



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### TIDEWATER REGIONAL OFFICE

5636 Southern Boulevard, Virginia Beach, Virginia 23462

(757) 518-2000 Fax (757) 518-2009

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Doug Domenech  
Secretary of Natural Resources

David K. Paylor  
Director

Maria R. Nold  
Regional Director

### STATEMENT OF LEGAL AND FACTUAL BASIS

Wheelabrator Portsmouth, Inc.  
3809 Elm Avenue,  
Portsmouth, Virginia  
Permit No.: TRO- 61018

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, Wheelabrator Portsmouth, Inc. has applied for a Title V Operating Permit for its Portsmouth facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Permit Writer:

\_\_\_\_\_  
Laura D. Corl  
(757) 518-2178

Date: October 11, 2013

Regional Air Permits  
Manager:

\_\_\_\_\_  
Troy D. Breathwaite

Date: October 11, 2013

Regional Director:

\_\_\_\_\_  
Maria R. Nold

Date: October 11, 2013

## I. FACILITY INFORMATION

### **Permittee**

Wheelabrator Portsmouth, Inc.  
3809 Elm Avenue  
Portsmouth, Virginia 23704-7101

### **Facility**

Wheelabrator Portsmouth Refused Derived Fuel Processing Facility & Waste to Energy Plant  
3809 Elm Avenue  
Portsmouth, Virginia 23704-7101

County-Plant Identification Number: 51-740-00078

*SIC Codes: 9511 (Solid Waste Management), 4953 (Refuse Systems), 4911 (Electrical Services), and 4961 (Steam Supply)*

*NAICS Codes: 562213 and 562219 (Waste management), 221330 (Steam Generation), 221119 (Other electrical generation), and 924110 (Administration)*

### **A. Facility Description:**

Waste is received on the Refuse Derived Fuel (RDF) plant tipping floor and separated into two piles: waste that can be processed and waste that cannot be processed. Any large waste that is processable is then diverted to the portable bulky waste shredder to be shredded to a manageable size. This waste is then introduced back on the tipping floor. All non-processable waste is sent offsite for proper disposal. All processable waste is then introduced to three process lines using a crane to place material on a conveyor belt. Sorting, sizing and separation of aluminum and ferrous materials takes place through a series of hand picking stations, crane picking stations, shredders and magnets on each process line. Waste is then loaded onto the RDF transfer conveyor where it is conveyed to the Waste to Energy (WTE) plant for combustion.

**Primary Operating Scenario:** The WTE plant consists of four combustion trains in which refuse derived fuel (RDF), Non-Hazardous Solid Waste (liquid), or oil is combusted to produce steam and electricity. The primary fuels burned are RDF and Non-Hazardous Solid Waste with No. 2 fuel oil being used during startup only. The four combustion trains are independent but can operate simultaneously. Each combustion train consists of a boiler, a spray dryer absorber (SDA), and a fabric filter (FF). The utilization of the SDA and FF, as well as good combustion practices (GCP) reduces the levels of Municipal Waste Combustor (MWC) organics (dioxins/furans), MWC acid gases (sulfur dioxide and hydrogen chloride), MWC metals (particulate matter, opacity, cadmium, lead, and mercury), and Carbon Monoxide prior to exhausting through the stack.

**Alternate Operating Scenario:** This operating scenario includes the receiving, storing and the handling of coal. Coal has not been used at this facility since 2002 and its use has been phased out; meaning that the boilers are no longer capable of firing coal and no coal is stored on site. However, the underlying PSD permit allows its use so all references to coal (both firing and handling) have been separated into an alternate operating scenario in this permit. All pollution control equipment listed in the primary operating scenario would be included in this operating scenario if they were to operate using this scenario.

In addition, the facility operates a diesel-fired standby generator, an auxiliary boiler, two No. 2 fuel oil storage tanks, a lime silo, an ash conveyor (with negligible emissions), and truck traffic, as well as a number of insignificant activities.

This facility is a Title V major source of NO<sub>x</sub>, CO, SO<sub>2</sub>, PM, PM<sub>10</sub>, VOC and HCl. This source is located in an attainment area for all pollutants, and is a PSD major source. The facility is currently permitted under one PSD permit issued March 26, 1984, last amended on August 20, 2003, and one Minor NSR Permit issued on January 8, 1985, last amended on November 29, 2011.

## II. COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. 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.

## III. EMISSIONS INVENTORY

A copy of the 2011 emissions inventory is attached. Emissions are summarized in the following tables.

