

21 February 2005

Mr. Michael Annarummo  
Public Works Director  
City of Woonsocket  
15 Cumberland Hill Road  
Woonsocket, RI 02895

Dear Mr. Annarummo:

The Department of Environmental Management, Office of Air Resources has reviewed and approved your request for a minor source permit for an incinerator and air pollution control equipment at the Woonsocket Regional Wastewater Treatment Facility located at 15 Cumberland Hill Road, Woonsocket, Rhode Island.

Enclosed is a minor source permit issued pursuant to our review of your request (Approval Nos. 1823-1824).

I can be reached at 222-2808, extension 7011 if there are any questions.

Sincerely,

Douglas L. McVay  
Associate Supervising Engineer  
Office of Air Resources

cc: Woonsocket Building Official  
Joe Megale, Synagro Northeast  
Glenn T. Almquist, ESS

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR RESOURCES

MINOR SOURCE PERMIT

*CITY OF WOONSOCKET*

APPROVAL NOS. 1823-1824

Pursuant to the provisions of Air Pollution Control Regulation No. 9, this minor source permit is issued to:

**CITY OF WOONSOCKET**

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**For the following:**

*Construction of a Dorr-Oliver Incorporated fluidized bed combustor (Approval No. 1823) to replace the existing multiple hearth furnace. The fluidized bed combustor shall be capable of firing sewage sludge, natural gas and No. 2 fuel oil. Installation of an air pollution control system consisting of a new custom variable throat venturi/impingement tray wet scrubbing system (Approval No. 1824) to treat emissions generated by the fluidized bed combustor.*

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Located at: *Woonsocket Regional Wastewater Treatment Facility*

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*15 Cumberland Hill Road, Woonsocket*

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**This permit shall be effective from the date of its issuance and shall remain in effect until revoked by or surrendered to the Department. This permit does not relieve *the City of Woonsocket* from compliance with applicable state and federal air pollution control rules and regulations. The design, construction and operation of this equipment shall be subject to the attached permit conditions and emission limitations.**

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**Stephen Majkut, Chief  
Office of Air Resource**

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**Date of issuance**

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**OFFICE OF AIR RESOURCES**

Permit Conditions and Emission Limitations

**CITY OF WOONSOCKET**

Approval Nos. 1823-1824

A. Emission Limitations - The following emission limitations are applicable to the Dorr-Oliver, Inc. Fluidized Bed Combustor (FBC).

1. Nitrogen Oxides (NO<sub>x</sub>)

The emission rate of nitrogen oxides discharged to the atmosphere shall not exceed 1.90 pounds per ton of dry sludge input or a maximum of 8.32 lbs/hr, whichever is more stringent.

2. Carbon Monoxide (CO)

a. The concentration of carbon monoxide in the exit gas from the incinerator shall not exceed 145 ppmv, on a dry basis, corrected to 7% O<sub>2</sub> (24-hour average).

b. The concentration of carbon monoxide in the exit gas from the incinerator shall not exceed 100 ppmv, on a dry basis, corrected to 7% O<sub>2</sub> (monthly average).

c. The emission rate of carbon monoxide discharged to the atmosphere shall not exceed 6.53 lbs/hr.

3. Particulate Matter (PM)

a. The emission rate of particulate matter discharged to the atmosphere shall not exceed 0.40 pounds per ton of dry sludge input or a maximum of 1.75 lbs/hr, whichever is more stringent.

b. The concentration of particulate matter discharged to the atmosphere shall not exceed 0.015 grains per dry standard cubic foot.

4. Particulate Matter less than 10 microns in diameter (PM<sub>10</sub>)

The owner/operator shall conduct emissions testing for PM<sub>10</sub> emissions (including condensable particulate matter) during the emissions testing required in Condition D.1. Based on the results of the testing, the owner/operator shall propose to the

Office of Air Resources, no later than 60 days following completion of testing, PM<sub>10</sub> emissions limitations for inclusion in this permit.

5. Sulfur Dioxide (SO<sub>2</sub>)

- a. The emission rate of sulfur dioxide discharged to the atmosphere shall not exceed 1.0 pound per ton of dry sludge input or a maximum of 4.38 lbs/hr, whichever is more stringent.
- b. All fuel oil burned in the FBC shall contain no more than 0.3 percent sulfur by weight.

