fed to the combustion units which contains HAPs will be limited to maintain emissions below the levels required by 9 VAC 5-60-200 unless applicable permit limits have been established; in that case applicable permit limits shall apply.

- **Combustible HAPs** - Covanta Alexandria/Arlington utilizes a substantially similar combustion train and air pollution control system as the Covanta Fairfax (Lorton, VA) facility. Combustion efficiency of the Covanta Fairfax facility has been modeled using procedures developed at the University of Dayton Research Institute to determine the relative stability of HAPs and correlation of calculated destructive efficiency with stack test data from similar combustion processes. This study indicated a destructive efficiency for the most difficult to destroy HAPs (benzene) of

0.9999 should be achieved. This is consistent with the facility's measured combustion efficiency which is generally 0.9996 or greater. Corrected CO₂ emissions are about 12% and corrected CO emissions are less than 50 ppm_{dv}. This translates into a combustion efficiency of about 0.9996; at the permit limit of 100 ppm_{dv} the combustion efficiency is about 0.9992. A combustion efficiency of 0.999 (approximately the combustion efficiency at the permit limit of 100 ppm_{dv} CO) will be used to analyze the worst case stack emissions of any combustible HAP contained in the Supplemental Waste. No additional removal efficiency will be considered due to adsorption on particulate and capture in the baghouse.

- **Sample Calculation Procedure** - Consider a hypothetical HAP with a molecular weight of 50. 100 ppm_w is equivalent to 0.2lbs of HAP/ton; with 0.999 destruction efficiency this results in an emission rate of 0.0002 lbs/ton. Consider that if the Supplemental Waste were mixed 10:1 with MSW the concentration of HAPs in the flue gas would be 0.001 ppm_{dv}. Alternately, based upon ambient air quality modeling conducted for the permitting of the Virginia facilities, the one hour worst case chi/Q factor was 5.4 ug/m³ per gram/sec leaving the stack. Suppose we assume 10 tons are burned in one hour (far more than we ever intend to burn in one hour), the stack emission rate is 0.0003 grams/second and worst case ground level concentration is $.0003 * 5.4 = .002$ ug/m³. We propose that this is a negligible amount for any listed HAP that does not have a Threshold Limit Value (TLV).
- **Additional Considerations** - For Supplemental Waste containing HAPs in concentrations exceeding 100 ppm_w and which do not have an established TLV, an appropriate ambient air concentration will be established from existing databases and existing air modeling parameters applied to determine allowable stack concentrations. Supplemental Waste feed rates will be calculated from the allowable stack concentrations. The basis for determining the ambient air concentration and the acceptability of processing the waste material will be calculated as above.

In conformance with 9 VAC 5-60-200, the potential to emit for any HAP from the CAA facility shall not exceed 22.8 lbs/hr.

4.5 Operations Review

After the successful completion of the Safety (addressed by the Standard Operating Procedure for the Supplemental Waste Program) and Environmental review (summarized in Section 4 of this MRP above) by CSS, CAA operations staff reviews the complete approval package. This review will focus upon operational considerations but will also consider the safety and environmental reviews. The CAA staff may require additional information or justification prior to accepting the Supplemental Waste. The Facility Manager has the authority to reject any proposed Supplemental Waste.

Section 5 Scheduling and Receiving Waste Materials

The safety, environmental and operations review may specify special shipping and handling conditions. Those conditions controlled by the generator will be included in the approval letter. All generators will be required to provide a pre-shipment notice and receive CAA approval prior to shipment. Any waste that cannot be handled in a manner to meet all requirements for safety, environmental compliance, and operational needs will be rejected.

Once the Waste Material Generator (or their authorized representative) receives the approval letter, they are authorized to request approval to ship the waste material. This is accomplished by calling CSS and requesting a delivery date. Once it is confirmed that the wastes are acceptable as part of the approval letter authorization that has been granted, a Covanta Secure Services Pre-shipment Notification Form (see Appendix III) is then generated and sent to the generator which details what wastes are to be delivered and when (date and time). This notice must then be sent directly to CAA so that the delivery can be entered into their schedule. Should there be a need to change the delivery schedule; CAA will notify CSS who in turn will notify the generator. New documents will be generated for the rescheduled delivery.

The scheduling of each delivery by CAA shall consider the impact of all Supplemental Waste deliveries. Deliveries of materials that have elevated levels of chlorine, sulfur, lead, cadmium, or mercury indicated in the approval conditions will be staggered to maintain compliance at all times. Materials that have the potential to emit HAPs will be scheduled to maintain potential emissions below those determined by the Environmental Review. In addition, Supplemental Waste will be scheduled consistent with the day-to-day operating conditions at the facility. For example, during maintenance and outage periods, delivery schedules will be consistent with the availability and through put of the facility.

All materials shall be shipped on a non-hazardous manifest or bill of lading. Each vehicle delivering Supplemental Waste shall include a RCRA non-hazardous certification. Supplemental Waste deliveries are carefully scheduled so they can be processed in a safe and efficient manner.

Section 6 Monitoring, Reporting and Record Keeping

For the first delivery of a new waste material to CAA, the CAA facility staff will file an Initial Waste Stream Review Report. This report will be retained in the CAA file and a copy will be forwarded to CSS for the permanent corporate file. Any processing difficulties encountered are investigated and resolved prior to accepting additional loads of the waste material.

Any difficulties experienced with ongoing deliveries of the waste materials authorized for delivery under this approval number will be reported and managed under the existing CSS Discrepancy Reporting Procedure included within the Standard Operating Procedure for the Supplemental Waste Program.

A Certificate of Destruction (see Appendix III) is generated as required which details what was destroyed and on what date. These reports are kept on file at CAA. All active Approval Packages will be maintained at the CAA site and at CSS in Fairfield, NJ. In the event that this customer ceases to use Covanta's services, these packages will be kept for at least five (5) years after the last shipment of waste has been received.

