

Fact Sheet



*For Final Permitting Action Under 45CSR30 and
Title V of the Clean Air Act*

Permit Number: **R30-03900036-2006**

Application Received: **June 16, 2006**

Plant Identification Number: **03-054-039-00036**

Permittee: **Thomas Memorial Hospital**

Mailing Address: **4605 MacCorkle Ave. SW, South Charleston, WV 25309**

Physical Location:	South Charleston, Kanawha County, West Virginia
UTM Coordinates:	436.604 km Easting • 4,245.355 km Northing • Zone 17
Directions:	From I-64 MacCorkle Avenue exit, turn left on MacCorkle Ave. (Route 60), then go approximately 1.5 miles to Thomas Memorial Hospital.

Facility Description

The Consumat incinerator was designed to combust "Type O" waste at a capacity of 470 pounds per hour for 8 hours per 24 hour period, 52 weeks per year. The incinerator operating scenario is to combust medical waste as the incinerator was designed. An ISI model venturi/packed wet scrubber controls the air emissions from the incinerator. The permitted facility and emission unit is characterized by SIC and NAICS codes 8062, and 622110, respectively.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Criteria Pollutants	Potential Emissions ⁽²⁾	2005 Actual Emissions ⁽³⁾
Carbon Monoxide (CO)	1.75	0.21473
Nitrogen Oxides (NO _x)	7.88	0.25914
Lead (Pb)	0.02	0.00053
Particulate Matter (PM ₁₀) ⁽¹⁾	2.0	0.07746
Total Particulate Matter (TSP)	3.07	0.10773
Sulfur Dioxide (SO ₂)	3.07	0.00187
Volatile Organic Compounds (VOC)	0.31	0.021
Hazardous Air Pollutants	Potential Emissions	2005 Actual Emissions
Cadmium	0.00188	3.99×10^{-4}
Chlorine	0.036	7.643×10^{-3}
Hydrogen Fluoride (HF)	0.0511	0.010846
Hydrogen Chloride (HCl)	2.98	0.01012
Mercury	0.00367	0.00113
Dioxins	7.31×10^{-6}	1.3×10^{-7}
Furans	2.45×10^{-5}	3.6×10^{-7}
Aggregate HAPs	3.10	0.03014

(1) *PM₁₀ is a component of TSP.*

(2) *Potential emissions are for the Hospital/Medical/Infectious Waste Incinerator (HMIWI) only. Other facility emissions, which are not enumerated above, are from equipment that do not require Title V permitting in accordance with the Title V Program Applicability Basis below.*

(3) *Actual emissions are for the HMIWI only are for January 2005 through December of 2005, as given to the DAQ in a letter dated September 20, 2006 and electronic mail to the permit writer dated September 28, 2006.*

Title V Program Applicability Basis

This facility does not have the potential to emit over 100 tons per year of criteria pollutant, over 10 tons per year of a single HAP, or over 25 tons per year of aggregate HAPs. However, this facility operates a Hospital/Medical/Infectious Waste Incinerator, which according to 45CSR§24-6.1. necessitates the permittee to submit a complete application for a CAA Title V permit in accordance with the requirements of 45CSR30. Furthermore, according to 45CSR§30-3.3.b., for any non-major source subject to 45CSR30, the Director shall include in the permit all applicable requirements for emission unit(s) that cause the source to be subject to this rule.

Therefore, Thomas Memorial Hospital is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR6	Open burning prohibited.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR24	Prevent and Control Emissions from hospital/medical/infectious waste incinerators
	45CSR30	Operating permit requirement.
	40 C.F.R. Part 60, Subpart Ce	Emission Guidelines and Compliance Times for hospital/medical/infectious waste incinerators
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR15, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R13-1311A	02/21/2001	
R30-03900036-2001	12/18/2001	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

Determinations and Justifications

1. Monitoring for SO₂, NO_x and VOC Emissions

According to the rationale in current Title V permit condition III.C.2., emissions of SO₂, NO_x and VOC are estimated using AP-42 factors, and indicate that emissions from the incinerator are only a small fraction of the limits established by 45CSR§24-4.3.a. and permit R13-1311A, condition A.1. This rationale will be left out of the permit and placed in this Fact Sheet. However, the remaining monitoring requirements of condition III.C.2. of the initial permit will be included as permit condition 4.2.1. with the same regulatory citation.

2. Emission of Visible Particulate Matter

Permit R13-1311A, condition B.3., uses language from a previous version of 45CSR§6-4.3. New, modified language now exists in 45CSR§6-4.3. However, 45CSR§24-4.3.g. limits emissions to 10% maximum opacity, which will streamline the 20% and 40% maximum opacities set forth in 45CSR§§6-4.3 and 4.4., respectively. Compliance with the streamline limit from 45CSR§24-4.3.g. will ensure compliance with R13-1311A, condition B.3., and 45CSR§§6-4.3. and 4.4.

