west virginia department of environmental protection

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Jim Justice, Governor
Austin Caperton, Cabinet Secretary
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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-2212E
Plant ID No.:	003-00023
Applicant:	Valley Pet Memorial Services, Inc. (Valley), formerly Green Lawn Cemetery Company
Facility Name:	Hedgesville (Bedington Site)
Location:	Hedgesville, Berkeley County, West Virginia
NAICS Code:	812220
Application Type:	Modification
Received Date:	September 01, 2017
Engineer Assigned:	John Legg
Fee Amount:	$1,000.00
Date Received:	September 07, 2017
Complete Date:	September 08, 2016 (Date newspaper advertisement emailed to DAQ)
Newspaper:	*The Journal*
Applicant Ad Date:	September 05, 2017
UTMs:	Easting: 247.620 km Northing: 4,387.058 km Zone: 18N
Description:	Modification for the addition of a Matthews IEB 32-5S crematory unit to replace a Matthews IE 43-PPII crematory unit having the Emission Unit ID #7. The replacement crematory unit was given the Emission Unit ID #9.

DESCRIPTION OF PROCESS

This crematory/facility was purchased by Valley Pet Memorial Services, Inc. (Valley) on May 2, 2017 from Green Lawn Cemetery Co., Inc.

A Matthews IEB 32-5S crematory will replace the Matthews IE 43-PPII crematory (200 lb/hr capacity) currently designated as Emission Unit ID #7. The replacement crematory was given the Emission Unit ID #9. The replacement crematory is manually loaded, designed to handle up

to 250 pounds per hour per batch load. The replacement crematory has a dual chamber design and is fired with LP gas as an auxiliary fuel.

The animal remains are typically loaded into the primary chamber and then the secondary chamber is preheated to 1400-1800^{0}F in 30 minutes using the secondary chamber's burner (afterburner). Then, the primary/cremation burner is ignited to begin the cremation cycle. A cool-down period of 30 minutes or more is recommended at the end of the cremation cycle before removing the cremated remains and loading the next set of remains.

The secondary chamber has two Eclipse TJ-150 burners rated at a maximum of 1.2 MM Btu/hr per each burner for a total secondary chamber heat input of 2.4 MM Btu/hr. The secondary chamber temperature is monitored by a digital controller which adjusts the afterburner gas input to maintain the desired temperature set point. The crematory operates best with a minimum secondary chamber temperature of 1400-1800^{0}F.

The primary chamber has five burners [Eclipse TJ-75 (x 1) and Eclipse TJ-50 (x 4)] rated at a maximum of 0.5 MM Btu/hr [Eclipse TJ-75] and 0.4 MM Btu/hr [Eclipse TJ-50]. Total heat input to the primary chamber is 2.1 MM Btu/hr [(0.5 + 0.4 x 4) MM Btu/hr]. The primary chamber temperature ranges from 500^{0}F at the beginning of the first cremation of the day to a maximum of 1800^{0}F during successive cremations.

According to Matthew's calculations, the minimum residence time of the exhaust gases in the secondary chamber (retention time) is 2.79 seconds at 1400^{0}F.

Table 1: Emission Unit Date Sheet for Replacement Crematory.	
Item of Interest	**Response**
Manufacturer:	Matthews Environmental Solutions
Model No.:	IEB 32-5S
Rated Capacity:	Maximum 250 lb/hr Annual 468 ton/yr
By what means is waste charged?	Batch
Projected operating schedule:	12 hr/day; 312 day/yr
Primary Combustion Chamber	
Volume	77 ft^3
Effective grate area:	14 ft^2
Maximum temperature:	1,800°F
Burning rate:	6 lb/ft^2/hr
Heat release in primary chamber:	13,000 BTU/hr/ft^3
Total heat release in cremator	15,000 BTU/hr/ft^3
Secondary Combustion Chamber	
Volume	145 ft^3
Cross sectional area:	2.77 ft^2
Volume of gas through secondary combustion chamber:	3,122 ACF @ 1400°F
Minimum gas temperature	1,400°F