Appendix I Definitions/Regulations

Municipal Solid Waste (MSW) shall be defined as:

- a. **Acceptable municipal solid waste includes household waste, commercial/retail waste, institutional waste, and other waste with emission characteristics similar to the acceptable wastes as determined by the permittee and approved by the Regional Air Permit Manager of the DEQ's Northern Regional Office (NRO), or a combination thereof as defined in this condition.**
- b. **Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities.**
- c. **Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, non-manufacturing activities at industrial facilities, and other similar establishments or facilities. All commercial/retail waste shall be mixed with other approved fuels prior to charging to the combustor in order to prevent discred loads from being charged to a boiler.**
- d. **Institutional waste includes material discarded by schools, non-medical waste discarded by hospitals, material discarded by non-manufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities.**
- e. **Municipal solid waste does not include hazardous waste, as defined by federal and state waste regulations.**
- f. **In addition, municipal solid waste shall not include industrial process or manufacturing waste, used oil, sewage sludge, wood pallets, construction, renovation, and demolition wastes, medical waste, motor vehicles (including motor vehicle parts or vehicle fluff).**
- g. **The permittee shall monitor the waste delivered to the facility to ensure that only MSW as defined herein is being processed by the facility.**
- h. **This definition of MSW may in the future be expanded to include additional waste types not identified in this condition.**
- i. **In the event Covanta Alexandria/Arlington (CAA) wishes to process waste types other than MSW, as described above, or expand the definition of MSW, the permittee shall submit a request, including the applicable portion(s) of a Form 7, to the Regional Air Permit Manager of the DEQ's NRO. Information on waste composition and emissions characterizations shall be included with the submittal. The request and supporting documentation will be reviewed and evaluated to determine appropriate regulatory**

applicability. The permit may be revised in accordance with the procedures established by the appropriate permitting regulations in the State of Virginia's Regulations for the Control and Abatement of Air Pollution. CAA shall receive DEQ approval prior to processing any waste types not identified herein.

(9 VAC 5-80-110, 9 VAC 5-80-1180, and Condition 6 of 03/16/10 mNSR Permit)

9VAC20-80-10. Definitions.

"Special wastes" mean solid wastes that are difficult to handle, require special precautions because of hazardous properties or the nature of the waste creates waste management problems in normal operations. (See Part VIII (9VAC20-80-630 et seq.) of this chapter.)

9VAC20-80-630. General.

A. The requirements and standards contained in this part apply to solid waste that requires special handling and precautions and are in addition to the general requirements contained in Parts V (9VAC20-80-240 et seq.) and VI (9VAC20-80-320 et seq.) of this chapter, as applicable.

1. Facilities may receive solid waste that requires special handling for processing or disposal only with specific approval of the director or by specific provisions within the facility permit. The operator should contact the department for advice about new or unusual wastes and proper handling techniques. If it is not clear that a particular waste is within the authorized wastes that a permitted facility may receive, it is required that the operator receive a letter of clarification from the department before receiving the waste.

2. Nothing in this part shall limit or affect the power of the director, by his order, to prohibit storage, treatment or disposal of any waste or require special handling requirements he determines are necessary to protect the public health or the environment.

3. The specific special wastes identified in this part are not all inclusive but intended to provide instructions for the wastes most frequently managed through solid waste management facilities. Other special wastes such as discarded chemicals and pesticides not regulated as hazardous wastes, oil spill cleanup, hazardous materials incident site cleanup, underground and aboveground storage site residues from cleanup, pesticide containers, hazardous wastes generated by conditionally exempt small quantity generators as defined by the hazardous waste regulations, compressed gas cylinders, and contaminated food products and fabrics requiring supervised disposal are examples of the type of special wastes for which approval by the director would be required before permitted solid waste management facilities could receive and dispose of these materials, unless the material is specifically included in the facility permit. Facilities with an approved special waste acceptance plan incorporated into the operations manual of the

facility permit are not required to obtain specific approval when the waste acceptance plan is followed.

B. The requirements and standards contained in this part also apply to specific materials that are used in a manner that constitutes disposal.

9VAC20-80-240. General.

A. Any person who constructs, or operates any solid waste disposal facility (e.g., sanitary landfill, construction/demolition/debris landfill, or an industrial waste landfill), not otherwise exempt under 9VAC20-80-60 D, shall comply with the requirements of this part. Further, all applications for permits pursuant to these standards shall demonstrate specific means proposed for compliance with requirements set forth in this part.

B. Solid waste disposal facilities shall be maintained and operated in accordance with the permit issued pursuant to this chapter, and in accordance with the approved design and intended use of the facility.

C. Hazardous wastes shall not be disposed or managed in solid waste disposal facilities subject to this chapter unless specifically authorized by the facility permit or the director.

D. Solid waste disposal facilities shall comply with the Financial Assurance Regulations for Solid Waste Disposal, Transfer, and Treatment Facilities (9VAC20-70) of the Virginia Waste Management Board.

E. Establishment, operation or maintenance of any solid waste disposal facility as an open dump is prohibited (see Part IV (9VAC20-80-170 et seq.) of this chapter).

F. A solid waste management facility regulated under Part VI (9VAC20-80-320 et seq.) of this chapter will become subject to the appropriate closure and post-closure care standards contained in this part if solid waste will remain after the closure of such a facility.

9VAC20-80-320. General.

A. Purpose, scope, and applicability.

1. Any person who designs, constructs, or operates any solid waste treatment or storage facility not otherwise exempt under 9VAC20-80-60 D shall comply with the requirements of this part.

2. Facilities shall be maintained and operated in accordance with the permit issued pursuant to this chapter, and in accordance with the approved design and intended use of the facility.

3. Hazardous wastes shall not be disposed or managed in solid waste management facilities subject to this chapter unless specified in the permit or by specific approval of the executive director.

B. Siting. Siting standards for each type of solid waste management facility in this part shall be governed by the siting standards as established for each separate facility.