2011 Facility Actual Criteria Pollutant Emissions

Emission Units	2011 Criteria Pollutant Emission in Tons/Year						
	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC
044	295.3	138.7	36.7	3.28	3.24	0.04	0.006
045	312.1	146.8	38.0	7.58	7.55	0.04	0.006
046	241.3	132.2	28.6	6.58	6.55	0.06	0.007
047	277.5	135.5	40.4	6.32	6.29	0.06	0.007
049	0.73	0.15	0.22	0.10	0.070	0.05	0.006
100	0.79	0.2	0.009	0.06	0.056	0.06	0.042
200/201A				0.23	0.23		
202				0.08	0.08		
112				0.03	0.02		
<b>Total</b>	<b>1127</b>	<b>553.6</b>	<b>143.9</b>	<b>24.3</b>	<b>24.1</b>	<b>0.3</b>	<b>0.07</b>

2011 Facility Hazardous Air Pollutant Emissions

Emission Units	2011 Hazardous Air Pollutant Emission in Tons/Yr		
	HCL	HF	PB
044	4.47	0.30	0.014
045	10.47	0.30	0.020
046	10.04	0.20	0.025
047	4.23	0.20	0.014
<b>Total</b>	<b>29.2</b>	<b>1.0</b>	<b>0.073</b>

#### IV. 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
<b>Fuel Burning Equipment</b>							
044	001	Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor Combustion Engineering, Inc. Type VU-40 Boiler	49,400 lbs RDF/hr or 237 mmBtu/hr on coal 180,000 lbs steam/hr 625 gal/hr distillate oil	Spray Dryer Absorber & Fabric Filter	SDA-1	MWC Acid Gases SO <sub>2</sub>	8/20/03
					FF-1	MWC Metals PM/PM <sub>10</sub>	
045	002	Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor Combustion Engineering, Inc. Type VU-40 Boiler	49,400 lbs RDF/hr or 237 mmBtu/hr on coal 180,000 lbs steam/hr 625 gal/hr distillate oil	Spray Dryer Absorber & Fabric Filter	SDA-2	MWC Acid Gases SO <sub>2</sub>	8/20/03
					FF-2	MWC Metals PM/PM <sub>10</sub>	
046	003	Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor Combustion Engineering, Inc. Type VU-40 Boiler	49,400 lbs RDF/hr or 237 mmBtu/hr on coal 180,000 lbs steam/hr 625 gal/hr distillate oil	Spray Dryer Absorber & Fabric Filter	SDA-3	MWC Acid Gases SO <sub>2</sub>	8/20/03
					FF-3	MWC Metals PM/PM <sub>10</sub>	
047	004	Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor Combustion Engineering, Inc. Type VU-40 Boiler	49,400 lbs RDF/hr or 237 mmBtu/hr on coal 180,000 lbs steam/hr 625 gal/hr distillate oil	Spray Dryer Absorber & Fabric Filter	SDA-4	MWC Acid Gases SO <sub>2</sub>	8/20/03
					FF-4	MWC Metals PM/PM <sub>10</sub>	
049	049	English Boiler, Inc., D-style Water Tube NSPS Db and MACT DDDDD	142 mmBtu/hr	-	-	-	8/20/03
100	100	Morrison-Knudsen Peak Shaver Generator Diesel Engine - Model #20-645-F4B	2500 KW	-	-	-	8/20/03
128	128	WTE Fire Pump Diesel Engine	290 HP	-	-	-	-
207	207	RDF Fire Pump Diesel Engine	290 HP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
<b>Coal Handling – Operating Scenario</b>							
048	-	Open Coal Storage	15,000 ton	Wet Suppression System (WSS)	WSS	PM/PM <sub>10</sub>	8/20/03
101	101	Coal conveying system, coal unloading area	100 tons/hr	Fabric Filter	FF-101	PM/PM <sub>10</sub>	8/20/03
102	102	Coal conveying system, transfer point No. 1	100 tons/hr	Fabric Filter	FF-102	PM/PM <sub>10</sub>	8/20/03
103	103	Coal conveying system, transfer point No. 2	100 tons/hr	Fabric Filter	FF-103	PM/PM <sub>10</sub>	8/20/03
104	104	Coal conveying system, transfer to coal silo	100 tons/hr	Fabric Filter	FF-104	PM/PM <sub>10</sub>	8/20/03
105	105	Coal conveying system, transfer to conical for boiler No. 1	100 tons/hr	Fabric Filter	FF-105	PM/PM <sub>10</sub>	8/20/03
106	106	Coal conveying system, transfer to conical for boiler No. 2	100 tons/hr	Fabric Filter	FF-106	PM/PM <sub>10</sub>	8/20/03
107	107	Coal conveying system, transfer to conical for boiler No. 3	100 tons/hr	Fabric Filter	FF-107	PM/PM <sub>10</sub>	8/20/03
108	108	Coal conveying system, transfer to conical for boiler No. 4	100 tons/hr	Fabric Filter	FF-108	PM/PM <sub>10</sub>	8/20/03
<b>RDF Plant Emission Units</b>							
200	-	Tipping Floor	200 ton/hr	Buffalo Filters (rolled)	B1-5	PM/PM <sub>10</sub>	11/29/11
201A	201A	Bulky Waste Shredder DW 3060K, Buffalo Slow Speed	100 ton/hr	Fabric Filter	FF-201	PM/PM <sub>10</sub>	11/29/11
202a1	202a1	RDF Process Line A Shredder	200 ton/hr	Fabric Filter	FF-202A1	PM/PM <sub>10</sub>	11/29/11
202b1	202b1	RDF Process Line B Shredder	200 ton/hr	Fabric Filter	FF-202B1	PM/PM <sub>10</sub>	11/29/11
202c1	202c1	RDF Process Line C Shredder	200 ton/hr	Fabric Filter	FF-202C1	PM/PM <sub>10</sub>	11/29/11
203	203	RDF conveyor	200 ton/hr	-	-	-	11/29/11
206	-	RDF Plant Truck Traffic	200 trucks/day	-	-	-	8/20/03
251	251	RDF Ultra Low Sulfur Diesel Fuel Oil Storage Tank	3,000 gallons	-	-	-	-
<b>Miscellaneous WTE Emission Units</b>							
109	109	WTE No. 2 fuel oil storage tank	55,000 gallons	-	-	-	-
110	110	WTE No. 2 fuel oil storage tank	55,000 gallons	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
111	111	WTE Ash conveying system to truck discharge location	30 ton/hr	Ash (Wet) Conditioning System	-	-	-
112	112	WTE Lime silo	125 ton	Fabric Filter	FF-112	PM/PM <sub>10</sub>	8/20/03
113	-	WTE Plant Truck Traffic	25 trucks/day	-	-	-	8/20/03
133	133	WTE Permanent 'Helper' Cooling Tower SPX Technologies, Model: NC 8414WAS8	1.5 MGal/hr				
134	134	WTE 'Original' Cooling Tower Composite Cooling Solutions, Model, FM-4FT-3042-200-P6IL	2.46 MGal/hr				