6. Volatile Organic Compounds (VOCs)

The emission rate of total volatile organic compounds discharged to the atmosphere shall not exceed 0.36 pound per ton of dry sludge input or a maximum of 1.58 lbs/hr, whichever is more stringent.

7. Opacity

Visible emissions discharged into the atmosphere shall not exceed 10% opacity (six-minute average) while sludge is being charged to the incinerator from the sludge metering device. Where the presence of uncombined water is the only reason for failure to meet this requirement, such failure shall not be a violation of this permit.

8. Listed Toxic Air Contaminants

The total quantity of any listed toxic air contaminant discharged to the atmosphere from the FBC shall not exceed the limitations shown in Table 1. The limitations shown in pounds per year are calculated on a 12-month rolling basis. These limitations were established to ensure that emissions from this facility do not exceed any of the acceptable ambient levels (AALs) listed in Air Pollution Control Regulation No. 22.

9. Hazardous Air Pollutants (HAP)

The total quantity of HAP emissions discharged to the atmosphere from the entire facility shall not exceed 18,000 pounds of any one (1) HAP or 48,000 pounds of any combination of HAPs in any consecutive 12-month period.

B. Operating Requirements

1. All emissions generated from the FBC shall be captured, contained, and routed to an air pollution control system, consisting of a variable throat venturi/impingement tray wet scrubbing system (Approval No. XXXX) and the Beltran Wet Electrostatic

Precipitator (WESP) (Approval No. 1054), for treatment prior to discharge to the atmosphere.

2. The operating temperature of the fluidized sand bed shall be maintained at or above 1200°F whenever sludge is being charged to the FBC.
3. The FBC shall be equipped with an interlock to prevent sludge from being charged to the FBC if the operating temperature of the fluidized sand bed is less than 1200°F.
4. The oxygen content of the FBC exhaust gas, measured in the stack upstream of any sources of dilution air, shall be maintained at or above 2% whenever sludge is being charged to the FBC. Sludge shall cease being charged to the FBC if the measured oxygen content of the FBC exhaust gas is less than 2% for greater than 2 consecutive minutes.
5. The temperature of the FBC exhaust gas shall be maintained at or above 1400°F (1-hour average) whenever sludge is being charged to the FBC. Sludge shall cease being charged to the FBC if the temperature of the FBC exhaust gas is less than 1400°F (1-hour average).
6. The FBC shall be operated according to its design specifications whenever it is being charged with sludge or is emitting air contaminants.
7. The owner/operator shall limit the quantity of sludge input to the FBC to 38,400 dry tons or less, for any consecutive 12-month period.
8. The air pollution control system, consisting of a variable throat venturi/impingement tray wet scrubbing system (Approval No. XXXX) and the WESP (prior Approval No. 1054), shall be in operation whenever the FBC is in operation and is being charged with sludge

#### C. Monitoring Requirements

1. The owner/operator shall install, calibrate, maintain, and operate equipment to allow for the measurement of the volume of sludge charged to the FBC. The measuring device(s) shall be certified by the manufacturer to have an accuracy of  $\pm 5$  percent over its operating range.
2. The owner/operator shall provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.
3. The owner/operator shall collect and analyze a grab sample of the sludge feed to the FBC once per day. The dry sludge content and volatile solids content of the sample shall be analyzed using “209 F, Method for Solid and Semisolid Samples”.
4. The owner/operator shall install, calibrate, maintain, and operate a monitoring device that continuously measures the pressure drop of the gas flow through the

combination wet scrubbing system. The device used to monitor scrubber pressure drop shall be certified by the manufacturer to be accurate within 250 pascals ( $\pm 1$  inch water gage) and shall be calibrated on an annual basis in accordance with the manufacturer's instructions.