C. Closure. Solid waste management facilities regulated under this part which, upon closure, will dispose of solid waste residues on-site, are subject to the ground water monitoring requirements in 9VAC20-80-250 D, closure and post-closure care requirements in 9VAC20-80-250 E and F, and permitting requirements of Part VII (9VAC20-80-480 et seq.) of this chapter. All other facilities shall close in accordance with the closure plan prepared in accordance with the requirements described in this part and 9VAC20-80-530 or 9VAC20-80-540, as applicable. Owners and operators of facilities that treat solid wastes are required to demonstrate financial assurance for closure in accordance with 9VAC20-70-10 et seq.

D. Solid waste left in place. Solid waste management facilities regulated under this part which place solid wastes or residues on site for disposal or leave such wastes in place after closure, are subject to the provisions of Part V (9VAC20-80-240 et seq.) of this chapter.

9VAC20-80-700. Soil contaminated with petroleum products.

A. Applicability.

1. The specific requirements contained in this section apply to requests by the owner or operator of a solid waste disposal facility for approval of disposal of soil contaminated solely with petroleum and petroleum products, including but not limited to diesel fuels, kerosene, gasoline, hydraulic fluids, jet engine fuel, and motor oil.
2. Any contaminated soil from a state other than Virginia that is classified as a hazardous waste in the state of origin shall be managed as a hazardous waste. Such wastes are not acceptable for disposal in a solid waste management facility in the Commonwealth.

B. Required information.

1. A statement from the generator certifying that the soil is non-hazardous waste as defined by the Virginia Hazardous Waste Management Regulations or federal regulations under Subtitle C, Resource Conservation and Recovery Act.
2. The amount of petroleum contaminated soil to be disposed.
3. A description of the sampling protocol and a copy of all laboratory analyses.
4. If generated in a state other than Virginia, certification from the generator that the waste is not considered a hazardous waste in its state of generation.

C. Testing requirements.

1. Analytical methods. Following methods shall be used in the analysis of the contaminated soil:
 - a. The presence of any free liquid shall be determined by EPA SW-846 method 9095, Paint Filter Liquids Test.
 - b. The total petroleum hydrocarbon (TPH) concentration shall be determined by using EPA SW-846 method 5035/8015B.

c. The concentration of benzene, toluene, ethyl benzene, and xylene (BTEX) shall be determined by using EPA SW-846 method 8021B.

d. The soil shall be tested for total organic halogens (TOX) in accordance with test methods contained in EPA SW-846.

e. The soil contaminated by leakage from an underground tank shall be tested for EP toxicity using EPA SW-846 method 1310. If the tank contained motor oil, the testing may be limited to heavy metals; tanks that contained all other petroleum products shall be tested for lead and any other compound covered by that test known to be present.

f. The soil contaminated as a result of anything other than leakage from an underground storage tank shall be tested by the Toxicity Characteristic Leaching Procedure (TCLP). If the soil was contaminated by virgin motor oil, the testing may be limited to heavy metals. Soil contaminated by any petroleum product other than virgin motor oil shall be tested for lead and any other compound covered by that test known to be present. If other TCLP constituents are not tested for, the generator shall be able to certify that the soil is not a hazardous waste, and certify that it did not contain those constituents not tested.

2. Sampling. A minimum of one composite sample shall be analyzed for each required test for every 100 cubic yards of soil to be disposed. In the case of soil reclaimed by thermal treatment, a minimum of one sample shall be analyzed for every production day composited hourly. For very large amounts of soil the sampling rates may be adjusted with the approval of the director.

3. a. In the case of soil contaminated with gasoline, the testing requirements for TCLP for lead, TOX, or the paint filter liquids test may be waived, if the department staff determines that the material was contaminated with unleaded gasoline, does not contain any halogenated hydrocarbons, or free liquids.

b. Waiver for BTEX testing requirements may be granted, if the generator can provide sufficient documentation that the material does not contain any benzene, toluene, ethyl benzene, or xylenes, and the amount of material to be disposed of is less than 20 cubic yards.

D. Disposal criteria.

1. Soils failing the TCLP test shall be managed in accordance with the Virginia Hazardous Waste Management Regulations.

2. Soils exhibiting greater than 100 milligram per kilogram (mg/kg) of TOX may not be disposed of until separate approval from the department is granted. This request shall document the cause for the high TOX level.

3. If the concentration of total BTEX is greater than 10 mg/kg or TPH is greater than 500 mg/kg, the soil cannot be disposed of in any sanitary or industrial landfill unless the facility permit expressly allows such disposal.

4. If the concentration of TPH is less than 500 mg/kg and total BTEX is less than 10 mg/kg, the disposal of the contaminated soil may be approved for permitted sanitary or industrial landfills equipped with liners and leachate collection systems.

5. Soil containing less than 50 mg/kg TPH and total BTEX less than 10 mg/kg may be used as clean fill. This soil, however, may not be disposed of closer than 100 feet of any regularly flowing surface water body or river, 500 feet of any well, spring or other ground water source of drinking water, and 200 feet from any residence, school, hospital, nursing home or recreational park area. In addition, if the soil is not to be disposed of on the generator's property, the generator shall notify the property owner that the soil is contaminated and with what it is contaminated.

E. Exemptions.

1. Contaminated soil resulting from a storage tank release or from a spill may be considered for an exemption from the limits and/or testing specified in subsection D of this section where the total volume of contaminated soil from a cleanup site is less than 20 cubic yards, and the contaminated soil is not a hazardous waste.

2. The director may approve the disposal of contaminated soil resulting from an emergency cleanup of a spill of petroleum products, provided that the waste is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations or by federal regulations under Subtitle C of RCRA.

3. Soil contaminated with petroleum products resulting from ordinary household functions may be disposed with the general household waste.

9VAC20-80-10. Definitions.

"Commercial chemical product" means a chemical substance which is manufactured or formulated for commercial, agricultural or manufacturing use. This term includes a manufacturing chemical intermediate, off-specification chemical product, which, if it met specification, would have been a chemical product or intermediate. It includes any residues remaining in the container or the inner liner removed from the container that has been used to hold any of the above which have not been removed using the practices commonly employed to remove materials from that type of container and has more than one inch of residue remaining.

