Appendix B
BUREAU OF AIR MANAGEMENT
NEW SOURCE REVIEW PERMIT
TO CONSTRUCT AND OPERATE A STATIONARY SOURCE

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

<table>
<thead>
<tr>
<th>Owner/Operator</th>
<th>Wheelabrator Bridgeport, L.P.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>6 Howard Avenue, Bridgeport, CT 06605</td>
</tr>
<tr>
<td>Equipment Location</td>
<td>6 Howard Avenue, Bridgeport, CT 06605</td>
</tr>
<tr>
<td>Equipment Description</td>
<td>Babcock &amp; Wilcox/Von Roll Reciprocating Grate, Waterwall Furnace, Watertube Boiler No. 1</td>
</tr>
<tr>
<td>Town-Permit Numbers</td>
<td>015-0097</td>
</tr>
<tr>
<td>Premises Number</td>
<td>0765</td>
</tr>
<tr>
<td>Stack Number</td>
<td>010</td>
</tr>
</tbody>
</table>
| Prior Permit Issue Dates | October 23, 1985 (Permit to Construct)  
                          | February 15, 1990 (Original Permit to Operate)  
                          | October 31, 1997 (Revision)  
                          | February 11, 2002 (Revision)  
                          | August 9, 2004 (Modification)  
                          | November 27, 2013 (Modification) |
| Modification Issue Date | October 21, 2016             |
| Expiration Date      | None                          |

/s/ Anne Gobin for October 21, 2016
Robert J. Klee
Commissioner
This permit specifies necessary terms and conditions for the operation of this equipment to comply with state and federal air quality standards. The Permittee shall at all times comply with the terms and conditions stated herein.

PART I. DESIGN SPECIFICATIONS

A. General Description

Wheelabrator Bridgeport, L.P. operates a resource recovery facility. The facility has three Babcock & Wilcox waterwall furnace/watertube boiler systems which combust municipal solid waste (MSW) and special waste to produce steam. The steam produced is in turn sold, used for heating, or used by the steam turbine to produce electricity. Natural gas is used for startup and flame stabilization. Each municipal waste combustor (MWC) is equipped with a spray dryer absorber for acid gas control, a fabric filter for particulate matter control, a powdered activated carbon injection system for control of mercury and a selective non-catalytic reduction system for control of NOx emissions. Each MWC is also equipped with continuous emission monitors to monitor opacity, SO2, NOx and CO.

B. Equipment Design Specifications

1. Municipal Waste Combustor
   a. Design Maximum Charging Rate: 750 ton/day of MSW based on a design higher heating value of 5,200 BTU/lb
   b. Maximum Heat Input Rate: 325 MMBTU/hr
   c. Design Steam Flow Rate: 196,800 lb/hr @ 900 psig and 830°F

2. Auxiliary Burner System: This furnace/boiler shall be equipped with an auxiliary burner system that shall have the capability of raising combustion gas temperatures to 1800°F for a combustion gas residence time of at least one second, except during periods of start-up, shutdown, and malfunction. Such system shall be capable of maintaining a minimum combustion gas temperature of 1500°F after secondary air injections for at least one second. The combustion gas temperature when firing MSW, at all times, shall be at a minimum of 1800°F for a minimum of one second residence time, measured at the one second plane. Measurement of the superheater outlet temperature is a surrogate for the furnace/combustion gas temperature and residence time based on the time-temperature test.¹
   a. Number of Burners: two
   b. Burner Manufacturer/Model No: Babcock & Wilcox
   c. Maximum Auxiliary Fuel Firing Rate: 70 MCF/hr each burner
   d. Maximum Gross Heat Input: 70 MMBTU/hr each burner

3. Nominal Output: 69.5 MW total plant

4. Overfire and underfire air will be maintained to obtain optimum combustion.

¹ Superheater outlet temperature is monitored and converted to furnace or combustion gas temperature at the one second plane based on the time-temperature test results, in order to determine compliance with the 1800°F for a minimum of one second residence time requirement.
5. This furnace/boiler shall be equipped with automatic controls for the regulation of combustion; for example, air distribution and combustion gas temperature controls.

C. Control Equipment Design Specifications

The following specifications need not be verified on a continuous basis; however, if requested by the Commissioner, demonstration shall be shown.

1. Fabric Filter: 10 compartments @ 8280 ft$^2$ each - a minimum of 8 compartments shall be in service when the unit is operating.
   a. Make and Model: Wheelabrator-Frye
   b. Air/Cloth Ratio: 2.28:1 (with 10 compartments) and 2.85:1 (with 8 compartments)
   c. Bag Material: fiberglass with acid resistant finish or fiberglass with ePFTE membrane
   d. Cleaning Method: Automatic
   e. Pressure Drop Across Each Compartment: 3.5-15 in H$_2$O
   f. Pressure Drop Across Baghouse: 3.5-15 in H$_2$O
   g. Inlet Temperature: Not to exceed 17°C (30° F), based on a 4-hour arithmetic average, above the maximum demonstrated particulate matter control device inlet temperature (RCSA §22a-174-38(g)(1))
   h. Design Removal Efficiency: 99% +

2. Spray Dryer Absorber
   a. Make and Model: Wheelabrator-Frye
   b. Lime Usage: 0-1400 lb/hr
   c. Water Usage: 0-45 gal/ min
   d. Inlet Gas Temperature: 400-550°F

3. Selective NonCatalytic Reduction (SNCR)
   a. Make and Model: Halcyon Mechanical Services
   b. Control Reagent: Urea
   c. Reagent Injection Rate: 0-35 gal/hr
   d. Temperature Range: 1600-2100°F
   e. Furnace Mixing Time: minimum 0.5 sec

4. Powdered Activated Carbon Injection System: Operational parameters required to achieve maximum mercury reduction are established by stack test results:
   a. Make and Model: Halcyon Technologies PACIS
   b. Control Reagent: Powdered Activated Carbon
   c. Reagent Injection Rate: 0-50 lb/hr
   d. Design Removal Efficiency: 85%

D. Stack Parameters

1. Minimum Stack Height: 295 ft above grade

2. Minimum Exhaust Gas Flow Rate: 189,000 acfm @ 250°F
3. Normal Stack Exit Temperature, Range: 250-350°F

4. Minimum Distance from Stack to Property Line: 104 ft

PART II. OPERATIONAL CONDITIONS

A. Operational Parameters

1. Municipal Waste Combustor
   a. Material(s) Charged:
      i. Municipal solid waste, as defined and restricted under CGS §22a-207 et seq. and any applicable Bureau of Materials Management and Compliance Assurance permit.
      ii. Special waste as defined in RCSA §22a-209-1 and in accordance with the Permittee's most recently DEEP approved Special Waste Disposal Plan issued pursuant to CGS §22a-208y.
   b. Maximum Allowable Daily Charging Rate
      i. The Maximum Allowable Daily Charging Rate for MSW is based upon the maximum allowable heat input rate to the furnace/boiler of 325 MMBTU/hr in accordance with the chart in Appendix G of this permit setting forth the maximum allowable daily MSW charging rate (ton/day) as a function of the MSW higher heating value (BTU/lb).
      ii. The Permittee shall combust no more than 180 tons per day of Special Waste in total for the three municipal waste combustor units at this facility.
      iii. Medical waste, or waste that originated as medical waste, shall not be combusted in this unit, unless it is done in compliance with II.A.1.b.ii of this permit.
   c. Maximum Steam Flow Rate: 216,480 lb/hr
   d. Maximum Hours of Operation: Daily: 24; over any consecutive 12-month period: 8760

2. Auxiliary Burner System
   a. Fuel Type: Natural Gas
   b. Annual Capacity Factor, as defined in 40 CFR §60.41b, shall not exceed 10%, in accordance with 40 CFR §60.44b(d).

3. The Permittee may install no later than August 1, 2017, a Flue Gas Recirculation (FGR) system to improve SNCR performance. Installation and operation of the FGR system shall not preclude the Permittee from complying with all other conditions listed in this permit.