5. The owner/operator shall install, calibrate, maintain, and operate monitoring devices that continuously measure the scrubber water flow rates to each scrubbing system component (variable throat venturi and impingement tray). The devices used to monitor the scrubbing water flow rates shall be certified by the manufacturer to be accurate within  $\pm 5\%$  over their operating ranges and shall be calibrated on an annual basis in accordance with the manufacturer's instructions.
6. The owner/operator shall install, calibrate, maintain and operate a monitoring device that continuously measures the oxygen content of the exhaust gas in the FBC. The oxygen monitor shall be located in the stack, upstream of any sources of dilution air. The oxygen monitoring device shall be certified by the manufacturer to have a relative accuracy of  $\pm 5$  percent over its operating range, and shall be calibrated according to method(s) prescribed by the manufacturer at least once each 24-hour operating period.
7. The owner/operator shall install, calibrate, maintain, and operate temperature measuring devices in the fluidized sand bed and in the outlet of the FBC. The temperature monitor for the outlet of the FBC shall be located upstream of the fluidizing air preheater. Each temperature measuring device shall be certified by the manufacturer to have an accuracy of  $\pm 5$  percent over its operating range.
8. The owner/operator shall install, calibrate, maintain, and operate a device for measuring the auxiliary fuel flow to the FBC. The flow measuring device shall be certified by the manufacturer to have an accuracy of  $\pm 5$  percent over its operating range.
9. The owner/operator shall install, calibrate, maintain, and operate an instrument that continuously measures and records the carbon monoxide concentration in the FBC exhaust stack during all periods of operation.
  - a. The continuous emissions monitoring system for carbon monoxide must satisfy USEPA performance specifications and quality assurance procedures in 40 CFR 60, Appendices B & F, as applicable.
  - b. The permittee shall check the zero (or low-level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily in accordance with the applicable requirements of 40 CFR 60 Subpart A and Appendix B.
  - c. The continuous monitoring system for carbon monoxide shall complete a minimum of one cycle of operation (sampling, analyzing and data recording) for each successive 15-minute period.

- d. All data shall be reduced to 24-hour averages, computed from four or more data points equally spaced over each 1-hour period. Data recorded during periods of continuous monitoring system breakdowns, repairs, calibrations checks, zero and span adjustments shall not be included in the data averages computed.
10. The owner/operator shall install, calibrate, maintain, and operate a monitoring device for measuring the volumetric flow rate from the fluidizing air blower.
11. The owner/operator shall submit to the Office of Air Resources, for review and approval, within 60 days of startup, a proposed monitoring plan for verifying compliance with the emission limitations in this permit. The proposal shall include a top-down evaluation of alternative approaches and discuss the technical and/or economic considerations for not including any approach in the proposed monitoring plan. The approaches to be evaluated in top-down order are:
  - a. Direct measurement of the emitted pollutants by a continuous emission monitoring system.
  - b. Direct measurement of the emitted pollutants by intermittent stack testing. The frequency of intermittent stack testing considered should include monthly, quarterly, annually, and once during each operating permit cycle (every five years.)
  - c. Indirect measurement of the emitted pollutants by periodic sludge sampling. Evaluation of this approach should include daily (or other representative period) sludge sampling and a demonstration that a relationship exists between the sludge concentration and the pollutant being emitted.
  - d. Parametric monitoring of operating parameters.
  - e. Other methods.

#### D. Testing Requirements

1. Within 180 days of commencing operation of the FBC, emissions testing shall be conducted for particulate matter, particulate matter less than 10 microns in diameter, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds and each listed toxic air contaminant in Table 1.
  - a. An emission testing protocol shall be submitted to the Office of Air Resources for review and approval prior to the performance of any emissions tests. The owner/operator shall provide the Office of Air Resources at least 60 days prior notice of any emissions test.