"Industrial waste" means any solid waste generated by manufacturing or industrial process that is not a regulated hazardous waste. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: Electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

"Liquid waste" means any waste material that is determined to contain "free liquids" as defined by this chapter. "Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure as determined by the Paint Filter Liquids Test, Method 9095, U.S. Environmental Protection Agency, Publication SW-846.

§ 261.7 Residues of hazardous waste in empty containers.

(a)(1) Any hazardous waste remaining in either (i) an empty container or (ii) an inner liner removed from an empty container, as defined in paragraph (b) of this section, is not subject to regulation under parts 261 through 265, or part 268, 270 or 124 of this chapter or to the notification requirements of section 3010 of RCRA.

(2) Any hazardous waste in either (i) a container that is not empty or (ii) an inner liner removed from a container that is not empty, as defined in paragraph (b) of this section, is subject to regulation under parts 261 through 265, and parts 268, 270 and 124 of this chapter and to the notification requirements of section 3010 of RCRA.

(b)(1) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste listed in §§261.31, 261.32, or 261.33(e) of this chapter is empty if:

(i) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, *e.g.*, pouring, pumping, and aspirating, *and*

(ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, *or*

(iii)(A) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 110 gallons in size, or

(B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size.

(2) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

(3) A container or an inner liner removed from a container that has held an acute hazardous waste listed in §§261.31, 261.32, or 261.33(e) is empty if:

(i) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

(ii) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(iii) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

§ 261.3 Definition of hazardous waste.

(a) A solid waste, as defined in §261.2, is a hazardous waste if:

(1) It is not excluded from regulation as a hazardous waste under §261.4(b); and

(2) It meets any of the following criteria:

(i) It exhibits any of the characteristics of hazardous waste identified in subpart C of this part. However, any mixture of a waste from the extraction, beneficiation, and processing of ores and minerals excluded under §261.4(b)(7) and any other solid waste exhibiting a characteristic of hazardous waste under subpart C is a hazardous waste only if it exhibits a characteristic that would not have been exhibited by the excluded waste alone if such mixture had not occurred, or if it continues to exhibit any of the characteristics exhibited by the non-excluded wastes prior to mixture. Further, for the purposes of applying the Toxicity Characteristic to such mixtures, the mixture is also a hazardous waste if it exceeds the maximum concentration for any contaminant listed in table I to §261.24 that would not have been exceeded by the excluded waste alone if the mixture had not occurred or if it continues to exceed the maximum concentration for any contaminant exceeded by the nonexempt waste prior to mixture.

(ii) It is listed in subpart D of this part and has not been excluded from the lists in subpart D of this part under §§260.20 and 260.22 of this chapter.

(iii) [Reserved]

(iv) It is a mixture of solid waste and one or more hazardous wastes listed in subpart D of this part and has not been excluded from paragraph (a)(2) of this section under §§260.20 and 260.22, paragraph (g) of this section, or paragraph (h) of this section; however, the following mixtures of solid wastes and hazardous wastes listed in subpart D of this part are not hazardous wastes (except by application of paragraph (a)(2)(i) or (ii) of this section) if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewater at facilities which have eliminated the discharge of wastewater) and;

(A) One or more of the following solvents listed in §261.31—carbon tetrachloride, tetrachloroethylene, trichloroethylene—*Provided*, That the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 1 part per million; or

(B) One or more of the following spent solvents listed in §261.31—methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent

chlorofluorocarbon solvents—provided that the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 25 parts per million; or

(C) One of the following wastes listed in §261.32, provided that the wastes are discharged to the refinery oil recovery sewer before primary oil/water/solids separation—heat exchanger bundle cleaning sludge from the petroleum refining industry (EPA Hazardous Waste No. K050), crude oil storage tank sediment from petroleum refining operations (EPA Hazardous Waste No. K169), clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations (EPA Hazardous Waste No. K170), spent hydrotreating catalyst (EPA Hazardous Waste No. K171), and spent hydrorefining catalyst (EPA Hazardous Waste No. K172); or

(D) A discarded commercial chemical product, or chemical intermediate listed in §261.33, arising from *de minimis* losses of these materials from manufacturing operations in which these materials are used as raw materials or are produced in the manufacturing process. For purposes of this paragraph (a)(2)(iv)(D), “*de minimis*” losses include those from normal material handling operations (e.g., spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing; or

(E) Wastewater resulting from laboratory operations containing toxic (T) wastes listed in subpart D of this part, Provided, That the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pre-treatment system or provided the wastes, combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pre-treatment facility. Toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation; or

(F) One or more of the following wastes listed in §261.32—wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157)— Provided that the maximum weekly usage of formaldehyde, methyl chloride, methylene chloride, and triethylamine (including all amounts that can not be demonstrated to be reacted in the process, destroyed through treatment, or is recovered, i.e., what is discharged or volatilized) divided by the average weekly flow of process wastewater prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 parts per million by weight; or

(G) Wastewaters derived from the treatment of one or more of the following wastes listed in §261.32—organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156).—Provided, that the maximum concentration of formaldehyde, methyl chloride, methylene chloride, and triethylamine prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 milligrams per liter.

(v) *Rebuttable presumption for used oil.* Used oil containing more than 1000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in subpart D of part 261 of this chapter. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, to show that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix VIII of part 261 of this chapter).

(b) A solid waste which is not excluded from regulation under paragraph (a)(1) of this section becomes a hazardous waste when any of the following events occur:

(1) In the case of a waste listed in subpart D of this part, when the waste first meets the listing description set forth in subpart D of this part.

(2) In the case of a mixture of solid waste and one or more listed hazardous wastes, when a hazardous waste listed in subpart D is first added to the solid waste.

(3) In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in subpart C of this part.

(c) Unless and until it meets the criteria of paragraph (d) of this section:

(1) A hazardous waste will remain a hazardous waste.