4. The Permittee shall not cause or allow such unit to operate at a temperature, measured at each particulate control device inlet, more than 17 degrees centigrade, based on a 4-hour arithmetic average, above the maximum demonstrated particulate control device temperature measured during the most recent performance test for dioxin/furan emissions for which compliance with the dioxin/furan emissions limit was achieved. [RCSA §22a-174-38(g)(1)]

5. The Permittee shall not cause or allow such unit to operate at a municipal waste combustor unit load greater than 110% of the maximum demonstrated 4-hour average municipal waste combustor unit load, based on a 4-hour arithmetic average, measured during the most recent performance test for dioxin/furan emissions for which compliance with the dioxin/furan emissions limit was achieved. Municipal waste combustor unit load shall be measured by a steam flow meter. [RCSA §22a-174-38(g)(2)]
PART III. CONTINUOUS EMISSION MONITORING REQUIREMENTS AND ASSOCIATED EMISSION LIMITS

The Permittee shall comply with the CEM requirements as set forth in RCSA §22a-174-4. CEM shall be required for the following pollutant/operational parameters and enforced on the following basis:

<table>
<thead>
<tr>
<th>Pollutant/Operational Parameter</th>
<th>Averaging Times</th>
<th>Emission Limit</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opacity</td>
<td>6-minute block</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>SO$_2$</td>
<td>24-hour daily geometric average</td>
<td>$29^2$</td>
<td>ppmvd @ 7% O$_2$</td>
</tr>
<tr>
<td>NO$_x$</td>
<td>24-hour block</td>
<td>200 (Prior to August 2, 2017)</td>
<td>ppmvd @ 7% O$_2$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 (On or after August 2, 2017)</td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>4-hour block</td>
<td>100</td>
<td>ppmvd @ 7% O$_2$</td>
</tr>
<tr>
<td>O$_2$</td>
<td>1-hour</td>
<td></td>
<td>lb/hr</td>
</tr>
<tr>
<td>Unit Load</td>
<td>4-hour block</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Combined Overfire and Underfire Air</td>
<td></td>
<td></td>
<td>a cfm</td>
</tr>
<tr>
<td>Furnace Temperature</td>
<td>4-hour block</td>
<td></td>
<td>°F</td>
</tr>
<tr>
<td>Pressure Drop Across the Baghouse</td>
<td></td>
<td></td>
<td>in H$_2$O</td>
</tr>
<tr>
<td>Baghouse Inlet Temperature</td>
<td>4-hour block</td>
<td></td>
<td>°C or °F</td>
</tr>
<tr>
<td>Activated Carbon Injection Rate</td>
<td>8-hour block</td>
<td></td>
<td>lb/hr</td>
</tr>
</tbody>
</table>

A. The Permittee shall install and operate CEM equipment to monitor and record opacity, sulfur dioxide (SO$_2$), nitrogen oxides as nitrogen dioxide (NO$_2$), carbon monoxide (CO) and oxygen (O$_2$).

B. The Permittee shall also install and operate continuous monitoring systems for measuring and recording unit load (i.e., steam flow meter), total combined overfire and underfire air, furnace temperature as measured at the superheater outlet, pressure drop across the baghouse, baghouse inlet temperature, and powdered activated carbon injection rate.

C. This furnace shall be equipped to measure the required combustion temperatures and associated required residence times.

D. The Permittee shall install and use dedicated CEM analyzers. Each furnace flue exhaust shall have its own set of CEM analyzers and there shall be no shared analyzers.

E. The Permittee shall review all recorded CEM data daily and notify the Commissioner in writing, on forms prescribed by the Commissioner, of any deviation from an emissions or parametric limitation, and shall identify the cause or likely cause of such deviation, all corrective actions and preventive measures taken with respect thereto, and the dates of such actions and measures as follows: (1) For any hazardous air pollutant, no later than 24 hours after such deviation commenced; and (2) For any other regulated air pollutant or parameter, no later than ten days after such deviation commenced.

---

2 Or a 75% reduction by weight or volume, whichever is less stringent.
3 Pursuant to RCSA §22a-174-38(c)(8), prior to August 2, 2017, the Permittee shall not cause or allow the emission of NO$_x$ in excess of 200 ppmvd @ 7% O$_2$. On or after August 2, 2017, the Permittee shall not cause or allow the emission of NO$_x$ in excess of 150 ppmvd @ 7% O$_2$.
F. Continuous monitors and recorders required by this permit shall be installed, calibrated, tested and operated to measure and record the emissions and parameters in a manner that demonstrates compliance with siting, performance and quality assurance specifications stated in 40 CFR Part 60 Appendices B and F, RCSA §22a-174-38(j) and RCSA §22a-174-4.

G. The Permittee shall report all CEM data to the Commissioner on a quarterly basis, in accordance with RCSA §22a-174-38(l)(2).

PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Monitoring and Record Keeping Requirements

1. The Permittee shall make and keep records summarizing:
   a. the monthly quantity of MSW combusted for the facility. The monthly quantity of MSW combusted for the facility shall be determined by summing the truck scale house weight data for the month minus the refuse pit inventory. The pit inventory will be measured on the Sunday nearest to the end of the month and pro-rated for the full month.
   b. the combined monthly total quantity of Special Waste received by the facility in accordance with the most recently DEEP approved Special Waste Disposal Plan. These records shall identify the categories of Special Waste received by the facility each month and the corresponding monthly totals for each of these categories.
   c. the monthly quantity of natural gas combusted by the furnace/boiler, using either fuel purchase receipts or a non-resettable totalizing fuel meter.

2. The Permittee shall monitor and record the Special Waste daily charging rate for each of the three municipal solid waste combustors and the combined daily total for the facility.

3. The Permittee shall calculate and record the consecutive 12-month quantity of MSW and Special Waste combusted at the facility by adding the current month's MSW and Special Waste combusted to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of each month.

4. The Permittee shall calculate and record the consecutive 12-month natural gas consumption by adding the current month's fuel consumed to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of each month.

5. The Permittee shall calculate and record the annual capacity factor for natural gas for each calendar quarter. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month. [40 CFR 60.49b(d)]

6. The Permittee shall keep sufficient records to determine compliance with the required combustion temperatures and associated required residence times. These records shall include the time-temperature test results, monitoring records of furnace temperature as measured at the superheater outlet, and a sample calculation identifying the superheater outlet temperature corresponding to a combustion gas temperature of 1800°F for a minimum of one second residence time, measured at the one second plane.

7. The Permittee shall make and keep records of the dates and time periods for startup and shutdown events for each furnace/boiler. [RCSA §22a-174-38(k)(13)]
8. The Permittee shall keep records of the occurrence and duration of any malfunction in the operation of each furnace/boiler and/or associated pollution control equipment.

9. The Permittee shall make and keep records summarizing all CEM data required in Part III of this permit. [RCSA §22a-174-38(k)(3)]

10. The Permittee shall make and keep records of all annual performance tests conducted to determine compliance with the particulate matter, dioxin/furan, cadmium, lead, mercury and ammonia emission limits.

11. The Permittee shall make and keep records of all performance tests conducted to determine compliance with any pollutant emission rate or operational parameter, if such tests are required by the Commissioner.

12. The Permittee shall calculate and record the monthly and consecutive 12-month PM, SO\textsubscript{2}, NO\textsubscript{x}, VOC, CO, Pb, HCL and ammonia emissions in units of tons. The consecutive 12-month emissions shall be determined by adding (for each pollutant) the current month’s emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.

13. The Permittee shall make and keep records of the ASC and MASC for the pollutants listed in RCSA §22a-174-29 and emitted by this equipment.

