



Connecticut Department of

**ENERGY &
ENVIRONMENTAL
PROTECTION**

**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).

Owner/Operator	Wheelabrator Bridgeport, L.P.
Address	6 Howard Avenue, Bridgeport, CT 06605
Equipment Location	6 Howard Avenue, Bridgeport, CT 06605
Equipment Description	Portable Industrial Vacuum System powered by a Diesel Engine
Town-Permit Numbers	015-0296
Premises Number	0765
Stack Number	20 (Industrial Vacuum System) and 21 (Diesel Engine)
Permit Issue Date	September 3, 2015
Expiration Date	None

/s/ Michael Sullivan
Michael Sullivan
Deputy Commissioner

September 3, 2015
Date

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 houses three Municipal Solid Waste Combustors, an ash conditioner/handling system and carbon and lime silos, among others.

A Portable Industrial Vacuum System powered by a Diesel Engine (“Industrial Vacuum Cleaner”) is used for enhanced cleaning of the facility, specifically, the vacuuming of Municipal Solid Waste Residue, Ash Residue, Stormwater Basins, and Housekeeping Debris. The unit has three stages of filtration consisting of an initial centrifugal separator with a 90% collection efficiency, followed by a cartridge dust collector with a 99.5% control efficiency, and a HEPA filter with a 99.97% control efficiency, which is installed on the discharge side of the vacuum pump. This HEPA filter moves with the unit. The Industrial Vacuum Cleaner has two operating scenarios.

In the “Fixed Ash Conveying” scenario, a vacuum filter receiver is attached in front of the portable vacuum unit and is used as an intercept collection hopper. The collected material is then discharged onto one of two conveyor belts. The filter receiver has a centrifugal separator with a 90% collection efficiency and is equipped with a baghouse with a 99.97% control efficiency. The filter receiver discharges to the portable vacuum system with its three stages of filtration, as described above. The filter receiver and Industrial Vacuum Cleaner combination is used in a dedicated ash area, which allows the company to vacuum and convey ash for later reuse.

In the “Mobile Vacuum” scenario, the unit is moved throughout different locations within the premises. The amount of material that is vacuumed at any one time (in this operating scenario) is limited by the Industrial Vacuum Cleaner’s integrated one ton collection hopper and the amount of time it takes to empty it. The unit is operated in this scenario when performing various housekeeping cleaning activities, including storm drain cleaning.

B. Equipment Design Specifications

1. Industrial Vacuum Cleaner
 - a. Make and Model: Hi-Vac 875D
 - b. Maximum Conveying Rate: 750 lb/min at 75 HP
 - c. Conveying Distance: 400 ft
 - d. Centrifugal Separator Collection Efficiency: 90%

2. Diesel Engine
 - a. Make and Model: John Deere Model JD4045TF280
 - b. Maximum Gross Heat Input (MMBtu/hr): 0.6
 - c. Maximum Fuel Firing Rate (gal/hr): 4.2

C. Control Equipment Design Specifications

1. Cartridge Dust Collector
 - a. Make and Model: Hi-Vac 875D Gortex Cartridges
 - b. Filtering Material: Fully synthetic composite with ePTFE membrane
 - c. Number of Cartridges: Four
 - d. Air to Cloth Ratio (acfm/ft²): 13.6
 - e. Net Cloth Area (ft²): 132
 - f. Cleaning Method: Reverse Pulse Air
 - g. Design Pressure Drop Across Unit (inches H₂O): 20
 - h. PM Design Control Efficiency (%): 99.5

2. Vacuum Filter Receiver (Intercept Collection Hopper)
 - a. Make and Model: Hi-Vac 875
 - b. Filtering Material: Micro Fiberglass
 - c. Number of Bags: Forty-eight
 - d. Air to Cloth Ratio (acfm/ft²): 6.5
 - e. Net Cloth Area (ft²): 277
 - f. Cleaning Method: Reverse Pulse Air
 - g. Design Pressure Drop Across Unit (inches H₂O): 20
 - h. Centrifugal Separator Collection Efficiency (%): 90
 - i. PM Design Control Efficiency (%): 99.97

3. HEPA Filter (At discharge of the portable vacuum cleaner)
 - a. Make and Model: Flanders High Capacity HEPA Filter
 - b. Filtering Material: Boron silicate microfiber
 - c. Air to Cloth Ratio (acfm/ft²): 6.8
 - d. Net Cloth Area (ft²): 265
 - e. Design Pressure Drop Range Across Unit (inches H₂O): 1-5
 - f. PM Design Control Efficiency (%): 99.97

D. Stack Parameters

1. Stack No. 20 (Industrial Vacuum System)
 - a. Minimum Stack Height (ft): 7.75
 - b. Minimum Exhaust Gas Flow Rate (acfm): 1539
 - c. Minimum Stack Exit Temperature (°F): 30
 - d. Distance from Stack to Property Line (ft): 5-270

PART II. OPERATIONAL CONDITIONS

A. Industrial Vacuum Cleaner

1. Material Vacuumed: Municipal Solid Waste Residue, Ash Residue, Stormwater Basins, and Housekeeping Debris

2. The Industrial Vacuum Cleaner shall not stay in one location for more than 12 consecutive months, where a location is any single site at a building, structure, facility or installation.