(2)(i) Except as otherwise provided in paragraph (c)(2)(ii), (g) or (h) of this section, any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash emission control dust, or leachate (but not including precipitation run-off) is a hazardous waste. (However, materials that are reclaimed from solid wastes and that are used beneficially are not solid wastes and hence are not hazardous wastes under this provision unless the reclaimed material is burned for energy recovery or used in a manner constituting disposal.)

(ii) The following solid wastes are not hazardous even though they are generated from the treatment, storage, or disposal of a hazardous waste, unless they exhibit one or more of the characteristics of hazardous waste:

(A) Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (SIC Codes 331 and 332).

(B) Waste from burning any of the materials exempted from regulation by §261.6(a)(3)(iii) and (iv).

(C)(1) Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062 or F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in paragraphs (6), (7), and (13) of the definition for "Industrial furnace" in 40 CFR 260.10), that are disposed in subtitle D units, provided that these residues meet the generic exclusion levels identified in the tables in this paragraph for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes. Persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements.

| Constituent | Maximum for any single composite sample_TCLP (mg/L) |
|--|---|
| ----- | |
| Generic exclusion levels for K061 and K062 nonwastewater HTMR residues | |
| ----- | |
| Antimony..... | 0.10 |
| Arsenic..... | 0.50 |
| Barium..... | 7.6 |
| Beryllium..... | 0.010 |
| Cadmium..... | 0.050 |
| Chromium (total)..... | 0.33 |
| Lead..... | 0.15 |
| Mercury..... | 0.009 |
| Nickel..... | 1.0 |
| Selenium..... | 0.16 |
| Silver..... | 0.30 |
| Thallium..... | 0.020 |
| Zinc..... | 70.0 |
| ----- | |
| Generic exclusion levels for F006 nonwastewater HTMR residues | |
| ----- | |
| Antimony..... | 0.10 |
| Arsenic..... | 0.50 |

| | |
|------------------------------|-------|
| Barium..... | 7.6 |
| Beryllium..... | 0.010 |
| Cadmium..... | 0.050 |
| Chromium (total)..... | 0.33 |
| Cyanide (total) (mg/kg)..... | 1.8 |
| Lead..... | 0.15 |
| Mercury..... | 0.009 |
| Nickel..... | 1.0 |
| Selenium..... | 0.16 |
| Silver..... | 0.30 |
| Thallium..... | 0.020 |
| Zinc..... | 70.0 |

(2) A one-time notification and certification must be placed in the facility's files and sent to the EPA region or authorized state for K061, K062 or F006 HTMR residues that meet the generic exclusion levels for all constituents and do not exhibit any characteristics that are sent to subtitle D units. The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the subtitle D unit receiving the waste changes. However, the generator or treater need only notify the EPA region or an authorized state on an annual basis if such changes occur. Such notification and certification should be sent to the EPA region or authorized state by the end of the calendar year, but no later than December 31. The notification must include the following information: The name and address of the subtitle D unit receiving the waste shipments; the EPA Hazardous Waste Number(s) and treatability group(s) at the initial point of generation; and, the treatment standards applicable to the waste at the initial point of generation. The certification must be signed by an authorized representative and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

(D) Biological treatment sludge from the treatment of one of the following wastes listed in §261.32—organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156), and wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157).

(E) Catalyst inert support media separated from one of the following wastes listed in §261.32—Spent hydrotreating catalyst (EPA Hazardous Waste No. K171), and Spent hydrorefining catalyst (EPA Hazardous Waste No. K172).

(d) Any solid waste described in paragraph (c) of this section is not a hazardous waste if it

meets the following criteria:

(1) In the case of any solid waste, it does not exhibit any of the characteristics of hazardous waste identified in subpart C of this part. (However, wastes that exhibit a characteristic at the point of generation may still be subject to the requirements of part 268, even if they no longer exhibit a characteristic at the point of land disposal.)

(2) In the case of a waste which is a listed waste under subpart D of this part, contains a waste listed under subpart D of this part or is derived from a waste listed in subpart D of this part, it also has been excluded from paragraph (c) of this section under §§260.20 and 260.22 of this chapter.

(e) [Reserved]

(f) Notwithstanding paragraphs (a) through (d) of this section and provided the debris as defined in part 268 of this chapter does not exhibit a characteristic identified at subpart C of this part, the following materials are not subject to regulation under 40 CFR parts 260, 261 to 266, 268, or 270:

(1) Hazardous debris as defined in part 268 of this chapter that has been treated using one of the required extraction or destruction technologies specified in Table 1 of §268.45 of this chapter; persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements; or

(2) Debris as defined in part 268 of this chapter that the Regional Administrator, considering the extent of contamination, has determined is no longer contaminated with hazardous waste.

(g)(1) A hazardous waste that is listed in subpart D of this part solely because it exhibits one or more characteristics of ignitability as defined under §261.21, corrosivity as defined under §261.22, or reactivity as defined under §261.23 is not a hazardous waste, if the waste no longer exhibits any characteristic of hazardous waste identified in subpart C of this part.

(2) The exclusion described in paragraph (g)(1) of this section also pertains to:

(i) Any mixture of a solid waste and a hazardous waste listed in subpart D of this part solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (a)(2)(iv) of this section; and

(ii) Any solid waste generated from treating, storing, or disposing of a hazardous waste listed in subpart D of this part solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (c)(2)(i) of this section.

(3) Wastes excluded under this section are subject to part 268 of this chapter (as

applicable), even if they no longer exhibit a characteristic at the point of land disposal.

(4) Any mixture of a solid waste excluded from regulation under §261.4(b)(7) and a hazardous waste listed in subpart D of this part solely because it exhibits one or more of the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (a)(2)(iv) of this section is not a hazardous waste, if the mixture no longer exhibits any characteristic of hazardous waste identified in subpart C of this part for which the hazardous waste listed in subpart D of this part was listed.

(h)(1) Hazardous waste containing radioactive waste is no longer a hazardous waste when it meets the eligibility criteria and conditions of 40 CFR part 266, Subpart N ("eligible radioactive mixed waste").