3. 45CSR24 – To Prevent and Control Emissions from Hospital/Medical/Infectious Waste Incinerators

The permittee's incinerator is subject to 45CSR§24-4.3. The requirements of 45CSR§24-4.3. were incorporated by reference in the initial Title V permit R30-03900036-2001, condition III.B.2.a.vi. In the renewed permit, for of each subdivision 45CSR§§24-4.3.a. through 4.3.g., the applicable requirements from 40 C.F.R. 60 Subpart Ec are specified in detail, as opposed to incorporating them by reference, in the following permit conditions: 4.1.8., 4.1.12., 4.1.13., 4.1.14., 4.2.2., 4.3.2., 4.4.2., 4.5.1., and 4.5.2. In accordance with 45CSR§24-5.1., any and all references in 40 C.F.R. Part 60 Subpart Ec to the "Administrator" are amended to be the "Director" except in §60.56c(i) establishing operating parameters when using controls other than those listed in 40 C.F.R. §60.56c(d), and alternative methods of demonstrating compliance under 40 C.F.R. §60.8, which shall remain "Administrator". However, these exceptions are not applicable to the permittee at the time of writing this permit since wet scrubber control technology is employed. Therefore, all references to "Administrator" will be amended to be "Director" in the requirements incorporated from 40 C.F.R. 60 Subpart Ec. Specifically, the reporting requirements set forth in 45CSR§24-4.3.f., which incorporate 40 C.F.R. §§60.58c(d), (e), and (f), will be amended in accordance with 45CSR§24-5.1. This will effectively direct semiannual reporting (permit conditions 4.5.1. and 4.5.2.) for compliance with 45CSR24 to the Director of the DAQ. Also, the Director may request a repeat performance test as may be required by permit condition 4.3.2.g.

4. Secondary Combustion Chamber Temperature Monitoring

Permit R30-03900036-2001, condition III.C.3., states that the "*The incinerator shall incorporate instrumentation to provide continuous temperature readout indicating the secondary combustion chamber's temperature. Recordkeeping for the monitoring devices shall be recorded at least once every 24 hours during periods of normal operation.*" This recordkeeping frequency for secondary combustion chamber temperature is not as stringent as the applicable requirement set forth by 45CSR§24-4.3.e., which incorporates by reference 40 C.F.R. § 60.57c. The specific requirement 40 C.F.R. § 60.57c(a), refers to Table 3 of Subpart Ec, which specifies the measured parameters and their respective data recording frequency. The data recording frequency for secondary chamber temperature is once per minute. Therefore, the frequency shall be revised as part of this Title V permit renewal, and is permit condition 4.2.2.a.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

1. Consent Order CO-R-6, 13-E-2001-9

All of the requirements of this CO were not completed as of the issue of the initial permit. Thus, the incomplete requirements were included in condition III.B.2.a.xii. in the initial permit. A letter dated January 7, 2002 from the permittee to the DAQ requests termination of the CO since the permittee had by that time met the terms of the CO. The permittee fulfilled the requirements set forth in III.B.2.a.xii.

of the initial Title V permit; therefore, these particular requirements will not be included in permit R30-03900036-2006.

2. Consent Order, Certified Mail Article # 7003 1010 0003 5770 9991

This consent order was not included in the initial Title V permit, but was entered during the term of the initial permit. The NOV and C&D was issued to the permittee on February 19, 2004. The basis for the order was that 9/01/2003 testing indicated particulate matter concentration in the incinerator exhaust gases was 0.046 grains/dry standard cubic foot, which exceeds the limit of 0.03 grains/dry standard cubic foot, set forth in 40 C.F.R. 60 Subpart Ce, §60.33e(a). Note that 45CSR16 incorporates by reference 40 C.F.R. 60 Subparts Ce and Ec. The permittee was ordered to conduct performance testing for PM and opacity within 60 days of the issue of the NOV and CO, as well as provide a detailed explanation of the causes of the violation, and steps taken to ensure the violation is not repeated.

As required in the Consent Order, the permittee provided an explanation in a letter dated 02/25/2004, which indicated reasons for the exceedance of the PM limit, which were: damage to the control device, a hole in the stack, and a possible inaccurate flow meter. All of the known deficiencies were either repaired or replaced.

The permittee performed testing for PM emission rate and concentration and opacity on April 15, 2004. The test report was received by the DAQ on May 6, 2004. Test results indicated compliance with opacity, PM emission rate, and the PM concentration limits. The PM hourly emission rate and concentration increased with each of the three (3) runs performed during the complete test. The third run measured a PM concentration of 0.0296 gr/dscf, which was barely under the limit of 0.03 gr/dscf. The permittee successfully completed the ordered testing within the 60 days from the date of the NOV, and the test results indicated the emissions were brought back into compliance with the applicable limits.

The permittee complied with the terms of the Consent Order, and there were no on-going requirements that were initiated by the CO. Therefore, no schedule for compliance or requirements from this particular CO will be included in the permit.

3. 40 C.F.R. 63 Subpart DDDDD – *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters*

The Consumat incinerator (Emission Unit ID 1S) meets the definition of a hospital/medical/infectious waste incinerator; therefore, the Consumat incinerator is not subject to Subpart DDDDD in accordance with the definition of boilers and process heaters which are not subject, as set forth in §63.7491(b).