## V. Definitions and Clarifications

This section has been added to the permit to help assist both the facility and DEQ in making sure Article 54 requirements are understood by both the facility and DEQ.

## VI. Waste to Energy Boiler Requirements - Primary Operating Scenario

Firing the boilers on Municipal Waste, Refuse Derived Fuel (RDF), Non Hazardous Solid Waste and No. 2 Fuel oil. The applicable emission units are: Units 044, 045, 046 and 047

### A. Limitations

There are no federal regulations applicable to the WTE boilers in this operating scenario.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5 Chapter 40	Article 54: Large Municipal Waste Combustors
9 VAC 5 Chapter 50	Part I: New and Modified Stationary Sources
9 VAC 5 Chapter 50	Part II: Article 1: Visible Emissions and Fugitive Dust/Emissions
9 VAC 5 Chapter 50	Part II: Article 2 - Odorous emissions
9 VAC 5 Chapter 50	Part II: Article 4 - Stationary sources
9 VAC 5 Chapter 80	Article 1: Part I: Permits for New and Modified Sources
9 VAC 5 Chapter 80	Article 2: Permit Program Fees for Stationary Sources
9 VAC 5 Chapter 80	Article 3: Federal (Title V) Operating Permits for Acid Rain (Title IV) Sources
9 VAC 5 Chapter 80	Article 4: Insignificant Activities
9 VAC 5 Chapter 80	Article 6: Permits for New and Modified Stationary Sources
9 VAC 5 Chapter 80	Article 8: Permits for Major Stationary Sources and Major Modifications Locating in Prevention of Significant Deterioration Areas
9 VAC 5 Chapter 80	Article 10: Permit Application Fees for Stationary Sources
9 VAC 5 Chapter 80	Article 11: Annual Permit Maintenance Fees for Stationary Sources
9 VAC 5 Chapter 85	Permits For Stationary Sources of Pollutants Subject To Regulation (Greenhouse Gas Tailoring)
9 VAC 5 Chapter 170	General Administration