14. The Permittee shall make and keep records of the date, the time of the shift, the name of the operator of that shift and the operator’s certification. [RCSA §22a-174-38(h)(1)]

15. The Permittee shall make and keep records of the name of each person that has reviewed the operating manual, the date of initial review and the date of the annual review. [RCSA §22a-174-38(h)(5)]

16. The Permittee shall make and keep records of operator training and certification in accordance with RCSA §22a-174-38(k)(2).

17. The Permittee shall make and keep records for the carbon injection system in accordance with RCSA §22a-174-38(k)(11).

18. The Permittee shall make and keep for each municipal waste combustor unit, the following records of air pollution control device operation [RCSA §22a-174-38(k)(12)]:

   a. For each reagent, the feed rate to the air pollution control device, measured in kilograms per hour or pounds per hour, during the annual particulate emissions performance tests, with supporting calculations;
   b. For each reagent, the feed rate to the air pollution control device, measured in kilograms per hour or pounds per hour, for each hour of operation, with supporting calculations; and
   c. For each calendar quarter, total reagent usage for each municipal waste combustor unit in kilograms or pounds for each calendar quarter.

19. The Permittee shall keep all records required by this permit on premises for a period of no less than five years and shall submit such records to the Commissioner upon request.
B. Reporting

1. The Permittee shall provide written notification to the Commissioner within 72 hours of the time at which the Permittee receives information regarding performance test results indicating that any particulate matter, opacity, cadmium, lead, mercury, ammonia, dioxin/furan, hydrogen chloride or fugitive ash emission levels exceed the applicable pollutant emission limits or standards defined in RCSA §22a-174-38.

2. The Permittee shall submit reports to the Commissioner of all required performance tests.

3. The Permittee shall submit a quarterly report to the Commissioner within 30 days following the end of each calendar quarter. Each quarterly report shall include the information required in RCSA §22a-174-38(l)(2).

4. The Permittee shall submit an annual report to the Commissioner no later than January 30 of each year following the calendar year in which the data were collected. Each annual report shall include the information required in RCSA §22a-174-38(l)(3).

5. The Permittee shall submit all RCSA §22a-174-38 applicable reports in accordance with RCSA §§22a-174-38(l)(7) through 22a-174-38(l)(9).

6. The Permittee shall notify the Commissioner, in writing, no later than August 1, 2017 of the installation and operation of a FGR system. In the event that the Permittee opts not to install a FGR system, the Permittee shall notify the Commissioner of this decision, in writing, no later than August 1, 2017.

PART V. OPERATION AND MAINTENANCE REQUIREMENTS

A. The Permittee shall not cause or allow the plant to be operated at any time unless a certified chief operator or shift operator is physically present at the plant. [RCSA §22a-174-38(h)(1)] Operators shall be certified by the Commissioner under RCSA §22a-231-1. [RCSA §22a-174-38(h)(2)] Not later than six months after the date of employment, all chief operators and shift operators must satisfactorily complete an operator training course conducted by the commissioner. [RCSA §22a-174-38(h)(3)] The equipment operators shall be trained in the operation and maintenance of both the fuel burning and pollution control equipment.

B. The Permittee shall maintain an Operating and Maintenance (O & M) Manual in accordance with RCSA §22a-174-38(h)(4). This manual shall be updated on a yearly basis. Any revision to this manual which conflicts or may conflict with any condition of this permit shall be reviewed by the Commissioner and shall receive the Commissioner's written approval prior to incorporating such revision in the O & M Manual.

C. The Permittee shall establish a training program to review the O & M Manual with each person who has responsibilities affecting the operation of the plant. The training program shall be repeated on an annual basis for each person. [RCSA §22a-174-38(h)(5)]
PART VI. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein at any time.

Table 1 - Pollutant Limits

<table>
<thead>
<tr>
<th>Criteria Pollutants</th>
<th>lb/hr</th>
<th>lb/MMBtu</th>
<th>ppmvd @ 12% CO₂</th>
<th>TPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>7.9</td>
<td>0.0243</td>
<td></td>
<td>34.6</td>
</tr>
<tr>
<td>SO₅⁴</td>
<td>104.0</td>
<td>0.32</td>
<td></td>
<td>455.6</td>
</tr>
<tr>
<td>NO₅</td>
<td>114.4</td>
<td>0.352</td>
<td></td>
<td>501.1</td>
</tr>
<tr>
<td>VOC</td>
<td>14.9</td>
<td>0.046</td>
<td>70</td>
<td>65.3</td>
</tr>
<tr>
<td>CO</td>
<td>34.1</td>
<td>0.105</td>
<td></td>
<td>149.5</td>
</tr>
<tr>
<td>Pb</td>
<td>0.13</td>
<td>0.0004</td>
<td></td>
<td>0.56</td>
</tr>
</tbody>
</table>

Table 2 - RCSA §22a-174-38 Emission Limits

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>mg/dscm @ 7% O₂</th>
<th>ppmvd @ 7% O₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>SO₂</td>
<td></td>
<td>200³⁸ (Prior to August 2, 2017)</td>
</tr>
<tr>
<td>NOₓ</td>
<td></td>
<td>150³⁶ (On or after August 2, 2017)</td>
</tr>
<tr>
<td>CO</td>
<td></td>
<td>100⁷</td>
</tr>
<tr>
<td>HCl</td>
<td></td>
<td>29⁸</td>
</tr>
<tr>
<td>Pb</td>
<td>0.400</td>
<td></td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.035</td>
<td></td>
</tr>
<tr>
<td>Mercury</td>
<td>0.028⁹</td>
<td></td>
</tr>
<tr>
<td>Dioxins/ Furans</td>
<td>0.000030</td>
<td></td>
</tr>
</tbody>
</table>

---

⁴ At 29 ppmvd, the SO₅ emission limit is 22.6 lb/hr and 98.8 TPY.
⁵ Based on a 24-hour daily geometric average or 75% reduction by weight or volume, whichever is less stringent.
⁶ Based on a 24-hour daily average.
⁷ Based on a 4-hour block average.
⁸ Or 95% reduction by weight or volume, whichever is less stringent.
⁹ Or 85% reduction by weight, whichever is less stringent.
A. The emission limits from RCSA §22a-174-38(c), as specified in Table 2 above, shall apply at all times except during periods of startup (including any warm-up period when firing natural gas only), shutdown, or malfunction as specified in RCSA §22a-174-38(c)(11):

- For determining compliance with an applicable carbon monoxide emissions limit, if a loss of boiler water level control or a loss of combustion air control is determined to be a malfunction, the duration of the malfunction period shall be limited to 15 hours per occurrence. Otherwise, the duration of each startup, shutdown or malfunction period shall be limited to three hours per occurrence;
- For the purpose of compliance with the opacity emission limits, during each period of startup, shutdown or malfunction, the opacity limits shall not be exceeded during more than five 6-minute arithmetic average measurements; and;
- During periods of startup, shutdown, or malfunction, monitoring data shall be excluded from calculations of compliance with the Table 2 emission limits but shall be recorded and reported in accordance with subsections (k) and (l) of RCSA §22a-174-38.

In the event that particulate matter, cadmium, lead, mercury, dioxin/furan, hydrogen chloride or ammonia emissions from this furnace/boiler exceed the respective emission limits, as determined through stack testing compliance data, the Permittee shall immediately initiate corrective action to re-attain compliance with this limit and shall report to the Commissioner as required under Part IV.B.1 of this permit.

In the event that SO\textsubscript{2}, NO\textsubscript{x} or CO emissions from this furnace/boiler exceed the respective emission limits, as determined through CEM compliance data, the Permittee shall immediately initiate corrective action to re-attain compliance with this limit and shall report to the Commissioner as required under Part III.E of this permit.