Additionally, the permittee operates three (3) natural gas-fired boilers at the facility. The boilers are capable of being fired by fuel oil, and a small amount of fuel oil is kept on site for emergency conditions.

Criteria	Boiler #1	Boiler #2	Boiler #3
Manufacturer	Erie City Boiler	Keeler Boiler	Keeler Boiler
Year Built	1963	1971	1971
Heat Input	20 MMBtu/hr	30 MMBtu/hr	30 MMBtu/hr
Fuel	Natural gas	Natural gas	Natural gas
Type	Water tube	Water tube	Water tube

All three boilers in the table above are “existing” units, according to the definitions of new and existing in §§63.7490(b) and (d), respectively. All three boilers in the table above meet the definition in §63.7575 of a “Large gaseous fuel subcategory” boiler since they are water tube type, burn gaseous fuel not combined with solid fuel, and burn liquid fuel only during periods of gas curtailment or gas supply emergencies, and the DHI is greater than 10 MMBtu/hr. In §63.7500(a)(1) and (2), the requirements for each subcategory are stated as being found in Tables 1 through 4 of the Subpart DDDDD. There are no requirements in Table 1 for an “Existing large gaseous fuel” unit. Furthermore, the subsequent tables of Subpart DDDDD are not applicable to the boilers.

Should any of the three boilers in the table above be defined as “limited use”, the unit would remain exempt from the requirements of Subpart DDDDD as long as the unit meets the definition of an “existing” unit. Should any boiler in the table above be “reconstructed” as defined by §63.7490(c), whether the unit be “limited use” or not, the unit may become subject to certain requirements set forth in Subpart DDDDD.

4. 40 C.F.R. 62 Subpart HHH - *Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators*. The incinerator (Emission Unit ID 1S) is covered by an EPA approved and effective State plan 45CSR24, and therefore is not subject to this standard according to the applicability rules of Subpart HHH.
5. 45CSR20 - *Good Engineering Practice as Applicable to Stack Heights*. This regulation does not apply as all stacks are less than 213 feet (65 meters).
6. 45CSR21 - *To Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds*. This regulation does not apply as theoretical VOC emissions are less than the 100 ton per year threshold.
7. 40 C.F.R. 60 Subpart E – *Standards of Performance for Incinerators*
According to applicability criterion in 40 C.F.R. § 60.50(a), this subpart applies to incinerators with a charging rate greater than 50 tons per day. The permittee’s incinerator charges waste at a maximum rate of $(470 \text{ lb/hr}) \times (8 \text{ hr operation/day}) \times (1 \text{ ton}/2000 \text{ lb}) = 1.88 \text{ ton/day}$; therefore, this subpart is not applicable to the permittee’s incinerator.
8. 40 C.F.R. 60 Subpart Ec – *Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for which Construction is Commenced After June 20, 1996*.
The permittee’s incinerator was initially constructed in 1991, and wet scrubber emission control device was added in 2000 to control emissions of particulate matter (PM) and hydrogen chloride (HCl). The wet scrubber was added to comply with 40 C.F.R. 60 Subpart Ce. In 40 C.F.R. § 60.50c(h), physical or operational changes for the sole purpose of complying with Subpart Ce are not considered a modification and do not make the HMIWI subject to Subpart Ec. It should be noted, however, that the facility is subject to 45CSR24, which incorporates by reference many of the requirements of 40 C.F.R. 60 Subpart Ec. The fact that the facility is not directly subject to Subpart Ec does not relieve the facility from being subject to certain requirements contained in Subpart Ec that are incorporated by reference into applicable regulation 45CSR24.
9. 40 C.F.R. 60 Subpart Kb - *Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after July 23, 1984*.
The permittee has a 10,000-gallon capacity, underground storage tank for #2 fuel oil. The tank was constructed in 1998. The permittee also uses a 250-gallon capacity day tank for the facility’s 800-kW emergency generator. This data was taken from the application for permit R30-03900036-2001. 40 C.F.R. Subpart Kb is applicable to tanks greater than 75-m^3 (19,813 gallon) capacity. Since the volume capacity of the permittee’s tanks are less than applicable volume range this NSPS to apply, these two (2) tanks are not subject to 40 C.F.R. 60 Subpart Kb.

10. 45CSR27 – *To Prevent and Control the Emissions of Toxic Air Pollutants*

The permittee conservatively estimated potential usage of ethylene oxide in amount of 339 lb/yr, which is generated by the sterilization unit. This PTE was taken from the application for permit R30-03900036-2001. Since the potential total emissions that may be emitted is less than the applicable limit of 500 lb/yr set forth by 45CSR§27-3.1., the permittee is not required to employ best available technology (BAT) as prescribed in 45CSR27.

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: October 6, 2006
Ending Date: November 6, 2006

All written comments should be addressed to the following individual and office:

Denton B. McDerment
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

Denton B. McDerment
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1221 • Fax: 304/926-0479

Response to Comments (Statement of Basis)

No written comments were received by the permit writer concerning the draft/proposed Title V permit.