This part of the facility was originally permitted in 1977 to construct 3 boilers each rated at 284 mmBtu/hr. Prior to construction, in 1979, they increased the rating of each boiler to 316.9 mmBtu/hr and then later the same year they requested another increase in size to 330 mmBtu/hr due to steam demands at Norfolk Naval Shipyard. In 1984, they received a PSD permit for 4 boilers each rated at less than 250 mmBtu/hr. In 1989, the permit was amended again to add No. 2 fuel oil as an approved fuel for start-ups and as a back-up fuel for the boilers. In 1991, the permit was amended to incorporate some documents to the document list. In 1998 the requirements of NSPS Cb were added to the permit because Virginia had not incorporated this regulation into its SIP at that time. Another amendment was made to the permit in 1999 to add lb/mmBtu emission limits for CO, NO<sub>x</sub> and SO<sub>2</sub>. Later in 1999, SPSA, who had been running the boilers for the Navy, purchased all the boiler operations from the Navy, so the permit was re-opened to change the name and add all the units that were currently on-site to the one permit. This made the Waste to Energy boilers a support facility to the Navy under PSD regulations, so the combined facilities are considered a single source for PSD evaluations. They also added an auxiliary boiler and a peaker generator at the same time. In 2003, it was discovered that they were also burning liquid solid waste, also known as Non-Hazardous Solid Waste, so the permit was amended to include this as an approved fuel for the boilers as well. In 2009, their Title V permit was amended to reflect the Virginia regulation requirements (9 VAC 5-40, Article 54) that pulled in the emission guidelines of NSPS Cb. In 2010, Wheeler purchased the RDF operations and the Waste to Energy operations from SPSA.

The waste to energy (WTE) boilers are subject to 9 VAC 5 Chapter 40, Article 54: large municipal waste combustors. Article 54 codifies in the Virginia Regulations the emission guidelines issued by EPA (40 CFR Part 60, Subpart Cb) as part of Section 111(d) and 129 of the Clean Air Act. This rule includes emission standards for nine pollutants (PM, SO<sub>2</sub>, NO<sub>x</sub>, CO, Cd, Pb, Hg, HCl, Dioxin/Furan) and the monitoring, recordkeeping and reporting to show compliance with the emission limitations. It also includes standards on the training of operators and annual refresher training of operators.

With this renewal, there are two different operating scenarios for these municipal waste combustor boilers. The primary operating scenario, includes the combustion of municipal waste as the primary fuel and the use of distillate oil to start up the boilers and as needed to supplement RDF combustion during transient operating periods or upset conditions in the boilers. Additionally the RDF boilers can combust only distillate oil for steam generation to meet the steam demand of the Norfolk Naval Shipyard. The Alternate Operating Scenario includes the handling and firing of coal as another source of fuel.

In the Primary Operating Scenario section of the permit, all the requirements to meet 9 VAC 5-40 Article 54 have been included. All underlying conditions from the PSD permit have been incorporated.

When the boilers burn No. 2 Fuel oil only, the boilers are rated at 87.5 mmBtu/hr, therefore they are not subject NSPS Subpart Db, (rated at less than 100 mmBtu/hr) and they are also not subject to NSPS Dc because the boilers pre-date the regulation. When burning oil with RDF, the boilers are not subject to NSPS Db because as exempted under 40 CFR 60.40b(k), if the boilers are subject to an EPA approved State or Federal section 111(d)/129 plan implementing Subpart Cb, (Virginia regulation 9 VAC 5-40 Article 54), they are not subject to NSPS Subpart Db.

Appendices A and C show that the facility is unlikely to exceed any of the emission limits when firing either RDF or oil.

Conditions 1-13 are pulled from the underlying PSD permit, which incorporated all the requirements from Article 54, with the exception of the Operator Training requirements. Condition 4 was updated to reflect that if the No. 2 fuel oil is certified to ASTM D396, then by definition it meets the definition of distillate oil in NSPS Subpart Db and therefore has a nitrogen content of less than 0.05% which is below the limit in the permit of 0.3%. This will eliminate the need for the facility to have to test for nitrogen content in the fuel. Condition 12 was added to include the Operator Training requirements. These limitation conditions include requirements to specify the air pollution control equipment used to control acid gas emissions, the types and specifications of the approved fuels, throughput limits, steam load limitations, emission rates and visible emission limits.

## **B. Monitoring**

Article 54 requires Continuous Opacity Monitoring Systems (COMS) for opacity, and Continuous Emission Monitoring Systems (CEMS) for SO<sub>2</sub>, NO<sub>x</sub> and CO. The regulation also requires the facility to conduct annual stack testing of the boilers to prove compliance with the PM, HCl, Cadmium, Lead, Mercury, and Dioxin/Furan emission standards. Additional annual stack testing requirements for HF have been added to prove compliance with the emission limits from the underlying PSD permit. VOC was tested during the last year, which proved that the boilers are incinerating the VOC and they do not need to be tested on an on-going basis.