Minimum retention time of gas:	2.79 sec
Location of air admission:	Draft Inducer at base of stack
Flame Port	
Flame port area:	2.95 ft^2
Velocity through flame port:	17.6 ft/sec
Combustion Air	
Type of draft:	Forced
If draft is forced describe ID fans or blowers:	Number: 2 HP rating: 5 HP Rated flow: 2,000 (each) ft^3/min Rated speed: 3,450 (each) RPM Fan rated draft: 6 in. H_2O
Auxiliary Burners	
Fuel:	Propane Gas (LP)
Primary Burner	
Capacity:	Eclipse TJ-75 = 0.5 MM BTU/hr per burner Eclipse TJ-50 = 0.4 MM BTU/hr per burner (operating)
Number:	5
Manufacturer:	Eclipse
Motel:	TJ-75 (x1) and TJ-50 (x4)
Fuel:	L.P. Gas
How Controlled?	Timers
Is there a temperature indicator:	No
Secondary Burner	
Capacity:	1.2 (operating) MM Btu/hr per burner
Number:	2
Manufacturer:	Eclipse
Motel:	TJ-150
Fuel:	L.P. Gas
How Controlled?	Timers
Is there a temperature indicator?:	Yes
How temperature recorded?	Chart Recorder
Miscellaneous Devices and Controls	
Automatic loading device.	No
Self closing doors:	No
Sparks arrestor:	No
Flame failure protection equipment:	Yes
Method of creating turbulence for combustion gases.	Directional Changes, Baffle
Method of cleaning secondary or setting chamber:	Cleanout Door
Other interlocking devices or controls.	Yes. Door limit switch to shut off cremation burner.

Installation	
Indoor installation:	Yes
Stack or Vent Data	
Inside diameter or dimensions:	1' 7"
Gas exit temperature:	1,100 °F
Height:	17 ft (estimated)
Stack serves:	This equipment only
Gas flow rate:	2,300 acfm
Estimated percent of moisture:	13%
Waste	
Composition of waste feed to the cremator:	Pet Remains
Expected BTU/lb as fired:	1,000 BTU/lb
Daily amount:	3,000 lb
Does cremator have a charge hopper?	No
Does the charge hopper have automatic control?	No
Is the secondary chamber preheated prior to charging waste?	Yes
At what secondary temperature does waste charging begin?	1,400 °F
Is the ash waste quenched?	No
Are hazardous or special waste burned?	No
Are potential infectious waste burned?	No
How will the waste material from process and control equipment be disposed of?	Ashes
Method of charging waste solids:	Manual
Fuel Usage Data	
Estimated annual fuel cost:	$10,000.00
Firing Rate:	Maximum; 4.5 mm BTU/hr (total = primary chamber + secondary chamber) Typical: 4.3 mm BTU/hr Design: 4.5 mm BTU/hr
Fuel Type:	LP Gas
Typical heating content of fuel:	2,500 BTU/scf
Monitoring Plan:	Display of secondary chamber temperature to ensure proper operating temperature.
Testing	None.
Recordkeeping:	Chart Recorder will record secondary chamber temperature.
Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.	No maintenance procedures required to main warranty. Operating temperature should be maintained below 2,100 °F.

SITE INSPECTION

Joseph Kreger of the Division of Air Quality, Eastern Panhandle Regional Office performed a targeted full on-site inspection on January 08, 2015. The facility received a status code of 30 – In Compliance. Inspection notes state: Records were maintained. Only heat waves were coming from incinerator stacks.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The applicant presented potential emission estimates based on EPA emission factors from Table 2.3-1 and 2.3-2 of AP-42 (5th Edition) and burning 250 lb/hr of pet remains. The potential emissions are as follows:

Pollutant	New Replacement Crematory 9			Old Crematory 7		Delta (New – Old)	
	Emission Factor	Hourly Rate	Annual (2) Emissions	Hourly (1) Rate	Annual (1)(2) Emissions	Hourly Rate	Annual Emissions
	(lb/hr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Particulate Matter ($PM/PM_{10}/PM_{2.5}$)	4.67	0.584	1.093	0.7	1.31	-0.12	-0.22
Sulfur Dioxide (SO_2)	2.17	0.271	0.508	0.43	0.47	-0.16	+0.04
Nitrogen Oxide (NO_x)	3.56	0.445	0.833	0.71	1.33	-0.27	-0.50
Carbon Monoxide (CO)	2.95	0.369	0.690	0.59	1.1	-0.22	-0.41

(1) Hourly and Annual emissions for old crematory 7 were taken from Old Permit 2212D.

(2) Based on operating: 12 hr/day x 6 day/wk x 52 wk/yr = 3,744 hr/yr.

The writer calculated the delta in emissions (New – Old) in replacing old crematory 7 with new crematory 9. The results are shown in the table above.

REGULATORY APPLICABILITY

The following state regulations apply.

45CSR6 - To Prevent and Control Air Pollution From Combustion of Refuse

The purpose of this rule is to prevent and control air pollution from combustion of refuse. The permittee has proposed to replace and operate one pet remains crematory. This rule defines incineration as the destruction of combustible refuse by

burning in a furnace designed for that purpose. The proposed crematory is designed to destroy pet remains and associated containers through incineration. Thus, it meets this definition.

Per section 4.1, these crematories must meet the particulate matter limit by weight. The Pet crematory will have an allowable particulate matter emission rate of 0.678 pounds per hour (based on maximum design-incineration rate of 250 lb/hr). This allowable rate is higher than the estimated hourly potential of 0.584 lb/hr. Thus, the unit should be more than capable of meeting this PM standard.

The crematory is subject to the 20% opacity (visible emission) limitation in section 4.3 of this rule. The opacity and the allowable limits should be met since the crematory is equipped with a secondary chamber with the afterburner, which is designed to reduce the particulate matter and other pollutants entrained in the exhaust stream into products of complete combustion.

The manufacturer calculated the retention time of this crematory to be 2.79 seconds with a minimum secondary chamber temperature of $1,400^0$F. The rule of thumb for nearly complete combustion is 1.0-second retention time in the secondary chamber. Thus, this particular crematory should be capable of meeting the applicable limitations of this rule.

45CSR13 - Permits for Construction, Modification, Relocation and Operation of Stationary sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation

The potential-to-emit from the proposed new replacement crematory is below 6 pounds per hour and 10 tons per year for all of the criteria pollutants, which is less than the permit trigger level as defined in 45CSR§13-2.24.b. However, Rule 6 requires all incinerators to obtain a construction or modification permit regardless of size.

Valley has proposed to install a replacement crematory unit, which is subject to Rule 6. Therefore, the facility is required to obtain a permit as required in 45CSR§6-6.1. and 45CSR§13-2.24.a.

The facility has met the applicable requirements of Rule 13 by publishing a Class I Legal Advertisement in *The Journal* (on September 05, 2017), paying the $1,000.00 application fee (on September 7, 2017), and submitting a complete permit application (deemed complete on September 8, 2017, the date the newspaper affidavit was emailed to the DAQ).

This modification is not classified as a major source of hazardous air pollutants nor does it have the potential to emit 100 tons per year or greater of any criteria pollutant, which triggers Title V major source permitting. In addition, the emission unit is not

subject to a New Source Performance Standard. Thus, the facility is not subject to Title V and will not be required to obtain an operating permit under 45CSR30.

45CSR22 - Air Quality Management Fee Program

The Hedgesville facility is classified as a "9B - Crematory Incinerator" source as defined in 45CSR22.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The information given below came from the previous permit (R13-2212D) for this facility:

Only trace amounts of non-criteria regulated pollutants will be emitted from this facility. These are acetaldehyde, arsenic, antimony, beryllium, cadmium, chromium, copper, formaldehyde, hydrogen chloride, lead, and mercury. Only the metals, (i.e. cadmium, chromium, mercury, etc.) and hydrogen chloride would not be controlled by the afterburner (secondary chamber).