PART III. ALLOWABLE EMISSION LIMITS

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

A. Criteria Pollutants

1. Industrial Vacuum Cleaner

Pollutant	lb/hr	tpy
PM/ PM ₁₀ / PM _{2.5}	0.007 (Mobile Vacuum Scenario) 2.02E-07 (Fixed Ash Conveying Scenario)	0.03

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 Section 22a-174-29. [STATE ONLY REQUIREMENT]

- #### **C. Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using emission factors from the following sources:**

1. Industrial Vacuum Cleaner
 - a. All Pollutants: Manufacturer's Data and Material Balance calculations which shall assume a conveying rate of 750 lb/min at 75 HP, the design maximum.

The commissioner may require other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Monitoring

1. The Permittee shall continuously monitor and record at least once per day and per operating scenario (if the Industrial Vacuum System has been operated in different modes within the same day) the pressure drop across each air pollution control device. The Permittee shall maintain this parameter within the ranges recommended by the manufacturer to achieve compliance with the emission limits listed in this permit.
2. The Permittee shall perform inspections of the control devices once per year, at a minimum, or more frequently if recommended by the manufacturer.
3. The Permittee shall install non-resettable hour meter(s) to monitor the hours of operation for the Industrial Vacuum System and associated Diesel Engine.

4. The Permittee shall calculate the worst-case Maximum Allowable Stack Concentration and projected Actual Stack Concentration for any hazardous air pollutant that may be emitted. When the permitted unit is used to vacuum ash residue, the projected Actual Stack Concentration shall be determined based on the maximum allowable particulate emissions rate of 0.007 lb/hr, adjusted for total actual concentration of HAP metals in the ash residue. These HAP concentrations shall be calculated using ash residue sampling results periodically submitted to the commissioner.

B. Record Keeping

1. The Permittee shall maintain a log of the Industrial Vacuum Cleaner's operations. This log shall include but not be limited to:
 - a. Date and location within the premises (e.g. Building) of operation;
 - b. Type of Material Vacuumed (e.g. Ash Residue);
 - c. Operating Scenario (e.g. Fixed Ash Conveying);
 - d. Daily total hours of operation for each operating scenario
 - e. MASC Compliance Determinations as specified in Part IV.A.4 of this permit, including ash residue sampling results submitted to the commissioner.
2. The Permittee shall make and keep records of monthly and annual total hours of operation for the Industrial Vacuum System and associated Diesel Engine.
3. The Permittee shall calculate and record monthly and annual PM₁₀, PM_{2.5}, SO₂, NO_x, VOC, and CO emissions in units of tons for the Industrial Vacuum System and associated Diesel Engine.
4. The Permittee shall keep records of manufacturer's specifications and written recommendations for the operation, inspection, and maintenance of the permitted equipment.
5. The Permittee shall make and keep records of the inspection and maintenance of the vacuum system and control devices. The records shall include the name of the inspector, the inspection date, the resulting actions and findings of the inspection, and the date that the particulate filter is replaced.
6. The Permittee shall keep all records required by this permit for a period of no less than five years and shall submit such records to the commissioner upon request.

C. Reporting

1. The Permittee shall notify the commissioner in writing of any malfunction of this equipment and/or associated air pollution control equipment. The Permittee shall submit such notification within ten days of the malfunction. The notification shall include the following:
 - a. a description of the malfunction and a description of the circumstances surrounding the cause or likely cause of such malfunction; and

- b. a description of all corrective actions and preventive measures taken and/or planned with respect to such malfunction and the dates of such actions and measures.

PART V. OPERATION AND MAINTENANCE REQUIREMENTS

- A. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.
- B. The Permittee shall properly operate the control equipment at all times that this equipment is in operation and emitting air pollutants.
- C. The Permittee shall change the filters for the control devices on an as needed basis, but not less frequently than manufacturer's recommendations.

PART VI. SPECIAL REQUIREMENTS

- A. The Permittee shall not cause or permit the emission of any substance or combination of substances which creates or contributes to an odor beyond the property boundary of the premises that constitutes a nuisance as set forth in RCSA Section 22a-174-23. [STATE ONLY REQUIREMENT]
- B. The Permittee shall operate this facility at all times in a manner so as not to violate or contribute significantly to the violation of any applicable state noise control regulations, as set forth in RCSA Sections 22a-69-1 through 22a-69-7.4. [STATE ONLY REQUIREMENT]

PART VII. 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 of 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.