- b. All test procedures used for emissions testing shall be conducted in accordance with Appendix A of 40 CFR 60 or another method approved by the Office of Air Resources and U.S. Environmental Protection Agency (EPA) prior to the performance of any emissions tests.
  - c. The owner/operator shall install any and all test ports or platforms necessary to conduct the required testing, provide safe access to any platforms, and provide the necessary utilities for sampling and testing equipment.
  - d. All testing shall be conducted under operating conditions deemed acceptable and representative for the purpose of assessing compliance with the applicable emission limitations.
  - e. The owner/operator shall notify the Office of Air Resources at least 60 days before the tests are scheduled in order to allow for testing to be observed by an Office of Air Resources representative.
  - f. A final report of the results of any compliance testing shall be submitted to the Office of Air Resources no later than 60 days following completion of testing.
  - g. All emissions testing must be observed by the Office of Air Resources or its authorized representatives to be considered acceptable.
2. At least once every four calendar quarters, the owner/operator shall conduct a relative accuracy evaluation of the oxygen monitor. This evaluation shall compare oxygen concentrations as measured by the oxygen monitor required by Condition C.6 to oxygen concentration measurements taken at a location upstream of the fluidizing air preheater. The relative accuracy of the two measurements shall not exceed 10%.
- a. A testing protocol shall be submitted to the Office of Air Resources for review and approval prior to the performance of any relative accuracy evaluation. The owner/operator shall provide the Office of Air Resources at least 60 days prior notice of any relative accuracy evaluation.
  - b. A final report of the results of any relative accuracy evaluation shall be submitted to the Office of Air Resources no later than 60 days following completion of testing.

E. Fuel Oil Testing

- 1. Compliance with fuel oil sulfur limits may be determined based on a certification from the fuel supplier.



2. Fuel supplier certification shall include the following information:
  - a. The name of the oil supplier;
  - b. A statement from the oil supplier that the oil complies with the specification for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78 "Standard Specification for Fuel Oils";
  - c. The sulfur content of the fuel oil; and
  - d. The method used to determine the sulfur content of the fuel oil.
3. As an alternative to fuel supplier certification, the owner/operator may elect to sample the fuel prior to combustion. Sampling and analysis shall be conducted for the oil in the initial tank of oil to be fired in the FBC and after each new shipment of oil is received. Samples shall be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted.

F. Recordkeeping and Reporting Requirements

1. The owner/operator shall continuously record the following information during all periods of operation of the FBC:
  - a. The mass of the sludge charged to the FBC.
  - b. The fluidized sand bed and outlet temperatures of the FBC.
  - c. The auxiliary fuel flow to the FBC.
  - d. The pressure drop of the gas flow through the combined wet scrubber system (venturi and tray scrubber).
  - e. The water flow rate through each wet scrubbing system component (venturi and tray scrubber).
  - f. The oxygen content of the FBC's exhaust.
  - g. The carbon monoxide concentration.
  - h. The volumetric flow rate from the fluidizing air blower.
2. The owner/operator shall maintain records of the quantities of sludge received, the source of the sludge, and the date the sludge was received.

3. The owner/operator shall maintain a record of the total solids and volatile solids content of the sludge charged to the FBC.
4. The owner/operator shall determine compliance with the sludge throughput limitation contained in Condition B.7 of this permit by using the total solids content and hourly sludge feed rates to calculate the dry tons of sludge charged to the FBC during the previous 12 months. This calculation shall be performed each month, no later than 15 days after the first of each month.
5. The owner/operator shall notify the Office of Air Resources within 15 days whenever the dry tons of sludge charged to the FBC exceeds 38,400 dry tons during any consecutive 12-month period.
6. The owner/operator shall retain copies of all fuel supplier certifications for each calendar quarter. These records shall be made accessible for review by the Office of Air Resources or EPA. This quarterly record shall include a certified statement, signed by the owner/operator, that the records of fuel supplier certifications submitted represent all of the fuel combusted during the quarter.
7. The owner/operator shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the FBC, any malfunction of the wet scrubbing system or the WESP serving the FBC, or any periods during which a continuous monitoring system or monitoring device is inoperative.
8. The owner/operator shall maintain a file of all measurements, including continuous monitoring system, monitoring devices, and performance testing measurements; all CMS calibration checks; adjustments and maintenance performance on these systems or devices; and all other information required shall be recorded in a permanent form suitable for inspection.
9. The owner/operator shall notify the Office of Air Resources in writing of the anticipated date of the initial start-up of the FBC not more than 60 days nor less than 30 days prior to such date.
10. The owner/operator shall notify the Office of Air Resources in writing of the actual initial start-up of the FBC no later than 15 days after such date.
11. The owner/operator shall notify the Office of Air Resources, in writing, of the date(s) of removal or permanent disablement of the existing Nichols 29-5 Herreshoff multiple hearth furnace and the Emtrol venturi/impingement tray scrubber no later than 15 days after such date(s).
12. The owner/operator shall, on a monthly basis, no later than 5 days after the first of the month, determine the total quantity of hazardous air pollutants (HAPs) discharged to the atmosphere from the entire facility. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.