Under EPA's IRIS program, hydrogen chloride (hydrochloric acid) has undergone a complete evaluation and determination for evidence of Pet carcinogenic potential. Reference concentration for chronic inhalation exposure to HCl was determined to be 0.02 mg/cu.m. In general, the reference concentration is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily inhalation exposure of the Pet population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime.

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health effects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in Pets such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle. As stated previously, *there are no federal or state ambient air quality standards for these specific chemicals*. The file contains summaries of the IRIS database information on hydrogen chloride and mercury. For a complete discussion of the known health effects, refer to the IRIS database located at *www.epa.gov/iris*.

AIR QUALITY IMPACTS ANALYSIS

No air dispersion modeling study/analysis was conducted for the facility because the proposed modification/source is not a major source of pollutants as defined in 45CSR14.

MONITORING OF OPERATIONS

For the purposes of ensuring compliance with the proposed emissions limits and applicable rules, the facility should be required to monitor and keep records of the following:

- Weight of each charge/batch per cremation.
- Temperature of the secondary chamber on a continuous basis for each crematory.

Overloading an incinerator beyond the manufacturer's rated capacity can result in incomplete incineration and excess emissions.

Maintaining the temperature of the secondary chamber above 1,400^{0}F (minimum temperature suggested by the manufacturer) insures that complete combustion has taken place. The upper operating temperature should be maintained below 2,100 ^{0}F.

The secondary combustion chamber's temperature is digitally displayed and is recorded on a chart recorder.

RECOMMENDATION TO DIRECTOR

Based on the information provided in the application and the resulting requirements set forth in the permit, the replacement crematory unit should meet all applicable state rules and federal regulations. Therefore, the writer recommends that this modification permit be approved for Valley Pet Memorial Services, Inc.'s Hedgesville, Berkeley County, WV pet cremation facility.

John C. Legg

John Legg
Permit Writer

October 23, 2017
Date

ATTACHMENT 1

FILE COMPARE
COMPARING R13-2212E TO R13-2212D

Valley Pet Memorial Services, Inc.
Hedgesville, Berkeley County, WV

West Virginia Department of Environmental Protection

~~*Earl Ray Tomblin*~~ *Jim Justice*
Governor

Division of Air Quality

~~*Randy C. Huffman*~~ *Austin Caperton*
Cabinet Secretary

Permit to Modify

R13-~~2212D~~2212E

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§22-5-1 et seq.) and 45 C.S.R. 13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the above-referenced facility is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:

~~**Green Lawn Cemetery Company**~~
Valley Pet Memorial Services, Inc.
Hedgesville Site
003-00023

William F. Durham
Director

Issued: ~~*November 28, Draft*~~2016

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Facility Location:	3955 Hammonds Mill Road Hedgesville, Berkeley County, West Virginia 25427
Mailing Address:	127 Britner Avenue Williamsport, MD 21795
Facility Description:	Pet Crematory
NAICS Codes:	812220 – Cemeteries and Crematories
UTM Coordinates:	247.620 km Easting • 4,387.058 km Northing • Zone ~~17~~18N
Permit Type:	Modification
Description of Change:	~~This action is for the~~ The addition of a Matthews IEB 32-5S crematory unit to replace a Matthews IE 43-PPII crematory unit having the Emission Unit ID #~~1~~7. The replacement crematory unit was given the Emission Unit ID #9

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.

The source is not subject to 45CSR30.