The facility has now been operating under a Title V permit for 10 years and the annual stack tests have demonstrated that the facility is and can remain in compliance with all the emission limits in the permit.

CAM does not apply to these boilers because Article 54, which is written from the emission guidelines in NSPS Cb, was promulgated after 1990. (See 40 CFR 64.2(b)(i))

Conditions 14-16 are pulled from the underlying PSD permit, and Conditions 17-18 are monitoring requirements from Article 54 that have been pulled into the Title V permit as applicable requirements.

### **C. Recordkeeping**

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include throughput records for oil and non-Hazardous solid waste, emission calculations, design firing rate of each WTE boiler, steam loads, inlet temperature of the fabric filters, continuous monitoring system calibrations, excess emissions, all 1-hour average emissions concentrations from the CEMS and COMS, all stack test data, all operator training records and any other records required by Article 54. Condition 19 lists all the recordkeeping requirements for the primary operating scenario.

### **D. Reporting**

The following reports are required for the WTE boilers in this operating scenario: excess emission reports, semi-annual monitoring report, stack test protocol reports, stack test result reports, RATA reports and Article 54 monitoring/operating reports. Conditions 20-21 are the two reporting requirements from Article 54. The other reports are covered in General Conditions section of the permit.

### **E. Testing**

Article 54 requires annual testing for PM, Cadmium, Lead, Mercury, HCl, Opacity, temperature at the inlet of the fabric filters, and the steam load level. Testing of Dioxins and Furans are also included in Article 54, with a different testing schedule from the other parameters and pollutants. These requirements have been pulled into the Title V permit. Annual testing for HF, VOC have been added to the permit for the facility to show compliance with the emission limits. Conditions 22 and 23 list the testing requirements for this operating scenario.

## **VII. WTE Boilers Operating Using Coal - Alternate Operating Scenario**

*In addition to all the applicable regulations listed in the Primary Operating Scenario, there are no federal regulations applicable to this facility under this operating scenario:*

### **A. Limitations**

The alternate operating scenario includes the firing and handling of coal in addition to the fuels and processes included in the primary operating scenario. This operating scenario has been separated from the primary operating scenario because the facility has stopped using coal and no longer has the capability to burn coal in these boilers, however, the underlying PSD permit still allows the use of coal as a fuel. All the conditions have been moved to this section of the permit for ease of showing compliance with this operating scenario.

When firing coal, the boilers are rated at 237 mmBtu/hr, which makes them too small to be applicable to NSPS Subpart D. They are not applicable to NSPS Da because they are not utility boilers. After a thorough research of the records, we have determined that the boilers are not subject to NSPS Subpart Db (as had been stated previously) because the facility "commenced" construction on these units prior to the applicability date of June 19, 1984. Therefore, there are no federal regulations applicable to the boilers when firing coal.

Appendix B shows that the facility is unlikely to exceed any of the emission limits while operating using this scenario.

Conditions 24-30 are the limitation conditions for the boilers while firing coal and the associated coal handling equipment. These conditions were pulled from the underlying PSD permit for the boilers.

## B. Monitoring

The underlying PSD permit did not have monitoring conditions, so monitoring conditions have been added to monitor the opacity and the wet suppression system for the coal pile as well as the fabric filters for the coal handling system. Conditions 31-33 are the monitoring conditions.

## C. Recordkeeping

Recordkeeping for the operations of coal include the throughput of coal to the boilers, the records for visible emission evaluations and the logs from monitoring the coal handling system. Condition 34 is the recordkeeping condition for this operating scenario.

## VIII. Auxiliary Boiler and Storage Tanks

The following federal regulations have been determined to be applicable to the Auxiliary Boiler:

40 CFR Part 60, Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.

40 CFR Part 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants: For Major Sources: Industrial, commercial, and institutional boilers and process heaters.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5 Chapter 50	Part I: New and Modified Stationary Sources
9 VAC 5 Chapter 50	Part II: Article 1: Visible Emissions and Fugitive Dust/Emissions
9 VAC 5 Chapter 50	Part II: Article 2 - Odorous emissions
9 VAC 5 Chapter 80	Article 6: Permits for New and Modified Stationary Sources
9 VAC 5 Chapter 170	General Administration