B. Hazardous Air Pollutants

This equipment shall not cause an exceedance of the Maximum Allowable Stack Concentration (MASC) for any hazardous air pollutant (HAP) emitted and listed in RCSA §22a-174-29. [STATE ONLY REQUIREMENT]

C. Demonstration of compliance with the above emission limits shall be determined by calculating the emission rates from the following monitoring requirements:

- PM, hydrogen chloride, cadmium, lead, mercury, dioxin/furan, ammonia: Annual Stack Test, Reference Part VII of this permit
- SO\textsubscript{x}, NO\textsubscript{x}, CO: Continuous Emission Monitoring, Reference Part III of this permit
- VOC, All Other HAPs: Initial Stack Test

1. Particulate Matter (PM)

   a. The Permittee shall not emit PM in excess of 25 mg/dscm corrected to 7% O\textsubscript{2} (dry basis). Compliance shall be determined annually based on an arithmetic average determined using all data generated in three test runs, in accordance with RCSA §22a-174-38(i)(4)(A). In the event that the PM emission rate exceeds 0.020 gr/dscf corrected to 12% CO\textsubscript{2} (dry basis), as determined through stack testing compliance data, the Permittee shall cease operation of this furnace. The furnace will be permitted to restart only after the Permittee demonstrates to the Commissioner's satisfaction that sufficient corrective action has been taken. Within three days after restarting operation under this circumstance, the Permittee shall demonstrating in writing to the Commissioner's satisfaction that it is in compliance with
the particulate emission limit.
b. Maximum AllowableOpacity: 10 percent based on a 6-minute block average

2. Sulfur Dioxide (SO₂)

The Permittee shall not emit SO₂ in excess of 29 ppmvd corrected to 7% O₂ (dry basis) based on a 24-hour daily geometric average or a 75% reduction by weight or volume, whichever is less stringent.

3. Nitrogen Oxides (NOₓ)

Effective August 2, 2017, the Permittee shall not emit NOₓ in excess of 150 ppmvd corrected to 7% O₂ (dry basis) based on a 24-hour block average. Prior to August 2, 2017, the Permittee shall not emit NOₓ in excess of 200 ppmvd corrected to 7% O₂ (dry basis) based on a 24-hour block average.

4. Carbon Monoxide (CO)

The Permittee shall not emit CO in excess of 100 ppmvd corrected to 7% O₂ (dry basis) based on a 4-hour block average.

5. Cadmium (Cd)

The Permittee shall not emit Cadmium in excess of 0.035 mg/dscm corrected to 7% O₂ (dry basis). Compliance shall be determined annually based on an arithmetic average determined using all data generated in three test runs, in accordance with RCSA §22a-174-38(i)(4)(B).

6. Lead (Pb)

The Permittee shall not emit Lead in excess of 0.400 mg/dscm corrected to 7% O₂ (dry basis). Compliance shall be determined annually based on an arithmetic average determined using all data generated in three test runs, in accordance with RCSA §22a-174-38(i)(4)(B).

7. Mercury (Hg)

The Permittee shall not emit Mercury in excess of 0.028 mg/dscm corrected to 7% O₂ (dry basis), or an 85% reduction by weight, whichever is less stringent. Compliance shall be determined annually based on an arithmetic average of emission concentrations or percent reductions determined using all data generated in a minimum of at least three test runs, in accordance with RCSA §22a-174-38(i)(4)(C).

8. Hydrogen Chloride (HCl)

The Permittee shall not emit HCl in excess of 29 ppmvd corrected to 7% O₂ (dry basis) or a 95% reduction by weight or volume, whichever is less stringent. Compliance shall be determined annually based on an arithmetic average of emission concentrations or percent reductions determined using all data generated in three test runs, in accordance with RCSA §22a-174-38(i)(4)(G).

9. Dioxin/Furan

The Permittee shall not emit Dioxin/Furan in excess of 0.0000030 mg/dscm corrected to 7%
O₂ (dry basis), total mass (total tetra through octa-dibenzo-p-dioxins and dibenzofurans). Compliance shall be determined annually based on an arithmetic average determined using all data generated in three test runs, in accordance with RCSA §§22a-174-38(i)(3) and 22a-174-38(i)(4)(H).

10. Ammonia

The Permittee shall not emit Ammonia in excess of 18 ppmvd corrected to 7% O₂ (dry basis). Compliance shall be determined annually based on an arithmetic average determined using all data generated in three test runs, in accordance with RCSA §22a-174-38(i)(4)(L).

11. Hazardous Air Pollutants

In the event that any MASC exceedance occurs for any hazardous air pollutant emitted and listed in RCSA §22a-174-29, the Permittee shall take corrective action to achieve the regulatory limit. Additionally, the Permittee shall provide written notification to the Commissioner within three working days of the time at which the Permittee receives information regarding performance test results indicating an exceedance of any hazardous air pollutant listed in Part VII.A of this permit.

PART VII. STACK EMISSION TEST REQUIREMENTS

Stack emission testing shall be performed in accordance with the Emission Test Guidelines available on the DEEP website.

Annual stack testing shall be required for the following pollutant(s):

☑ PM ☐ PM₁₀ ☐ PM₂.₅ ☐ SO₂ ☐ NOₓ ☐ CO ☐ VOC ☐ Opacity ☐ Other: See A below

Annual Stack Testing Requirements

A. The Permittee shall conduct an annual performance test for dioxin/furan, particulate matter, hydrogen chloride, cadmium, lead and mercury in accordance with RCSA §22a-174-38(i). The Permittee shall also conduct an annual performance test for ammonia using Modified EPA Method 26A and in accordance with RCSA §22a-174-38(i).

B. The Permittee shall complete and submit to the Commissioner an Intent to Test (ITT) form and complete test package no less than 90 days before annual emission testing is scheduled. The Permittee shall submit written notice to the Commissioner three business days before conducting annual emission testing. The ITT shall address the compliance testing of all air pollutants listed in Part VII.A of this permit.

All methods and procedures listed in the ITT shall be consistent with the requirements of the DEEP (pursuant to RCSA §22a-174-38) or equivalent methods approved by DEEP. This ITT shall include provisions for measurement of any and all operational parameters necessary to verify compliance with the terms of this permit. In addition, additional non-criteria pollutant emission rates shall be confirmed during testing, if requested by DEEP.

C. During the test program the emissions and operating parameters of this equipment shall be measured, monitored and recorded. The operating parameters that shall be recorded during the test program shall include, at a minimum, unit load, furnace temperature as measured at the...
superheater outlet and pressure, feedwater temperature, furnace draft, total underfire and
overfire air, soot-blowing frequency, auxiliary fuel firing rate, reagent stoichiometry, lime slurry
flow rate and application pressure, dilution water flow rate, pressure drop across the baghouses,
baghouse inlet temperature, fabric filter cleaning cycle mode, and MSW charging rate, if
requested by DEEP.

D. The compliance tests shall be carried out with the furnace/boiler operating at approximately 100%
of the maximum unit load (i.e., maximum rated capacity).

E. The Permittee shall comply with all applicable notification, testing, and record keeping provisions of
RCSA §22a-174-38.

F. The Commissioner may require the Permittee to conduct additional performance tests if any
pollutant emission rate or operational parameter is identified as not being in compliance with any
permit condition.

PART VIII. CONTROL EQUIPMENT MALFUNCTION

In addition to complying with the requirements of RCSA §22a-174-7, the Permittee shall also comply with
the following conditions:

A. Except as otherwise provided in this part, the Permittee shall only be allowed to operate this
furnace/boiler during shutdown of air pollution control equipment when there is a malfunction of
such air pollution control equipment and as allowed under RCSA §22a-174-7(b). In the event of the
malfunction of air pollution control equipment that cannot be corrected within three hours, the
Permittee shall immediately institute a furnace shutdown procedure in accordance with the O&M
Plan. The period for which the facility will be allowed to operate during shutdown of the air
pollution control equipment shall not exceed the burnout of the unit’s charge at the time of the
shutdown of the air pollution control equipment. No MSW may be charged into the hopper
following a shutdown of the air pollution control equipment until after the air pollution control
equipment has been put back on-line.