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1.0. Emission Units

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Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
1	1e	Matthews Cremation Division IEB 32-5S crematory	2016	250 lb/hr	Afterburner
2	2e	Industrial Equipment & Engineering Company IE 43-ET crematory		400 lb/hr	Afterburner
3	3e	Industrial Equipment & Engineering Company IE 43-PPII crematory		150 lb/hr	Afterburner
4	4e	Industrial Equipment & Engineering Company IE 43-PPII crematory		100 lb/hr	Afterburner
5	5e	Industrial Equipment & Engineering Company IE 43-ET crematory		400 lb/hr	Afterburner
6	6e	Industrial Equipment & Engineering Company IE 43-PPII crematory		150 lb/hr	Afterburner
~~7~~9	~~7e~~9e	Matthews Cremation Division ~~IE 43-PPII~~IEB 32-5S crematory—unit	2017	~~200~~250 lb/hr	Afterburner

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2.0. General Conditions

2.1. Definitions

2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.

2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.

2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

2.2. Acronyms

CAAA	Clean Air Act Amendments
CBI	Confidential Business Information
CEM	Continuous Emission Monitor
CES	Certified Emission Statement
C.F.R. *or* CFR	Code of Federal Regulations
CO	Carbon Monoxide
C.S.R. *or* CSR	Codes of State Rules
DAQ	Division of Air Quality
DEP	Department of Environmental Protection
dscm	Dry Standard Cubic Meter
FOIA	Freedom of Information Act
HAP	Hazardous Air Pollutant
HON	Hazardous Organic NESHAP
HP	Horsepower
lbs/hr	Pounds per Hour
LDAR	Leak Detection and Repair
M	Thousand
MACT	Maximum Achievable Control Technology
MDHI	Maximum Design Heat Input
MM	Million
MMBtu/hr *or* mmbtu/hr	Million British Thermal Units per Hour
MMCF/hr *or* mmcf/hr	Million Cubic Feet per Hour
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NOx	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter less than 2.5 µm in diameter
PM_{10}	Particulate Matter less than 10µm in diameter
Ppb	Pounds per Batch
Pph	Pounds per Hour
Ppm	Parts per Million
Ppmv or ppmv	Parts per Million by Volume
PSD	Prevention of Significant Deterioration
Psi	Pounds per Square Inch
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TAP	Toxic Air Pollutant
TPY	Tons per Year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulate
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VEE	Visual Emissions Evaluation
VOC	Volatile Organic Compounds
VOL	Volatile Organic Liquids

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2.3. Authority

This permit is issued in accordance with West Virginia Air Pollution Control Act W.Va. Code §§ 22-5-1. et seq. and the following Legislative Rules promulgated thereunder:

2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation*;

2.4. Term and Renewal

2.4.1. This Permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any other applicable legislative rule;

2.5. Duty to Comply

2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit ~~Application~~Applications R13-1839, R13-1839A, R13-1915, R13-2212, R13-2212A, R13-2212B, R13-2212C, R13-2212D and R13-2212E, and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to;
[45CSR§§13-5.11 and 10.3.]

2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;

2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;

2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies; i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent

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to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

2.7. Duty to Supplement and Correct Information

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-4.]

2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-5.4.]

2.10 Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.
[45CSR§13-5.1]

2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

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2.12. Emergency

2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are met.

2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

b. The permitted facility was at the time being properly operated;

c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

2.12.5 The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

2.13. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

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2.14. Suspension of Activities

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

2.15. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege.

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2.16. Severability

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

2.17. Transferability

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. **[45CSR§13-10.1.]**

2.18. Notification Requirements

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

2.19. Credible Evidence

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

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3.0. Facility-Wide Requirements

3.1. Limitations and Standards

3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]

3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]

3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management, and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.
[40CFR§61.145(b) and 45CSR§34]

3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1] ***[State Enforceable Only]***

3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.
[45CSR§13-10.5.]

3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.
[45CSR§11-5.2.]

3.2. Monitoring Requirements

[Reserved]

3.3. Testing Requirements

3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the

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permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:
   1. The permit or rule evaluated, with the citation number and language;
   2. The result of the test for each permit or rule condition; and,
   3. A statement of compliance or noncompliance with each permit or rule condition.

[WV Code § 22-5-4(a)(14-15) and 45CSR13]

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3.4. Recordkeeping Requirements

3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports, and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.