13. The owner/operator shall notify the Office of Air Resources in writing, within 15 days, whenever the total quantity of HAPs discharged to the atmosphere from the entire facility exceeds 18,000 pounds of any one (1) HAP or 48,000 pounds of any combination of HAPs in any consecutive 12-month period.
14. The owner/operator must notify the Office of Air Resources no later than 24 hours after an exceedance of any emission limitation is discovered. Notification shall include:
  - Identification of the emission limitation exceeded
  - Suspected reason for the exceedance
  - Corrective action taken or to be taken
  - Anticipated length of the exceedance
15. The owner/operator shall submit to the Office of Air Resources and EPA, semi-annually, a report in writing, which contains the following:
  - a. A record of average scrubber pressure drop measurements for each period of 15 minutes duration or more during which the pressure drop of each combined wet scrubber system (venturi and tray scrubber) was less than a scrubber pressure drop reduction of 30% from the average scrubber pressure drop measured during the most recent performance test.
  - b. A record of average oxygen content in the exhaust gas of the FBC for each period of 1-hour duration or more that the oxygen content of the FBC exhaust exceeds the average oxygen content measured during the most recent performance test by 3 percent.
16. The owner/operator shall notify the Office of Air Resources of any anticipated noncompliance with the terms of this permit or any other applicable air pollution control rules and regulations.
17. The owner/operator shall notify the Office of Air Resources of any noncompliance with the terms of this permit, in writing, within 5 days of the occurrence.
18. The owner/operator shall notify the Office of Air Resources in writing of any planned physical or operational change to any equipment that would:
  - a. Change the representation of the facility in the application.
  - b. Alter the applicability of any state or federal air pollution rules or regulations.
  - c. Result in the violation of any terms or conditions of this permit.

d. Qualify as a modification under APCR No. 9.

Such notification shall include:

- Information describing the nature of the change.
- Information describing the effect of the change on the emission of any air contaminant.
- The scheduled completion date of the planned change.

Any such change shall be consistent with the appropriate regulation and have the prior approval of the Director.

19. All records required as a condition of this approval must be made available to the Office of Air Resources or its representative upon request. These records must be maintained for a minimum of five years after the date of each record.

G. Other Permit Conditions

1. To the extent consistent with the requirements of this permit and applicable federal and state laws, the facility shall be designed, constructed, and operated in accordance with the representation of the facility in the permit application prepared by ESS Group, Inc., dated April 2004 and any revisions.
2. The FBC is subject to the requirements of the Federal New Source Performance Standard 40 CFR 60 Subpart A, "General Provisions" and Subpart O, "Standards of Performance for Sewage Treatment Plants" and the National Emission Standard for Hazardous Air Pollutants 40 CFR 61 Subpart A, "General Provisions", Subpart C, "National Emission Standard for Beryllium", and Subpart E, "National Emission Standard for Mercury." Compliance with all applicable provisions therein is required, unless otherwise stated in this permit.
3. Employees of the Office of Air Resources and its authorized representatives shall be allowed to enter the facility at all times for the purpose of inspecting any air pollution source, investigating any condition it believes may be causing air pollution or examining any records required to be maintained by the Office of Air Resources.
4. At all times, including periods of startup, shutdown, and malfunction, the owner/operator shall, to the extent practicable, maintain and operate the facility in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Office of Air Resources which may include, but is not limited to, monitoring results,

opacity observations, review of operating and maintenance procedures, and inspection of the source.

5. Approval No. 126 issued by the Rhode Island Department of Health, Division of Air Pollution Control, on 6 March 1974 for the Nichols 29-5 Herreshoff MHF and the Emtrol venturi/impingement tray scrubber is revoked upon receipt of notification of the removal or permanent disablement of the systems.
6. The Office of Air Resources may reopen and revise this permit if it determines that:
  - a. a material mistake was made in establishing the operating restrictions; or,
  - b. inaccurate emission factors were used in establishing the operating restrictions; or,
  - c. emission factors have changed as a result of stack testing or emissions monitoring.