B. The Commissioner retains authority to take enforcement actions including, but not limited to,
requiring shutdown of the facility if the source consistently (as determined by the Commissioner)
violates any pollutant emission limit or permit condition.

C. None of the conditions in this part shall exempt the Permittee from compliance with any other
condition of this permit, with any emission limit established in this permit, or with any applicable
state or federal regulation.

PART IX. PREMISES REQUIREMENTS

A. (State Enforceable Only) The Permittee shall comply with the state odor regulations, as set forth in
RCSA §22a-174-23.

B. (State Enforceable Only) The Permittee shall comply with the state noise control regulations, as set
forth in RCSA §§22a-69-1 through 22a-69-7.4.

C. The Permittee shall institute and comply with the following conditions at all times:

1. Sufficient wind-sheltered storage capacity for refuse, residual particulates and bottom ash on
site and provision for landfill disposal of same must be provided for, in the event of strike,
malfunction of air pollution control equipment, or other interruption.

2. Vehicular traffic areas shall be paved and adequately swept at the plant site.

3. Ensure that all trucks when loaded with municipal solid waste or any material likely to become airborne are covered at all times while outside the tipping building.

4. Transfer, storage and transportation at and from the plant site, of materials collected from the furnace grates and air pollution control equipment shall be transferred in a covered container or other method equally effective in preventing the material from becoming airborne during storage and transfer.

5. The Permittee shall implement a cleanup program on the plant site whereby any refuse, MSW or other materials will be collected.

6. The Permittee shall be subject at all times to the requirements of RCSA §22a-174-18(c), requirements which pertain to the control of fugitive dust emissions.

7. The public shall not have uncontrolled access to any portion of this premises.

PART X. ENFORCEMENT CONSIDERATIONS

A. CEM data, stack testing data and the results of any monitoring and testing of source parameters and emission rates shall, unless otherwise specified in this permit, be used to determine compliance with this permit.

B. The Permittee shall comply with any and all applicable requirements of the Clean Air Act as amended in 1990 as such requirements become applicable to this facility.

C. Pursuant to RCSA §22a-6b-602, the Permittee is hereby advised of its liability for assessment of civil penalties for any violation of this permit.

D. Notwithstanding any other provision of this permit, for the purpose of determining compliance or establishing whether a permittee has violated or is in violation of any permit condition, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information.

PART XI. ADDITIONAL TERMS AND CONDITIONS

A. This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

B. Any representative of the DEEP may enter the Permittee’s site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.

C. This permit may be revoked, suspended, modified or transferred in accordance with applicable law.

D. This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights
and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons or municipalities who are not parties to this permit.

E. Any document, including any notice, which is required to be submitted to the Commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."

F. Nothing in this permit shall affect the Commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the Commissioner.

G. Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the Commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the Commissioner.

H. The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.

I. Any document required to be submitted to the Commissioner under this permit shall, unless otherwise specified in writing by the Commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.
Appendix C
Air Pollution Control Operating Permit
Minor Modification and Preconstruction Approval

Permit Activity Number: BOP090001
Program Interest Number: 55793

<table>
<thead>
<tr>
<th>Mailing Address</th>
<th>Plant Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Kissel, Plant Mgr</td>
<td>WHEELABRATOR GLOUCESTER COMPANY L P</td>
</tr>
<tr>
<td>WHEELABRATOR GLOUCESTER CO LP</td>
<td>600 Us Rt 130</td>
</tr>
<tr>
<td>600 RT 130</td>
<td>Westville Boro</td>
</tr>
<tr>
<td>West Deptford Twp, NJ 08093</td>
<td>Gloucester County</td>
</tr>
</tbody>
</table>

Initial Operating Permit Approval Date: December 13, 2003
Minor Modification Approval Date: October 16, 2009
Operating Permit Renewal Expiration Date: December 11, 2013

This minor modification is approved and issued under the authority of Chapter 106, P.L. 1967 (N.J.S.A. 26:2C-9.2). The equipment at the facility must be operated in accordance with the requirements of this permit.

This approval, in response to your application, merges the provisions of the previously approved operating permit and the changes from this minor modification into a single comprehensive permit that replaces the one previously issued. This modification is for the proposed enhancement of the existing SNCR system through the installation of a minimum of four additional SNCR injector ports in the furnace membrane walls and additional SNCR system control through system optimization and temperature profiling to comply with the new NOx limitations for municipal solid waste incinerators.

Equipment at the facility referenced by this minor modification is not covered by the permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. Pursuant to N.J.A.C. 7:27-22.33(e), this minor modification consists of both a preconstruction approval and operating permit approval. This operating permit does not include compliance schedules as part of the approved compliance plan.

The permittee shall submit to the Department and to the EPA on forms provided by the Department, at the addresses given below, a periodic compliance certification, in accordance with N.J.A.C. 7:27-22.19 and the schedule for compliance certifications set forth in the compliance plan in this operating permit. The annual compliance certification reporting period will cover the calendar year ending December 31. The annual compliance certification is due to the Department and the EPA within 60 days after the end of each calendar year during which this permit was in effect. Forms provided by the Department can be found on the Department's website at: http://www.nj.gov/dep/enforcement/compliancecertsair.htm.

The annual compliance certification report may also be considered as your six month deviation report for the period from July 1 through December 31 which is due by January 30 of each year, as required by paragraph 13 in Section F, General Provisions and Authorities, of this permit, if the annual compliance certification is submitted by January 30.
We are including two electronic files, PDF and RADIUS. The PDF file contains the complete operating permit for your facility. The RADIUS file contains the Facility Name, Location, and Contact Information; the Facility Specific Requirements (Compliance Plan) and Inventories; and any Compliance Schedules (if needed). Upon importing this information into your personal computer with RADIUS software, you will have up-to-date information in RADIUS format. RADIUS software, instructions, and help are available at the Department's website at www.state.nj.us/dep/aqpp. We also have an Operating Permit Help Line available from 9:00 AM to 4:00 PM daily, where you may speak to someone about any questions you may have. The Operating Permit Help Line number is 609-633-8248.

If, in your judgment, the Department is imposing any unreasonable condition of approval in this permit modification action, you may contest the Department’s decision on the modification and request an adjudicatory hearing pursuant to N.J.S.A. 52:14b-1 et seq. and N.J.A.C. 7:27-22.32(a). All requests for an adjudicatory hearing must be received in writing by the Department within 20 calendar days of the date you receive this letter. The request must contain the information requested in N.J.A.C. 7:27-1.32 and the information on the enclosed Administrative Hearing Request Checklist and Tracking Form.

The permittee is responsible for submitting a timely and administratively complete operating permit renewal application. The application is considered timely if it is received at least 12 months before the expiration date of the operating permit. To be deemed administratively complete, an application for renewal of the operating permit shall include all of the information required by the application form for the renewal and the information required pursuant to N.J.A.C. 7:27-22.30(d). However, consistent with N.J.A.C. 7:27-22.30(c), the permittee is encouraged to submit the renewal application at least 15 months prior to expiration of the operating permit, so that the Department can notify the applicant of any deficiencies in the application. This will allow the permittee to correct any deficiencies, and to better ensure that the application is administratively complete by the renewal deadline. Only applications which are timely and administratively complete will be eligible for coverage by an application shield. The renewal application can be found at our website, http://www.state.nj.us/dep/aqpp/downloads/forms/OPRenewal.PDF.

Permittees that are subject to Compliance Assurance Monitoring (CAM), pursuant to 40 CFR 64, shall develop a CAM Plan for modified equipment as well as existing sources. Details of the rule and guidance on how to prepare a plan can be found at EPA’s website: www.epa.gov/ttn/emc/cam.html. In addition, CAM Plans must be included as part of the permit renewal application. Permittees that do not submit a CAM Plan may have their modification applications denied, pursuant to N.J.A.C. 7:27-22.3.

If you have any questions regarding this permit approval, please call your permit writer, Harry Baist, at (609) 633-8235.