3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§4. *State Enforceable Only.*]

3.5. Reporting Requirements

3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.

3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

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~~If to the~~ DAQ:	~~If to the~~ US EPA:
Director	Associate Director
WVDEP	Office of Air Enforcement and Compliance Assistance
Division of Air Quality	(3AP20)
601 57th Street	U.S. Environmental Protection Agency
Charleston, WV 25304-2345	Region III
	1650 Arch Street
DAQ Compliance and Enforcement[1]:	Philadelphia, PA 19103-2029
DEPAirQualityReports@wv.gov	

[1]For all self-monitoring reports (MACT, GACT, NSPS, etc.), stack tests and protocols, Notice of Compliance Status Reports, Initial Notifications, etc.

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3.5.4. Operating Fee

3.5.4.1. In accordance with 45CSR22 – Air Quality Management Fee Program, the permittee shall not operate nor cause to operate the permitted facility or other associated facilities on the same or contiguous sites comprising the plant without first obtaining and having in current effect a Certificate to Operate (CTO). Such Certificate to Operate (CTO) shall be renewed annually, shall be maintained on the premises for which the certificate has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

3.5.4.2. In accordance with 45CSR22 – Air Quality Management Fee Program, enclosed with this permit is an Application for a Certificate to Operate (CTO). The CTO will cover the time period beginning with the date of initial startup through the following June 30. Said application and the appropriate fee shall be submitted to this office prior to the date of initial startup. For any startup date other than July 1, the permittee shall pay a fee or prorated fee in accordance with Section 4.5 of 45CSR22. A copy of this schedule may be found on the reverse side of the CTO application.

3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

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4.0. Source-Specific Requirements

4.1. Limitations and Standards

4.1.1. The facility shall employ, Matthews Cremation Division IEB 32-5S crematory identified as two crematory 1 (emission unit 1) and crematory 9 (emission unit 9). The operation of these shall not exceed the following maximum operating and emission limitations per crematory:

i. The maximum charge rate into the crematory shall not exceed 250 lb/hr;

ii. Operation of the crematory shall not exceed 3,744 hours per year;

iii. The secondary combustion chamber of the crematory shall be operated at a minimum of 1,400°F.

iv. Emissions from the crematory shall not exceed the maximum hourly and annual emission limits set forth in Table 4.1.1.

Table 4.1.1.

Emission Source ~~ID~~IDs	Pollutant	Emission Rates per Individual Crematory	
		Hourly (lb/hr)	Annual (1) (TPY)
Crematories 1 and 9	PM	0.584	1.093
	SO_2	0.271	0.508
	NOx	0.445	0.833
	CO	0.369	0.690
	CO_2e	625.26	2738.66

(1) Based on operating 12 hr/day, 6 day/wk, and 52 wk/yr, or 3,744 hr/yr.

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4.1.2. The facility shall employ, Industrial Equipment & Engineering Company IE 43-ET crematory identified as crematories 2 (emission unit 2) and 5 (emission unit 5). The operation of these shall not exceed the following maximum operating and emission limitations per crematory:

i. The maximum charge rate into the crematory shall not exceed 400 lb/hr or 876 tons during any consecutive (12) month period.;

ii. Operation of the crematory shall not exceed 4,380 hours per year;

iii. The secondary combustion chamber of the crematory shall be operated at a minimum of 1,600°F.

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iv. Emissions from the crematory shall not exceed the maximum hourly and annual emission limits set forth in Table 4.1.2.

Table 4.1.2.

Emission Source ID	Pollutant	Emission Rates per Individual Crematory	
		Hourly (lb/hr)	Annual[1] (TPY)
Crematories 2 and 5	PM	0.2	0.44
	SO_2	0.53	1.16
	NOx	0.22	0.48
	CO	0.2	0.44

~~(1) Annual emission are based on operating schedule of 12 hr/day and 365 days/yr, or 4,380 hours per year.~~

(1) Based on operating12 hr/day and 365 day/yr, or 4,380 hr/yr.