## A. Limitations

The auxiliary boiler has an underlying minor NSR permit which limits the type of fuel, the fuel specifications, the annual capacity factor, the annual hours of operation, the visible emissions and the emission limits for the boiler. The auxiliary boiler is subject to both NSPS Subpart Db and MACT DDDDD (5D). If the annual capacity factor is kept below 10%, the requirements of both regulations are very limited. For NSPS Db, the only applicable requirement is to maintain an annual capacity factor of less than 10%, limit the fuel to 0.05% Sulfur and 0.3% nitrogen and to maintain opacity less than 20%. Condition 38 was updated to reflect that if the No. 2 fuel oil is certified to ASTM D396, then by definition it meets the definition of distillate oil in NSPS Subpart Db and therefore has a nitrogen content of less than 0.05% which is below the limit in the permit of 0.3%. This will eliminate the need for the facility to have to test for nitrogen content in the fuel. These limitations are in the permit and the facility has an annual hourly operating limit to keep the boiler from exceeding the 10% annual capacity factor. The boiler is considered a limited use boiler under the boiler MACT so there are no limitations requirements from the MACT. This boiler is a backup boiler in the event the WTE boilers fail. The limitations are listed in Conditions 36-37, 39-43.

The storage tanks are limited to storing only distillate oil, and therefore, NSPS Subpart Kb is not applicable to these tanks. Limitations listed in Condition 35 - 42.

## **B. Monitoring**

To meet the limitations, the facility is required to perform visible emission monitoring of the boiler when it is operating. They must obtain fuel certifications of the No. 2 fuel oil to meet ASTM D396, which by definition then characterizes the fuel as distillate oil which is defined as having a nitrogen content of less than 0.05% (NSPS Subpart Db), and is therefore in compliance with the 0.3% maximum listed in Condition 44. Logs must be maintained of the sampling if it is necessary. MACT 5D requires a complete tune-up every 5 years as well as fuel use monitoring.

Storage tank monitoring requirements which include the certifications of the distillate oil have been included in this section of the permit because if sampling and testing is required, the oil samples are taken from these tanks and then sent out for testing. Monitoring for both the boiler and the tanks are listed in Conditions 43-47.

## **C. Recordkeeping**

Records of the fuel throughput and annual hours of operation are required as well as having the facility show the annual capacity factor has not exceeded the 10% limit. Subpart Db requires recordkeeping for each day the unit operates that includes; the date, the number of hours and the hourly steam load. MACT 5D requires recordkeeping consists of the notifications submitted, the 5-year tune-ups, the fuel use records and all other records listed in either 63.7555 or 63, Subpart A. The Recordkeeping requirements are listed in Conditions 48-50.

## **D. Reporting**

Fuel quality reports are required semi-annually and excess emission reports from the VE evaluations are required quarterly. These conditions are also in the underlying minor NSR permit and listed in Conditions 51-52.

# **IX. Internal Combustion Engines**

The following federal regulations have been determined to be applicable to this facility:

40 CFR Part 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5 Chapter 50	Part I: New and Modified Stationary Sources
9 VAC 5 Chapter 60, Article 2	Environmental Protection Agency National Emission Standards for Hazardous Air Pollutants for Source Categories

## **A. Limitations**

The facility has three internal combustion engines that are included in this section: an engine running their peaking generator which is limited to 300 hours per year of operations and two fire pump engines, one for the RDF processing facility and one for the Waste to Energy facility. Each of these engines is applicable to the RICE MACT, Subpart ZZZZ. None of the engines are applicable to the RICE NSPS because they all pre-date the regulation.

The peaking generator has conditions from an underlying minor NSR permit which limit its hours of operation, the fuel it is allowed to burn, and the percent opacity it can emit. The fire pump engines have no underlying permit, so only the requirements of MACT ZZZZ are included. Limitations are listed in Conditions 53-61.

Unit ID 201A, the portable bulky waste shredder, does have an engine that propels this unit and drives the shredder. This engine is considered a nonroad engine and has no applicable requirements in the permit.

## **B. Monitoring**

Visible emission evaluations are required for each engine along with the MACT ZZZZ monitoring requirements for each size and classification of engine. This regulation has changed so many times and is still evolving, therefore, the MACT requirement citations have been listed in this section, so as the MACT changes, the permittee can refer to the current regulation for the applicable requirements. Monitoring requirements are in Conditions 62-64.

## **C. Recordkeeping**

The peaker generator engine underlying minor NSR permit recordkeeping requirements, throughput and hours of operation, have been pulled into this section. The MACT recordkeeping requirements have been added to this section of the permit. Recordkeeping requirements are in Conditions 65-67.