Approved by:

Yaso Sivaganesh
Bureau of Air Permits

Enclosure
CC:  S. Riva, USEPA Region II (CD containing final permit)
      R. Wormley SRO (Signature Page Only)
Section A

Facility Name: WHEELABRATOR GLOUCESTER COMPANY L P
Program Interest Number: 55793
Permit Activity Number: BOP090001

REASON FOR PERMIT

The reason for issuance of this permit is to comply with the air pollution control permit provisions of Title V of the federal Clean Air Act, federal rules promulgated at 40 CFR 70, and state regulations promulgated at N.J.A.C. 7:27-22, which requires the state to issue operating permits to major facilities and minor facilities that are in certain designated source categories. This is the operating permit for the facility listed on the cover page, which includes a minor modification for the enhancement of the existing SNCR system through the installation of a minimum of four additional SNCR injector ports in the furnace membrane walls and additional SNCR system control through system optimization and temperature profiling to comply with the new NOx limitations for municipal solid waste incinerators.

New Jersey has elected to integrate its Title I New Source Review (NSR) preconstruction permits with the new Title V operating permits instead of issuing separate permits. Consequently, the existing preconstruction permit provisions that were previously approved for this facility have been consolidated into this permit. This permit may also include applicable requirements for grandfathered sources.

This permit action consolidates previously approved permit terms and conditions into one single permit for the facility. The New Jersey Department of Environmental Protection (Department) issues this operating permit authorizing the facility to operate equipment and air pollution control devices. In the operating permit application, the facility represented that it meets all applicable requirements of the federal Clean Air Act and the New Jersey Air Pollution Control Act codified at N.J.S.A. 26:2C. Based on an evaluation of the data contained in the facility’s application, the Department has approved this operating permit.

This permit allows this facility to operate the equipment and air pollution control devices specified in this permit and emit up to a level specified for each source operation. The signatories named in the application are responsible for ensuring that the facility is operated in a manner consistent with this permit, its conditions, and applicable rules.
<table>
<thead>
<tr>
<th>Component (TER COMPANY L P (55793))</th>
<th>Monitoring Requirement</th>
<th>Recordkeeping Requirement</th>
<th>Submittal/Action Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen oxides (NOx): Monitored by continuous emission monitoring system continuously, based on one calendar day [N.J.A.C. 7:27-19.12 &amp; [N.J.A.C. 7:27-19.15(a)]</td>
<td>Other: Refer to VOC stack testing requirement in U1 OS0 [N.J.A.C. 7:27-16.16(g)1ii].</td>
<td>Other: Refer to VOC stack testing requirement in U1 OS0 [N.J.A.C. 7:27-16.16(g)1ii].</td>
<td>None.</td>
</tr>
<tr>
<td>Nitrogen oxides: Recordkeeping by data acquisition system (DAS) / electronic data storage continuously. [N.J.A.C. 7:27-19.19(a)]</td>
<td></td>
<td></td>
<td>None.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>None.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>None.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>None.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>None.</td>
</tr>
</tbody>
</table>
New Jersey Department of Environmental Protection
Reason for Application

Permit Being Modified

Permit Class: BOP   Number: 70001

Description of Modifications: This modification is for the proposed enhancement of the existing SNCR system through the installation of a minimum of four additional SNCR injector ports in the furnace membrane walls and additional SNCR system control through system optimization and temperature profiling to comply with the new NOx limitations for municipal solid waste incinerators.
### New Jersey Department of Environmental Protection

#### Equipment Inventory

<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Equipment Type</th>
<th>Certificate Number</th>
<th>Install Date</th>
<th>Grand-Fathered</th>
<th>Last Mod. (Since 1968)</th>
<th>Equip. Set ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons Per Day Municipal Waste Combustor</td>
<td>Boiler</td>
<td>PCP000001</td>
<td>1/1/1990</td>
<td>No</td>
<td>1/1/1996</td>
<td></td>
</tr>
<tr>
<td>Tons Per Day Municipal Waste Combustor</td>
<td>Boiler</td>
<td>PCP000001</td>
<td>1/1/1990</td>
<td>No</td>
<td>1/1/1996</td>
<td></td>
</tr>
<tr>
<td>Silo for Pebble Lime</td>
<td>Manufacturing and Materials Handling Equipment</td>
<td>091943</td>
<td>1/1/1990</td>
<td>No</td>
<td>1/1/1990</td>
<td></td>
</tr>
<tr>
<td>MBTU/hr fire pump</td>
<td>Fuel Combustion Equipment (Other)</td>
<td>093884</td>
<td>1/10/1990</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
New Jersey Department of Environmental Protection
Control Device Inventory

<table>
<thead>
<tr>
<th>Description</th>
<th>CD Type</th>
<th>Install Date</th>
<th>Grand-Fathered</th>
<th>Last Mod. (Since 1968)</th>
<th>CD Set ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1 Spray Dryerer</td>
<td>Scrubber (Other)</td>
<td>1/1/1990</td>
<td>No</td>
<td>1/1/1990</td>
<td></td>
</tr>
<tr>
<td>No. 1 Fabric Filterer</td>
<td>Particulate Filter (Baghouse)</td>
<td>1/1/1990</td>
<td>No</td>
<td>1/1/1990</td>
<td></td>
</tr>
<tr>
<td>No. 1 Carbon Injection</td>
<td>Other</td>
<td>1/1/1996</td>
<td>No</td>
<td>1/1/1996</td>
<td></td>
</tr>
<tr>
<td>No. 2 Spray Dryerer</td>
<td>Scrubber (Other)</td>
<td>1/1/1990</td>
<td>No</td>
<td>1/1/1990</td>
<td></td>
</tr>
<tr>
<td>No. 2 Fabric Filterer</td>
<td>Particulate Filter (Baghouse)</td>
<td>1/1/1990</td>
<td>No</td>
<td>1/1/1990</td>
<td></td>
</tr>
<tr>
<td>No. 2 Carbon Injection</td>
<td>Other</td>
<td>1/1/1996</td>
<td>No</td>
<td>1/1/1996</td>
<td></td>
</tr>
<tr>
<td>ilo Baghouse</td>
<td>Particulate Filter (Baghouse)</td>
<td>1/1/1990</td>
<td>No</td>
<td>1/1/1990</td>
<td></td>
</tr>
<tr>
<td>No. 1 SNCR</td>
<td>Selective Non-Catalytic Reduction</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. 2 SNCR</td>
<td>Selective Non-Catalytic Reduction</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nditioning Area Wet</td>
<td>Scrubber (Other)</td>
<td>2/5/2007</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Wet Scrubber</td>
<td>Scrubber (Other)</td>
<td>2/5/2007</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
New Jersey Department of Environmental Protection  
Emission Unit/Batch Process Inventory  

Per Day, 108 MMBTU/hr Municipal Solid Waste (MSW) Fired Combustors (E1 and E2)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Burning Solid Waste</td>
<td>Normal - Steady State</td>
<td>E1</td>
<td>CD1 (P)</td>
<td>PT1</td>
<td>1-01-012-01</td>
<td>0.0</td>
<td>8,760.0</td>
<td></td>
<td>18,000.0</td>
<td></td>
<td>80,000.0</td>
<td></td>
<td>200.0</td>
</tr>
<tr>
<td>- Burning Solid Waste</td>
<td>Normal - Steady State</td>
<td>E2</td>
<td>CD4 (P)</td>
<td>PT1</td>
<td>1-01-006-01</td>
<td>0.0</td>
<td>8,760.0</td>
<td></td>
<td>18,000.0</td>
<td></td>
<td>80,000.0</td>
<td></td>
<td>200.0</td>
</tr>
<tr>
<td>- Emergency Malfunction</td>
<td>Malfunction</td>
<td>E1</td>
<td>CD1 (P)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Emergency Malfunction</td>
<td>Malfunction</td>
<td>E2</td>
<td>CD4 (P)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix D
GENERAL CONDITIONS

G-1. Except as otherwise provided for in the following provisions, the application for the Certificate of Public Convenience and Necessity (CPCN) is considered to be part of this CPCN for the Energy Answers Baltimore, LLC (EA) Fairfield Renewable Energy Project (the “Fairfield Project” or “Project”). The application consists of the original application received by the Maryland Public Service Commission (PSC) in May 2009, the revised application received by the PSC in October 2009, and the Motion to Amend and technical amendment received by the PSC in January 2012. In the application, estimates of dimensions, volumes, emission rates, operating rates, feed rates and hours of operation are not deemed to constitute enforceable numeric limits except to the extent that they are necessary to make a determination of applicable regulations. Construction of the facility shall be undertaken in accordance with the CPCN application and subsequent amendments approved by the Commission. If there are any inconsistencies between the conditions specified below and the application, the conditions in this CPCN shall take precedence. If CPCN conditions incorporate federal or state laws through paraphrased language, where there is any inconsistency between the paraphrased language and the actual state or federal laws being paraphrased, the applicable federal or state laws shall take precedence.