4.1.3. The facility shall employ, Industrial Equipment & Engineering Company IE 43-PPII crematory identified as crematories 3 (emission unit 3) and 6 (emission unit 6). The operation of these shall not exceed the following maximum operating and emission limitations per crematory:

i. The maximum charge rate into the crematory shall not exceed 150 lb/hr or 328.5 tons during any consecutive (12) month period.;

ii. Operation of the crematory shall not exceed 4,380 hours per year;

iii. The secondary combustion chamber of the crematory shall be operated at a minimum of 1,600^{0}F.

iv. Emissions from the crematory shall not exceed the maximum hourly and annual emission limits set forth in Table 4.1.3.

Table 4.1.3.

Emission Source ID	Pollutant	Emission Rates per Individual Crematory	
		Hourly (lb/hr)	Annual[1] (TPY)
Crematories	PM	0.12	0.26

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3 and 6	SO_2	0.12	0.26
	NOx	0.38	0.83
	CO	0.16	0.35

~~(1) (1) Annual emission are based on operating schedule of 12 hr/day and 365 days/yr, or 4,380 hours per year.~~

(1) Based on operating12 hr/day and 365 day/yr, or 4,380 hr/yr.

4.1.4. The facility shall employ, Industrial Equipment & Engineering Company IE 43-PPII crematory identified as crematory 4 (emission unit 4). The operation of this unit shall not exceed the following maximum operating and emission limitations:

i. The maximum charge rate into the crematory shall not exceed 100 lb/hr;

ii. Operation of the crematory shall not exceed 4,380 hours per year;

iii. The secondary combustion chamber of the crematory shall be operated at a minimum of 1,600°F.

iv. Emissions from the crematory shall not exceed the maximum hourly and annual emission limits set forth in Table 4.1.4.

Table 4.1.4.

Emission Source ID	Pollutant	Emission Rates ~~per Individual Crematory~~	
		Hourly (lb/hr)	Annual (1) (TPY)
Crematory 4	PM	0.16	0.35
	CO	0.007	0.02

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~~4.1.5. The facility shall employ, Matthews Cremation Division IE 43-PPII crematory identified as crematory 4 (emission unit 4). The operation of this unit shall not exceed the following maximum operating and emission limitations:~~

~~i. The maximum charge rate into the crematory shall not exceed 200 lb/hr or 374 tons per year;~~

~~ii. The secondary combustion chamber of the crematory shall be operated at a minimum of 1,400°F.~~

iii. Emissions from the crematory shall not exceed the maximum hourly and annual emission limits set forth in Table 4.1.5.

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Table 4.1.5.

Emission Source ID	Pollutant	Emission Rates	
	(1) Hourly (lb/hr)Based on operating12 hr/day and 365 day/yr, or 4,380 hr/yr.		Annual (TPY)
7	PM10	0.7	
	PM	0.7	
	SO2	0.43	
	NOx	0.71	1.33
	CO	0.59	1.1

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4.1.5. The Matthews Cremation Division IE 43-PPII crematory unit identified as crematory 7 (emission unit 4) shall be disconnected and removed from service.

4.1.6. The permittee shall only incinerator animal carcasses and associated wastes (i.e. plastic bags) at the facility.

4.1.7. The permittee shall install and maintain a device that continuous measures the representative temperature of the secondary combustion chamber of each crematory at the facility.

4.1.8. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]

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4.2. Monitoring Requirements

4.2.1. For purposes of demonstrating compliance with the emission and operating limitations of conditions 4.1.1. to 4.1.54. of this permit, the permittee shall monitor the and record the hours of

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operation of ~~crematories 2~~each crematory (1 through 6 and ~~5,~~9), the amount of animal carcasses and associated wastes by weight charged into each crematory and the operating temperature of the secondary combustion chamber of each online crematory once per day ~~of~~ during normal operation. ~~The permittee may use the sample record keeping forms appended hereto as Attachment A.~~ Such records shall be maintained in accordance with condition 3.4.1 of this permit.