(2) The exemption described in paragraph (h)(1) of this section also pertains to:

(i) Any mixture of a solid waste and an eligible radioactive mixed waste; and

(ii) Any solid waste generated from treating, storing, or disposing of an eligible radioactive mixed waste.

(3) Waste exempted under this section must meet the eligibility criteria and specified conditions in 40 CFR 266.225 and 40 CFR 266.230 (for storage and treatment) and in 40 CFR 266.310 and 40 CFR 266.315 (for transportation and disposal). Waste that fails to satisfy these eligibility criteria and conditions is regulated as hazardous waste.

§ 261.5 Special requirements for hazardous waste generated by conditionally exempt small quantity generators.

(a) A generator is a conditionally exempt small quantity generator in a calendar month if he generates no more than 100 kilograms of hazardous waste in that month.

(b) Except for those wastes identified in paragraphs (e), (f), (g), and (j) of this section, a conditionally exempt small quantity generator's hazardous wastes are not subject to regulation under parts 262 through 266, 268, and parts 270 and 124 of this chapter, and the notification requirements of section 3010 of RCRA, provided the generator complies with the requirements of paragraphs (f), (g), and (j) of this section.

(c) When making the quantity determinations of this part and 40 CFR part 262, the generator must include all hazardous waste that it generates, except hazardous waste that:

(1) Is exempt from regulation under 40 CFR 261.4(c) through (f), 261.6(a)(3), 261.7(a)(1), or 261.8; or

(2) Is managed immediately upon generation only in on-site elementary neutralization units, wastewater treatment units, or totally enclosed treatment facilities as defined in 40 CFR 260.10; or

(3) Is recycled, without prior storage or accumulation, only in an on-site process subject to regulation under 40 CFR 261.6(c)(2); or

(4) Is used oil managed under the requirements of 40 CFR 261.6(a)(4) and 40 CFR part 279; or

(5) Is spent lead-acid batteries managed under the requirements of 40 CFR part 266, subpart G; or

(6) Is universal waste managed under 40 CFR 261.9 and 40 CFR part 273.

(d) In determining the quantity of hazardous waste generated, a generator need not include:

(1) Hazardous waste when it is removed from on-site storage; or

(2) Hazardous waste produced by on-site treatment (including reclamation) of his hazardous waste, so long as the hazardous waste that is treated was counted once; or

(3) Spent materials that are generated, reclaimed, and subsequently reused on-site, so long as such spent materials have been counted once.

(e) If a generator generates acute hazardous waste in a calendar month in quantities greater than set forth below, all quantities of that acute hazardous waste are subject to full regulation under parts 262 through 266, 268, and parts 270 and 124 of this chapter, and the notification requirements of section 3010 of RCRA:

(1) A total of one kilogram of acute hazardous wastes listed in §§261.31, 261.32, or 261.33(e).

(2) A total of 100 kilograms of any residue or contaminated soil, waste, or other debris resulting from the clean-up of a spill, into or on any land or water, of any acute hazardous wastes listed in §§261.31, 261.32, or 261.33(e).

[Comment: "Full regulation" means those regulations applicable to generators of greater than 1,000 kg of non-acutely hazardous waste in a calendar month.]

(f) In order for acute hazardous wastes generated by a generator of acute hazardous wastes in quantities equal to or less than those set forth in paragraph (e)(1) or (2) of this section to be excluded from full regulation under this section, the generator must comply with the following requirements:

(1) Section 262.11 of this chapter;

(2) The generator may accumulate acute hazardous waste on-site. If he accumulates at any time acute hazardous wastes in quantities greater than those set forth in paragraph (e)(1) or (e)(2) of this section, all of those accumulated wastes are subject to regulation under parts 262 through

266, 268, and parts 270 and 124 of this chapter, and the applicable notification requirements of section 3010 of RCRA. The time period of §262.34(a) of this chapter, for accumulation of wastes on-site, begins when the accumulated wastes exceed the applicable exclusion limit;

(3) A conditionally exempt small quantity generator may either treat or dispose of his acute hazardous waste in an on-site facility or ensure delivery to an off-site treatment, storage, or disposal facility, either of which, if located in the U.S., is:

(i) Permitted under part 270 of this chapter;

(ii) In interim status under parts 270 and 265 of this chapter;

(iii) Authorized to manage hazardous waste by a State with a hazardous waste management program approved under part 271 of this chapter;

(iv) Permitted, licensed, or registered by a State to manage municipal solid waste and, if managed in a municipal solid waste landfill is subject to Part 258 of this chapter;

(v) Permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste and, if managed in a non-municipal non-hazardous waste disposal unit after January 1, 1998, is subject to the requirements in §§257.5 through 257.30 of this chapter; or

(vi) A facility which:

(A) Beneficially uses or reuses, or legitimately recycles or reclaims its waste; or

(B) Treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation; or

(vii) For universal waste managed under part 273 of this chapter, a universal waste handler or destination facility subject to the requirements of part 273 of this chapter.

(g) In order for hazardous waste generated by a conditionally exempt small quantity generator in quantities of less than 100 kilograms of hazardous waste during a calendar month to be excluded from full regulation under this section, the generator must comply with the following requirements:

(1) Section 262.11 of this chapter;

(2) The conditionally exempt small quantity generator may accumulate hazardous waste on-site. If he accumulates at any time more than a total of 1000 kilograms of his hazardous wastes, all of those accumulated wastes are subject to regulation under the special provisions of part 262 applicable to generators of between 100 kg and 1000 kg of hazardous waste in a calendar month as well as the requirements of parts 263 through 266, 268, and parts 270 and 124 of this chapter, and the applicable notification requirements of section 3010 of RCRA. The time period of §262.34(d) for accumulation of wastes on-site begins for a conditionally exempt small quantity generator when the accumulated wastes exceed 1000 kilograms;