#### H. Malfunctions

1. In the case of a malfunction of any air pollution control system, all reasonable measures shall be taken to assure resumption of the designed control efficiency as soon as possible. In the event that the malfunction of the air pollution control system is expected or may reasonably be expected to continue for longer than 24 hours and if the owner or operator wishes to operate the source on which it is installed at any time beyond that period, the Director shall be petitioned for a variance under Section 23-23-15 of the General Laws of Rhode Island, as amended. Such petition shall include, but is not limited to, the following:
  - a. Identification of the specific air pollution control system and source on which it is installed;
  - b. The expected period of time that the air pollution control system will be malfunctioning or out of service;
  - c. The nature and quantity of air contaminants likely to be emitted during said period;
  - d. Measures that will be taken to minimize the length of said period;
  - e. The reasons that it would be impossible or impractical to cease the source operation during said period.
2. Malfunction means a sudden and unavoidable breakdown of process or control equipment. The owner/operator may seek to establish that a malfunction of any air pollution control system that would result in noncompliance with any of the terms of

this permit or any other applicable air pollution control rules and regulations was due to unavoidable increases in emissions attributable to the malfunction. To do so, the owner/operator must demonstrate to the Office of Air Resources that:

- a. The malfunction was not attributable to improperly designed air pollution control equipment, lack of preventative maintenance, careless or improper operation, or operator error;
- b. The malfunction was not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
- c. Repairs were performed in an expeditious fashion. Off-shift labor and overtime should be utilized, to the extent practicable, to ensure that such repairs were completed as expeditiously as practicable.
- d. All possible steps were taken to minimize emissions during the period of time that the repairs were performed.
- e. Emissions during the period of time that the repairs were performed will not:
  - (1) Cause an increase in the ground level ambient concentration at or beyond the property line in excess of that allowed by Air Pollution Control Regulation No. 22; and
  - (2) Cause or contribute to air pollution in violation of any applicable state or national ambient air quality standard.
- f. The reasons that it would be impossible or impractical to cease the source operation during said period.
- g. The owner/operator's action in response to the excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence.

This demonstration must be provided to the Office of Air Resources, in writing, within two working days of the time when the malfunction occurred and contain a description of the malfunction, any steps taken to minimize emissions and corrective actions taken.

The owner/operator shall have the burden of proof in seeking to establish that noncompliance was due to unavoidable increases in emissions attributable to the malfunction.

Table 1. Emissions Limitations for Listed Toxic Air Contaminants

Pollutant	Limitation		
	pounds/hour	pounds/day	pounds/year
Arsenic & compounds <sup>a</sup> (inorganic)	0.049	--	10.64
Benzene	40	800	5,000
Beryllium & compounds <sup>a</sup>	--	0.022 <sup>b</sup>	8.03
Bis(2-ethylhexyl)phthalate	--	1,800	18,000
Cadmium & compounds <sup>a</sup>	--	2.6	31.9
Chloroform	24	--	10,600
Chromium VI & compounds <sup>a</sup> -solid particulate	--	4.25	4.25
1,2 Dichlorobenzene	--	54.7	--
1,4 Dichlorobenzene	1,000	4,780	4,780
Hydrogen Chloride	490	--	18,000
Lead & compounds <sup>a</sup> , inorganic	--	--	80
Manganese & compounds <sup>a</sup>	--	1.348	492
Mercury & compounds <sup>a</sup>	0.497	7.1 <sup>c</sup>	479.23
Naphthalene	--	--	15,970
Nickel & compounds <sup>a</sup>	1.4	--	200
Sulfuric Acid	24.8	--	18,000
Total 2,3,7,8 TCDD equivalents	--	--	1.596E-04

<sup>a</sup> For metal compounds, limitations apply to the metal portion of the compound.

<sup>b</sup> In the case of the daily limit for beryllium, the NESHAPS limit in 40 CFR 61 Subpart C of 10 grams (0.022 pound) per 24 hours is a lower limit than that back-calculated using the AAL and the modeling results. The federal limit is therefore used.

<sup>c</sup> In the case of the daily limit for mercury, the NESHAPS limit in 40 CFR 61 Subpart E of 3.2 kilograms (7.1 pounds) per 24 hours is a lower limit than that back-calculated using the AAL and the modeling results. The federal limit is therefore used.