G-2. If any provision of this CPCN shall be held invalid for any reason, the remaining provisions shall remain in full force and effect and such invalid provision shall be considered severed and deleted from this CPCN.

G-3. Representatives of the Maryland PSC shall be afforded access to the Fairfield Renewable Energy Project facility at any reasonable time to conduct inspections and evaluations necessary to assure compliance with the CPCN. EA shall provide such assistance as may be necessary to conduct such inspections and evaluations by representatives of the PSC effectively and safely.

G-4. Representatives of the Maryland Department of the Environment (MDE) and the Baltimore City Health Department shall be afforded access to the Fairfield Renewable Energy Project facility at any reasonable time to conduct inspections and evaluations necessary to assure compliance with the CPCN requirements. EA shall provide such assistance as reasonably may be necessary to conduct such inspections and evaluations effectively and safely, which may include but need not be limited to the following:

a) Inspecting construction authorized under this CPCN;

b) Sampling any materials stored or processed on site, or any waste or discharge into the environment;

c) Inspecting any monitoring or recording equipment required by this CPCN or applicable regulations;
d) Having access to or copying any records required to be kept by EA pursuant to this CPCN or applicable regulations;

e) Obtaining any photographic documentation and evidence; and

f) Determining compliance with the conditions and regulations specified in the CPCN.


Power Plant Assessment Division
Department of Natural Resources
Tawes State Office Building, B-3
580 Taylor Avenue
Annapolis, Maryland 21401

AIR QUALITY REQUIREMENTS

General Air Quality Requirements

A-1. MDE Air and Radiation Management Administration (MDE-ARMA) shall have concurrent jurisdiction with the PSC to enforce the air quality conditions of this CPCN.

A-2. The CPCN serves as the Prevention of Significant Deterioration (PSD) approval, Nonattainment New Source Review (NA-NSR) approval, and air quality construction permit for the Fairfield Renewable Energy Project and does not constitute the permit to construct or approvals until such time as EA has provided documentation demonstrating that nitrogen oxides (NOx) emission offsets totaling at least 781 tons, volatile organic compound (VOC) emission offsets totaling at least 125 tons, particulate matter less than 2.5 micrograms (PM2.5) emission offsets totaling at least 156 tons, and SO2 (as a PM2.5 precursor) emission offsets totaling at least 446 tons have been obtained and approved by the MDE-ARMA and are federally enforceable. Should the PM2.5 Lowest Achievable Emissions Rate (LAER) limit be determined to be greater than the provisional LAER limit for PM2.5 in Condition 21(b) of 22 milligrams per dry standard cubic meter (mg/ dscm) @ 7% O2, EA shall be required to obtain additional PM2.5 offsets for the difference between the provisional and final LAER limit at a ratio of 1:1 within 180 days of the final PM2.5 limit having been imposed by MDE-ARMA.

A-3. For air permitting purposes, the facility shall be comprised of the following equipment:

a) Four spreader-stoker boilers ("combustors") each designed to operate at 450 million British thermal units per hour (MMBtu/hr), and each designed to combust an average of 1,000 tons per day (tpd) of Waste-derived Fuel to generate electricity and steam. High pressure steam from the boilers will drive one, nominal, 157-megawatt (MW) turbine generator. Each boiler shall be equipped with three, 150-million Btu per hour (MMBtu/hr) natural burners. Each boiler
shall be equipped with the following air pollution control systems: regenerative selective catalytic reduction (RSCR) to control NO\textsubscript{x} emissions; an activated carbon injection system to control mercury and dioxin/furan emissions; a TurboSorp® (or equivalent) humidifying circulating bed scrubber with dry lime injection to neutralize acid gases; fabric filters (baghouses) to capture particulate matter; and an oxidation catalyst to control CO emissions;

b) Two four-celled water-cooled condenser cooling towers;

c) One diesel fuel-fired emergency generator, model year 2010 or later, with a power output of up to 500 kilowatts (kW);

d) Two diesel fuel-fired emergency fire water pumps, model year 2010 or later, with a power output of up to 100 kW;

e) Bottom ash handling system; and

f) Fly ash handling system.

A-4. Definitions:

a) “Automotive Shredder Residue” (“ASR”) is defined as shredded interior plastic trim, upholstery fabric and filler, insulation and padding of end-of-life vehicles (ELV). ASR may consist of rubber, paper, hard plastic, vinyl, glass, and some aluminum and plated metals from the scrap, as well as rocks and dirt, the amount of which depends on scrap handling procedures.

b) “Malfunction” is defined as any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process that operates in an abnormal or unusual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. Periods of malfunction shall not exceed 3 hours per occurrence, except if a loss of boiler water level control or combustion air control is determined to be a malfunction, the duration of the malfunction period is limited to 15 hours per occurrence [40 CFR 60.58b(a)(1) and 40 CFR 60.58b(a)(1)(iii)].

c) “Processed Refuse Fuel” (“PRF”) is shredded municipal solid waste, commercial waste, and non-hazardous industrial wastes, after a portion of the ferrous metals is removed.

d) “Processed Urban Wood Waste” is wood fuel derived from both green and dried wood waste materials, and may include sawn lumber, pruned branches, stumps, and whole trees from street and park maintenance, shipping pallets, wood debris segregated from construction and demolition and land clearing and grubbing activities;

e) "Shutdown" is defined as that period of time that the combustor temperature is lowered, following cessation of the charging of Waste-derived Fuel to the combustor, and beginning at the point at which the temperature drops below 1,500°F and combustion firing with natural gas commences, and continuing until
natural gas stops flowing. Shutdown shall not exceed 3 hours per occurrence [40 CFR 60.58b(a)(1)];

f) "Startup" commences when a Fairfield combuster begins the continuous burning of Waste-derived Fuel and does not include any warmup period when that combuster is combusting fossil fuel, and no Waste-derived Fuel is being fed to the combuster [40 CFR 60.58b(a)(1)(i)]. Startup shall not exceed 3 hours per occurrence [40 CFR 60.58b(a)(1)] following which operation of the continuous burning of Waste-derived Fuel shall begin;

g) "Tire Derived Fuel" ("TDF") is a processed (ground) material made primarily from scrap tires that are no longer usable for their original intended purpose because of wear, damage, or defect;

h) "Warmup" is defined as the period of time from initiation of combustion firing with natural gas until the combuster’s temperature can be maintained at or above 1,500°F for a period of at least one second after secondary air injection, and before any Waste-derived Fuel is introduced into the combuster;

i) "Waste-derived Fuel" shall consist of PRF, ASR, TDF, and Processed Urban Wood Waste. Other non-hazardous Waste-derived Fuel may only be combusted upon written approval from MDE-ARMA.

A-5. EA shall construct exhaust stacks for the Fairfield combusters at a minimum height of 295 feet above ground level.