(3) A conditionally exempt small quantity generator may either treat or dispose of his hazardous waste in an on-site facility or ensure delivery to an off-site treatment, storage or disposal facility, either of which, if located in the U.S., is:

(i) Permitted under part 270 of this chapter;

(ii) In interim status under parts 270 and 265 of this chapter;

(iii) Authorized to manage hazardous waste by a State with a hazardous waste management program approved under part 271 of this chapter;

(iv) Permitted, licensed, or registered by a State to manage municipal solid waste and, if managed in a municipal solid waste landfill is subject to Part 258 of this chapter;

(v) Permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste and, if managed in a non-municipal non-hazardous waste disposal unit after January 1, 1998, is subject to the requirements in §§257.5 through 257.30 of this chapter; or

(vi) A facility which:

(A) Beneficially uses or reuses, or legitimately recycles or reclaims its waste; or

(B) Treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation; or

(vii) For universal waste managed under part 273 of this chapter, a universal waste handler or destination facility subject to the requirements of part 273 of this chapter.

(h) Hazardous waste subject to the reduced requirements of this section may be mixed with non-hazardous waste and remain subject to these reduced requirements even though the resultant mixture exceeds the quantity limitations identified in this section, unless the mixture meets any of the characteristics of hazardous waste identified in subpart C.

(i) If any person mixes a solid waste with a hazardous waste that exceeds a quantity exclusion level of this section, the mixture is subject to full regulation.

(j) If a conditionally exempt small quantity generator's wastes are mixed with used oil, the mixture is subject to part 279 of this chapter. Any material produced from such a mixture by processing, blending, or other treatment is also so regulated.

9VAC20-80-650. Wastes containing polychlorinated biphenyls (PCBs).

A. Definitions. The definitions provided in this subsection are derived from definitions in 40 CFR 761.3 and are provided here for the convenience of the regulated community. The definitions here have been altered from those appearing in the federal regulation in order to simplify the definitions to indicate the specific types of items that can or cannot be considered for disposal in a sanitary landfill. These definitions are not identical to the federal definitions. All terms that are used in this section and that are not defined in this subsection shall have the same meaning as in Part I (9VAC20-80-10 et seq.) of this chapter or 40 CFR 761.3 as applicable.

Nothing in this section shall be deemed to allow management other than as required by federal law and regulation.

"PCB bulk product waste" means:

1. Nonliquid bulk wastes or debris from the demolition of buildings and other man-made structures manufactured, coated, or serviced with PCBs. PCB bulk product waste does not include debris from the demolition of buildings or other man-made structures that is contaminated by spills from regulated PCBs which have not been disposed of, decontaminated, or otherwise cleaned in accordance with 40 CFR Part 761 Subpart D.
2. PCB containing wastes from the shredding of automobiles, household appliances, or industrial appliances where PCB small capacitors have been removed (shredder fluff).
3. Plastics (such as plastic insulation from wire or cable; radio, television and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes waxes or similar coatings or sealants; Galbestos.

"PCB cleanup waste" means nonliquid cleaning materials and personal protective equipment at any concentration including nonporous surfaces and other nonliquid materials such as rags, gloves, booties, other disposable personal protective equipment, and similar materials.

"PCB-contaminated electrical equipment" means any electrical equipment including, but not limited to, transformers (including those used in railway locomotives and self-propelled cars), capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, and cable, that contains PCBs at concentrations of ≥ 50 ppm and < 500 ppm in the contaminating fluid. In the absence of liquids, electrical equipment is PCB-Contaminated if it has PCBs at > 10 ig/100 cm² and < 100 ig/100 cm² as measured by a standard wipe test (as defined in 40 CFR 761.123) of a non-porous surface.

"PCB remediation waste" means soil, rags, and other debris generated as a result of any PCB spill cleanup, including, but not limited to:

1. Environmental media containing PCBs, such as soil and gravel; dredged materials, such as sediments, settled sediment fines, and aqueous decantate from sediment.
2. Sewage sludge containing < 50 ppm PCBs; PCB sewage sludge; commercial or industrial sludge contaminated as the result of a spill of PCBs including sludges located in or removed from any pollution control device; aqueous decantate from an industrial sludge.
3. Buildings and other man-made structures, such as concrete or wood floors or walls contaminated from a leaking PCB or PCB-Contaminated transformer, porous surfaces and nonporous surfaces.

B. Solid wastes containing PCB concentrations between 1.0 ppm and 50 ppm are restricted to disposal in sanitary landfills or industrial waste landfills with leachate collection, liners, and

appropriate ground water monitoring as required in Part V (9VAC20-80-240 et seq.) of this chapter, except as allowed in subsection C of this section.

C. Other PCB wastes.

1. PCB bulk product wastes with concentrations above 50 ppm may be approved for disposal by the director on a case-by-case basis. Submissions prepared for the director's decision will include a description of the PCB waste indicating the material proposed for disposal and how the federal regulations under 40 CFR 761.62 apply to the material. Consistent with the procedures in 40 CFR Part 761, PCB bulk product wastes that are shredder fluff or plastics as defined above need not be tested for PCBs prior to disposal. However, other PCB bulk product waste that has been sampled in accordance with the protocols set out in 40 CFR Part 761 Subpart R and may be considered for disposal if the waste leaches PCBs at less than 10 %v(508)%E2%v/L measured using a procedure used to simulate leachate generation. Requests for a director's determination must come from a permitted landfill. Alternatively, a landfill may modify its permit to incorporate a special waste acceptance plan which addresses PCB wastes. Facilities requesting to receive PCB bulk product waste must also meet the following provisions:

a. The unit to receive the waste must have a liner system meeting the requirements of 9VAC20-80-250 B 9 or an alternate liner approved under the provisions of 9VAC20-80-780.

b. The unit to receive the waste must have a leachate collection system consistent with 9VAC20-80-290.

c. Ground water monitoring may not have detected Table 5.1 constituents above the maximum contaminant levels (MCLs) promulgated under §141.2 of the Safe Drinking Water Act (40 CFR Part 141 Subpart B) during the active life of the facility.