## **D. Reporting**

MACT ZZZZ includes reporting requirements so they have been added to this section of the permit for all the engines. (Conditions 68-69)

## **E. Testing**

MACT ZZZZ has performance testing requirements that have been pulled into this section of the permit. (Condition 70)

## **X. RDF Handling Operations**

There are no federal regulations applicable to the RDF processing facility.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5 Chapter 50	Part I: New and Modified Stationary Sources
9 VAC 5 Chapter 50	Part II: Article 1: Visible Emissions and Fugitive Dust/Emissions
9 VAC 5 Chapter 50	Part II: Article 2 - Odorous emissions
9 VAC 5 Chapter 80	Article 6: Permits for New and Modified Stationary Sources
9 VAC 5 Chapter 170	General Administration

## **A. Limitations**

The limitations for the RDF processing plant have been pulled from the underlying minor NSR permit. They include the use of fabric filters, only using the shredder on the tipping floor, throughput limitations for the municipal solid waste received and processed as well as opacity limits for the tipping floor and the process line shredders. Limitations are in Conditions 71-78.

## **B. Monitoring and Recordkeeping**

The monitoring and recordkeeping conditions are pulled from the underlying minor NSR permit and they include periodic visual emissions evaluations and logs for the fabric filters on the tipping floor, the records for the visual emission evaluations and the throughputs of municipal solid waste and RDF production. (Conditions 79-80)

## **XI. Lime Silo, Ash Handling, and Truck Traffic**

There are no federal regulations applicable to the lime silo or the ash handling systems.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5 Chapter 40	Article 54: Large Municipal Waste Combustors
9 VAC 5 Chapter 50	Part I: New and Modified Stationary Sources
9 VAC 5 Chapter 50	Part II: Article 1: Visible Emissions and Fugitive Dust/Emissions
9 VAC 5 Chapter 50	Part II: Article 2 - Odorous emissions
9 VAC 5 Chapter 80	Article 6: Permits for New and Modified Stationary Sources
9 VAC 5 Chapter 170	General Administration

### **A. Limitations**

The limitations for the lime silo and the ash handling systems have been pulled from the underlying NSR permits. They include air pollution control equipment, throughput of lime, fugitive dust limitations, and opacity limitations for both the lime silo and the ash handling system. Limitation requirements are in Conditions 81-86.

### **B. Monitoring and Recordkeeping**

Both the ash conveying system and the lime silo have visible emission limits, so visible emission monitoring is included. (Condition 87-88)

For recordkeeping, the throughputs of lime, the records of the visible emission evaluations will need to be kept. (Condition 89)

### **C. Testing**

Article 54 requires an annual Method 22 evaluation of the ash conveying system annually, so this Method 22 testing has been retained in this section. (Condition 90)

## **XII. Facility Wide Conditions**

The following federal regulations have been determined to be applicable to this facility:

40 CFR Part 68 - Chemical Accident Prevention Provisions. Describes requirements for Risk Management Plans. This standard applies facility wide.

40 CFR Part 70 - Operating Permits Regulation. Institutes operating permit requirements. This standard applies facility wide.

40 CFR Part 82 - Protection of Stratospheric Ozone - Subpart F - Recycling and Emissions Reduction. This standard applies facility wide.

### **A. Testing**

The general testing conditions from the underlying NSR permits has been put in this section because it applies facility wide. It has been combined with the facility wide Title V condition. (Condition 91)

**B. Reporting**

The following table is not included in the permit, but it includes all the reports the facility is required to submit on a facility wide basis:

<b>Report</b>	<b>Equipment</b>	<b>Frequency</b>	<b>Regulatory basis</b>
NSPS Db Reports Auxiliary boiler	Opacity/VEE readings	Quarterly (Semi-annual if it applies)	NSPS Db and 9 VAC 5-50-50C
	Fuel Analysis Report		
	Capacity Factor Report		
Excess emission reports	CEMS/COMS	Quarterly	9 VAC 5-40-8160 and 9 VAC 5-50-50C
Annual compliance certification reports	Title V permit conditions	Annually	9 VAC 5-80 Article 1
Annual emission statement	Facility	Annually	9 VAC 5-20-160
Semi-Annual Monitoring Report	Facility	Semi-Annually	9 VAC 5-20-160
Fuel Quality Reports	Distillate/Fuel Oil #2 certifications	Semi-Annually	NSPS Db
Stack test protocol	Variable WTE Boilers	For each occurrence	9 VAC 5-50-50 and 9 VAC 5-40-8160
Stack testing reports	Variable WTE Boilers	For each occurrence	9 VAC 5-50-50 and 9 VAC 5-40-8160
RATA reports	Specific WTE Boilers	For each occurrence	9 VAC 5-50-50 and 9 VAC 5-40-8160
Article 54 Monitoring/ Operating Report	9 VAC 5-40-8160 D & E	Semi-annual - (Due February 1 and August 1)	9 VAC 5-50-50 and 9 VAC 5-40-8160