4.3. Testing Requirements

[Reserved]

4.4. Recordkeeping Requirements

4.4.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:

a) The date, place as defined in this permit and time of sampling or measurements;
b) The date(s) analyses were performed;

c) The company or entity that performed the analyses;

d) The analytical techniques or methods used;

e) The results of the analyses; and

f) The operating conditions existing at the time of sampling or measurement.

4.4.2. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

4.4.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

a) The equipment involved.

b) Steps taken to minimize emissions during the event.

c) The duration of the event.

d) The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

e) The cause of the malfunction.

f) Steps taken to correct the malfunction.

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g) Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

4.5. Reporting Requirements

[Reserved]

CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached _____, representing the period beginning _____ and ending _____, and any supporting documents appended hereto, is true, accurate, and complete.

Signature[1] (please use blue ink) _____ Responsible Official or Authorized Representative _____ Date

Name & Title (please print or type) _____ Name _____ Title

Telephone No. _____ Fax No. _____

[1] This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:

a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person 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 a gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), or

Table 2.3-1 (English And Metric Units). EMISSION FACTORS FOR NITROGEN OXIDES (NO_x), CARBON MONOXIDE (CO), AND SULFUR DIOXIDE (SO_2) FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Control Level[b]	NO_x[c]			CO[c]			SO_2[c]		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	3.56 E+00	1.78 E+00	A	2.95 E+00	1.48 E+00	A	2.17 E+00	1.09 E+00	B
Low Energy Scrubber/FF									
Medium Energy Scrubber/FF							3.75 E-01	1.88 E-01	E
FF							8.45 E-01	4.22 E-01	E
Low Energy Scrubber							2.09 E+00	1.04 E+00	E
High Energy Scrubber							2.57 E-02	1.29 E-02	E
DSI/FF							3.83 E-01	1.92 E-01	E
DSI/Carbon Injection/FF							7.14 E-01	3.57 E-01	E
DSI/FF/Scrubber							1.51 E-02	7.57 E-03	E
DSI/ESP									

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.

[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator

[c] NO_x and CO emission factors for uncontrolled facilities are applicable for all add-on control devices shown.

Table 2.3-2 (English And Metric Units). EMISSION FACTORS FOR TOTAL PARTICULATE MATTER, LEAD, AND TOTAL ORGANIC COMPOUNDS (TOC) FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Control Level[b]	Total Particulate Matter			Lead[c]			TOC		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	4.67 E+00	2.33 E+00	B	7.28 E-02	3.64 E-02	B	2.99 E-01	1.50 E-01	B
Low Energy Scrubber/FF	9.09 E-01	4.55 E-01	E						
Medium Energy Scrubber/FF	1.61 E-01	8.03 E-02	E	1.60 E-03	7.99 E-04	E			
FF	1.75 E-01	8.76 E-02	E	9.92 E-05	4.96 E-05	E	6.86 E-02	3.43 E-01	E
Low Energy Scrubber	2.90 E+00	1.45 E+00	E	7.94 E-02	3.97 E-02	E	1.40 E-01	7.01 E-02	E
High Energy Scrubber	1.48 E+00	7.41 E-01	E	6.98 E-02	3.49 E-02	E	1.40 E-01	7.01 E-02	E
DSI/FF	3.37 E-01	1.69 E-01	E	6.25 E-05	3.12 E+01	E	4.71 E-02	2.35 E-02	E
DSI/Carbon Injection/FF	7.23 E-02	3.61 E-02	E	9.27 E-05	4.64 E-05	E			
DSI/FF/Scrubber	2.68 E+00	1.34 E+00	E	5.17 E-05	2.58 E-05	E			
DSI/ESP	7.34 E-01	3.67 E-01	E	4.70 E-03	2.35 E-03	E			

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.

[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator

[c] Hazardous air pollutants listed in the *Clean Air Act.*