2. Consistent with 40 CFR Part 761, PCB articles such as PCB-contaminated electrical equipment, PCB hydraulic machines, or pipe that have previously contained PCB, which have been drained, may be disposed of in a sanitary landfill with leachate collection, liners, and appropriate ground water monitoring as required in Part V of this chapter. PCB testing, draining and other preparation for disposal of the equipment, if required, will be consistent with 40 CFR Part 761.

D. Consistent with 40 CFR Part 761, PCB remediation waste with PCB concentrations =50 ppm may not be disposed of in a sanitary landfill. PCB remediation waste includes but is not limited to items such as soil, sediments, dredged materials, muds, and sludge. PCB cleanup waste as defined above may be disposed of in a sanitary landfill with liners and a leachate collection system.

9VAC20-120-10. Definitions.

"Regulated medical waste" means solid wastes defined to be regulated medical wastes in Part III (9VAC20-120-80 et seq.) of this chapter.

9VAC20-120-140. Characteristics of regulated medical waste.

A solid waste is a regulated medical waste if it meets either of the two criteria of this section:

1. Any solid waste, as defined in this chapter is a regulated medical waste if it is suspected by the health care professional in charge of being capable of producing an infectious disease in humans. A solid waste shall be considered to be capable of producing an infectious disease if it has been or is likely to have been contaminated by an organism likely to be pathogenic to healthy humans, such organism is not routinely and freely available in the community, and if such organism has a significant probability of being present in sufficient quantities and with sufficient virulence to transmit disease. If the exact cause of a patient's illness is unknown, but the health care professional in charge suspects a contagious disease is the cause, the likelihood of pathogen transmission shall be assessed based on the pathogen suspected of being the cause of the illness.

2. Any solid waste that is not excluded from regulation is a regulated medical waste if it is listed in 9VAC20-120-150.

9VAC20-120-150. Lists of controlled regulated medical wastes.

In addition to wastes described by the characteristics set forth in 9VAC20-120-140, each solid waste or solid waste stream on the following lists is subject to this chapter, unless exempted in 9VAC20-120-120 or excluded in 9VAC20-120-130.

1. Cultures and stock of microorganisms and biologicals. Discarded cultures, stocks, specimens, vaccines and associated items likely to have been contaminated by them are regulated medical wastes if they are likely to contain organisms likely to be pathogenic to healthy humans. Discarded etiologic agents are regulated medical waste. Wastes from the production of biologicals and antibiotics likely to have been contaminated by organisms likely to be pathogenic to healthy humans are regulated medical wastes.

2. Human blood and human body fluids. Wastes consisting of human blood or human body fluids or items contaminated with human blood or human body fluids.

3. Tissues and other anatomical wastes. All human anatomical wastes and all wastes that are human tissues, organs, or body parts are regulated medical waste.

4. Sharps. Sharps likely to be contaminated with organisms that are pathogenic to healthy humans, and all needles, syringes with attached needles, suture needles, and scalpels are regulated medical wastes. This includes sharps generated through veterinary practice.

5. Animal carcasses, body parts, bedding and related wastes. When animals are intentionally infected with organisms likely to be pathogenic to healthy humans for the purposes of research, in vivo testing, production of biological materials or any other reason; the animal carcasses, body parts, bedding material and all other wastes likely to have been contaminated are regulated medical wastes when discarded, disposed of or placed in accumulated storage.

6. Any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill of any regulated medical waste.

7. Any solid waste contaminated by or mixed with regulated medical waste.

Appendix II Permits

Air

PSD permit
mNSR permit
Title V Operating Permit

Exp. Date: None
Exp Date: None
Exp. Date: 02/28/07 (Under Permit Shield)

Water

SIU Permit
VPDES Permit

Exp. Date: 01/31/2012
Exp. Date: 06/30/2014

Solid Waste

Solid Waste Permit By Rule

Exp. Date: None

APPENDIX III

FORMS

- 1. Material Characterization Form (MCF)**
- 2. Material Characterization Form (Form 1G-General Information)**
- 3. Addendum to Form 1G**
- 4. Virginia Destination Addendum Form for Reporting the Presence of Air Pollutants (HAP's)**
- 5. Pre-shipment Notification/Certificate of Destruction**

Attachment D

Calculations comparing HCl emissions limits

Per MWC unit (unit heat input capacity 121.8 MMBtu/hr):

BACT limit (Condition 10 of PSD permit):

0.34 lb/MMBtu

$$\frac{0.34 \text{ lb HCl}}{\text{MMBtu}} * \frac{121.8 \text{ MMBtu}}{\text{hr}} = 41.4 \frac{\text{lbs HCl}}{\text{hr}}$$

Rule 4-54 limit (based on 40 CFR 60 Subpart Cb) (9 VAC 5-40-8030):

29 ppmvd or 95% reduction by wt or vol

$$\frac{C_{\text{ppmvd}} * MW * Q_{\text{dscfm}} * \frac{60 \text{ min}}{\text{hr}}}{(V_{\text{ideal}} * 10^6)} = \frac{\text{lbs}}{\text{hr}}$$

$MW_{\text{HCl}} = 36.45 \text{ lbs/lbmol}$

$Q_{\text{dscfm}} = 60,025 \text{ ft}^3/\text{min}$ (derived from acfm in application of 86,400 acfm at 300 °F)

$V_{\text{ideal}} = \text{specific molar volume of air at } 68 \text{ °F} = 385.3 \text{ dscf air/lb-mol air}$

So

$$\frac{\frac{29 \text{ lbmol HCl}}{\text{MMlbmol air}} * \frac{36.45 \text{ lb HCl}}{\text{lbmol HCl}} * \frac{60,025 \text{ ft}^3 \text{ air}}{\text{min}} * \frac{60 \text{ min}}{\text{hr}}}{\frac{385.3 \text{ ft}^3}{\text{lbmol air}} * 10^6} = 9.8 \frac{\text{lbs HCl}}{\text{hr}}$$