A-6. In accordance with COMAR 26.11.02.04B, the air quality provisions expire if, as determined by MDE-ARMA:

a) Construction is not commenced within 36 months after the August 6, 2010 effective date of the CPCN issued in Case 9199;

b) Construction is substantially discontinued for a period of 18 months or more after it has commenced; or

c) Construction is not completed within a reasonable period of time after the issuance of a final CPCN.

A-7. At least 60 days prior to the anticipated date of initial startup of the facility, EA shall submit to MDE-ARMA an application for a temporary permit to operate.

A-8. All requirements pertaining to air quality that apply to EA shall apply to all subsequent owners and/or operators of the facility. In the event of any change in control or ownership, EA shall notify the succeeding owner/operator of the existence of the requirements of this CPCN pertaining to air quality by letter and shall send a copy of that letter to the PSC and MDE-ARMA.

Plant-wide Air Requirements

A-9. The Fairfield Project is subject to all applicable federally enforceable air quality requirements including, but not limited to, the following regulations:
A-25. EA shall develop and update, at least each calendar year, a site-specific operating manual that shall, at a minimum, address the elements of municipal waste combustor unit operations specified in 40 CFR 60.53b(e). EA shall maintain the manual on site and make it available to MDE-ARMA upon request.

A-26. EA shall not cause the combustors to operate at a temperature, measured at the particulate matter control device inlet, exceeding 17°C above the maximum demonstrated particulate matter control device temperature defined in 40 CFR 60.51b, except during certain specified types of testing [40 CFR 60.53b(c)].

A-27. EA shall comply with the operator training and certification requirements outlined in 40 CFR 60.54b.

A-28. EA shall use the procedures in 40 CFR 60.58b(i) to determine compliance with applicable operating requirements.

A-29. Warmup on Waste-derived Fuel is prohibited. During warmup, auxiliary fuel (natural gas) shall be used to achieve combustion chamber operating temperature.

Emissions and Operational Requirements for Emergency Diesel Generator and Firewater Pump Engines

A-30. The emergency diesel generator and the two firewater pump engines are each subject to all applicable federally enforceable air quality requirements including, but not limited to, the following regulations:

a) Visible Emissions—Prohibits EA from causing or permitting the discharge of emissions from any fuel burning equipment, other than water in an uncombined form, which is visible to human observers. [COMAR 26.11.09.05A(2)]. This limitation does not apply to emissions during load changing, soot blowing, startup, or adjustments or occasional cleaning of control equipment if [COMAR 26.11.09.05A(3)]:

i) The visible emissions are not greater than 40 percent opacity; and

ii) The visible emissions do not occur for more than 6 consecutive minutes in any 60-minute period.

b) Visible Emissions Stationary Internal Combustion Engine Powered Equipment—Prohibits EA from causing or permitting the discharge of emissions from any engine [COMAR 26.11.09.05B(2)-(4)]:

i) Operating at idle at an opacity greater than 10 percent; or

ii) At conditions other than idle at an opacity greater than 40 percent.

c) Control of Sulfur Oxides from Fuel Burning Equipment—Prohibits EA from burning, selling or making available for sale any fuel with a sulfur content by weight in excess of or which otherwise exceeds 0.3 percent for distillate fuel oils [COMAR 26.11.09.07A(2)(c)]; and
operational experience. Within 90 days following the completion of two full years of commercial operation, EA shall submit to MDE-ARMA a technical analysis, based on emissions and operating data compiled during the first two years of operation, demonstrating whether or not new, more stringent LAER emission limits for SO₂ and NOₓ are technically appropriate without modification of design or operation, and in any case, the appropriate numerical values for the limits that would preserve an adequate margin of safety between actual performance and any revised LAER limit.

d) At least 120 days prior to initial startup of any combustor unit, EA shall submit to MDE-ARMA for review and approval, an Emission Limit Optimization Plan that describes the specific emissions and operating data that will be collected and recorded over the course of the initial two years of operation, to serve as the technical basis for developing potentially more stringent emission limits for NOₓ, SO₂ and PM2.5. EA shall also propose in the Emission Limit Optimization Plan the statistical and other analyses to be undertaken for developing the potentially more stringent emission limits.

A-22. EA shall limit emissions of ammonia resulting from unreacted ammonia ("ammonia slip") emitted from the RSCR to 20 parts per million by volume, dry basis, corrected to 7 percent oxygen. Compliance with the ammonia slip limit shall be determined based on a 24-hour block average basis.

a) Compliance with the ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmvd@7% oxygen = \((a-bc/1,000,000) \times 1,000,000/b) \times d\)

where:
- \(a\) = aqueous ammonia injection rate (lb/hr)/17 (lb/lb-mole),
- \(b\) = dry exhaust gas flow rate (lb/hr)/29 (lb/lb-mole),
- \(c\) = change in measured NOₓ concentration ppmv, dry at 7% oxygen across catalyst, and
- \(d\) = correction factor.

The correction factor shall be derived during compliance testing by comparing the measured and calculated ammonia slip.

b) Alternatively, EA may request permission from MDE-ARMA to utilize a continuous in-stack ammonia monitor acceptable to MDE-ARMA to monitor ammonia emissions.

A-23. EA shall not operate the combustors at a unit load level greater than 110% of the maximum demonstrated municipal waste combustor unit load [40 CFR 60.53b(a)], except for testing purposes, as specified in 40 CFR 60.53b(b). Unit load means the steam load of the municipal waste combustor as specified in 40 CFR 60.58b(i)(6). Maximum demonstrated municipal combustor load means the load as defined in 40 CFR 60.51b.

A-24. Municipal waste combustor unit capacity shall be calculated using the procedures in 40 CFR 60.58b(j).
In response to Public Information Act (“PIA”) request #2017-00093 relating to the Wheelabrator BRESCO incinerator in Baltimore, we received a NOx Control System Optimization Final Report compiled by Quinapoxet Solutions for tests run in February and March of 2016 at Wheelabrator Baltimore (hereinafter “Final Report”). We have a few questions relating to this report and hope that MDE is willing to consider these.

1. **What analyses did Wheelabrator conduct to measure or model the furnace gas flows?**

In the Final Report, Quinapoxet Solutions states that “it was confirmed that furnace gas flows favored the rear wall at the urea injection level.” However, it was unclear within the report what tests were conducted to confirm this assertion, as the report refers to “Typical Boiler Furnace Flow” in Figure 6 to support its assertions. Is MDE aware of whether a computational fluid dynamics model or similar flow testing has been done on the Wheelabrator Boiler Furnaces?

2. **Has Wheelabrator conducted temperature measurements at varying heights within the furnaces to verify that the 4th floor is the optimal location for the SNCR Injector?**

Wheelabrator’s presentation at the 1/17/17 NOx stakeholder meeting indicated that adequate residence time may be a concern for the single-pass boiler, and additional vertical testing could inform additional or modified urea injection at varying heights or angles within the furnace.

3. **Is the GasTemp pyrometer (line of sight average) appropriate for temperature profiling?**

When determining placement of injection locations, more detailed spatial data may be required. Using an instrument that gives you the average along a line is valuable in some contexts, much more granular data should be obtained to identify exact placement of urea injection.

4. **Could there be the opportunity to further optimize baseline combustion controls?**

The Final Report attributes the higher baseline concentration within Boiler 2 to be due to the higher operating temperature required in a “fouled” boiler. However, due to the relatively low operating temperatures of the boilers, it is unlikely that thermal NOx would cause the 20 ppm difference between the two baselines. We are curious whether additional factors, such as fuel composition or boiler operation, are contributing to these observed differences, and whether better standardization or optimization could reduce baseline emissions before SNCR treatment.

5. **If possible, can MDE provide the urea flow for each injector during testing in addition to total flow?**

6. **Have the injection locations identified within the optimization study or the urea injection rates been implemented, and do they continue to be utilized currently?**

7. **Was the optimization study protocol approved by MDE?**