### XIII. 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	Pollutant(s) Emitted (9VAC5-80-720B)	Rated Capacity (9VAC5-80-720C)
114	Turbine Generator Lube Oil Storage Reservoir No. 1	9 VAC 5-80-720 B	VOC	1700 gallons
115	Turbine Generator Lube Oil Storage Reservoir No. 2	9 VAC 5-80-720 B	VOC	1700 gallons
116	Turbine Generator Lube Oil Storage Reservoir No. 3	9 VAC 5-80-720 B	VOC	1700 gallons
117	Diesel Generator Lube Oil Reservoir	9 VAC 5-80-720 C	-	250 gallons
119	Diesel Fuel Tank	9 VAC 5-80-720 B	VOC	300 gallons
120	Diesel Fuel Tank	9 VAC 5-80-720 B	VOC	275 gallons
122	Lube Oil Tank	9 VAC 5-80-720 B	VOC	275 gallons
123	Lube Oil Tank	9 VAC 5-80-720 B	VOC	275 gallons
124	TG Hydraulic Lube Oil Tank	9 VAC 5-80-720 B	VOC	80 gallons
125	TG Hydraulic Lube Oil Tank	9 VAC 5-80-720 B	VOC	80 gallons
126	TG Hydraulic Lube Oil Tank	9 VAC 5-80-720 B	VOC	80 gallons
129	WTE Fire Pump Fuel Oil Tank	9 VAC 5-80-720 B	VOC	275 gallons
130	Liquid Waste Tank	9 VAC 5-80-720 B	VOC	8500 gallons
131	Liquid Waste Tank	9 VAC 5-80-720 B	VOC	8500 gallons
132	Liquid Waste Tank	9 VAC 5-80-720 B	VOC	1500 gallons
211	Fire Pump Fuel Oil Storage Tank	9 VAC 5-80-720 B	VOC	275 gallons
212	Hydraulic Oil Storage Tank	9 VAC 5-80-720 B	VOC	250 gallons
213	Hydraulic Oil Storage Tank	9 VAC 5-80-720 B	VOC	500 gallons
214-219	RDF Roof Top Building Air Heaters	9 VAC 5-80-720 B	VOC	1.4 MMBtu/hr
220	RDF Roof Top Building Air Heater	9 VAC 5-80-720 B	VOC	0.7 MMBtu/hr
221	RDF Water Heater	9 VAC 5-80-720 B	VOC	0.2 MMBtu/hr
222	RDF Boiler	9 VAC 5-80-720 B	VOC	0.9 MMBtu/hr
251	RDF ULSD Tank	9 VAC 5-80-720 B	VOC	3,000 gallons
252	RDF Lubricating Oil Tank	9 VAC 5-80-720 B	VOC	120 gallons
253	RDF Conveyor Baghouse	9 VAC 5-80-720 A	PM	Not Vented Outside
254	WTE Roof Baghouse Vents	9 VAC 5-80-720.A	PM	Vented to boiler

The 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

#### **XIV. INAPPLICABLE REQUIREMENTS**

The following Federal Requirements have been identified as not applicable to the 40 CFR Part 60 Subpart Db Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units For the RDF boilers (044, 045, 046 and 047) - The auxiliary burners used to fire fuel oil are rated at 87 mmBtu/hr and do not meet the applicability criteria in 60.40b(3).

40 CFR Part 60 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 This regulation does not apply to units 109 and 110 because they store No. 2 fuel oil which has a vapor pressure less than 3.5 kPa (0.5 psi).

#### **XV. STREAMLINED REQUIREMENTS**

Condition 14 of the 8/20/03 Permit was streamlined out because the 625 gal/hr limit is the operational limit of the burners and therefore cannot be exceeded as long as there are no changes to the burners. Condition 19.b was changed to require recordkeeping of any design changes to the burners.

Condition 14 of the 11/29/11 Permit was streamlined out because it has already been completed.

#### **XVI. 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 permitted 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.

##### 1. Comments on General Conditions

###### a. Condition 94. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 2-09".

###### b. Condition 100-103. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

###### c. Condition 107. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits

9 VAC 5-80-260. Enforcement

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1605. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

d. Condition 121-124. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

e. Condition 128. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

## **XVII. STATE ONLY APPLICABLE REQUIREMENTS**

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable by the applicant (Condition 131):

1. Odor - 9 VAC 5 Chapter 40, Article 2 and 9 VAC 5 Chapter 50, Article 2.
2. State toxics rule - 9 VAC 5 Chapter 60, Article 5. This rule is applicable to all units on site except the WTE boilers, which are exempted from the toxics rule per APG-457.

## **XVIII. PUBLIC PARTICIPATION**

The proposed permit will be placed on public notice in the Virginian-Pilot from August 26, 2013 to September 25, 2013.