

**Additional Special Terms and Conditions**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The permittee shall maintain and operate an enclosure and ventilation system sufficient to minimize or eliminate visible emissions of fugitive dust at the point of capture.
2. Visible emissions of fugitive particulate matter from this emissions unit shall not exceed 5 percent opacity as a 3-minute average.
3. There shall be no visible emissions from the fabric/carbon filter exhaust.
4. The permittee shall employ good housekeeping practices that can include, but is not limited to, sweeping and/or water washing the concrete floor in all areas where the fluorescent lamps are unloaded, stored and/or processed to prevent the suspension of dust into the air.
5. The diesel engine shall be equipped with a turbocharger and aftercooler, and utilize positive crankcase ventilation (PCV).

**B. Operational Restrictions**

1. The maximum processing rate for this emissions unit shall not exceed 8000 pounds per hour.
2. The permittee shall not operate the crusher for more than 4,000 hours per rolling 12-month period.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall comply with the following monthly cumulative hourly restrictions:

<u>Month</u>	<u>Maximum Cumulative Monthly Operating Hours</u>
1	450
1-2	900
1-3	1,300
1-4	1,700
1-5	2,100
1-6	2,500
1-7	2,900
1-8	3,300
1-9	3,700
1-10	4,000
1-11	4,000
1-12	4,000

After the first 12 calendar months of operation, compliance with the annual operating hours shall be based upon a rolling, 12-month summation of the monthly operating hours.

3. The permittee shall maintain and operate an enclosure and ventilation system sufficient to minimize or eliminate visible emissions of fugitive dust at the point of capture.
4. The permittee shall apply sufficient water spray to the crusher to eliminate visible emissions of fugitive dust from the shaker.
5. The pressure drop across the fabric filter shall be maintained within the range recommended by the manufacturer while the emissions unit is in operation.
6. The injection timing shall be retarded 4 degrees from peak power settings. This injection timing reduction is required to reduce emissions of oxides of nitrogen (NO<sub>x</sub>)

#### **C. Monitoring and Record Keeping Requirements**

1. The permittee shall maintain the following information pertaining to the operation and maintenance of the carbon adsorption system in a readily accessible location:
  - a. documentation demonstrating that the control device will achieve the required control efficiency during the maximum loading conditions, including the manufacturer's design specifications and a general description of the air stream entering the control device, and
  - b. a design analysis establishing the design exhaust stream mercury concentration level, the capacity of the activated carbon used for the carbon bed and design carbon replacement interval.
2. The permittee shall replace the carbon at a predetermined interval that is less than the carbon replacement interval that is determined by the maximum design loading rate for mercury.
3. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the fabric filter/carbon filter while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations,

instructions, and operating manual(s).

4. The permittee shall monitor daily for the presence of visible emissions from loading the crusher, crushing, screener and the fabric/carbon filter exhaust during normal operation.
5. The permittee shall collect and record the following information each day:
  - a. the number of loads of fluorescent bulbs and cardboard processed;
  - b. the hours of operation,;
  - c. the average hourly rate of processing (loads per hour);
  - d. a log or record of operating time for the capture (collection) system, control device, and the associated emissions unit;
  - e. the time that the carbon in the control device is replaced;
  - f. visually check for operation of the water spray system; and
  - g. record the pressure drop across the fabric/carbon filter;
  - h. record the presence or absence of visible emissions; If visible emissions are noted, then the location of these emissions shall be recorded.
6. Once each year, the permittee shall check to ensure that the injection timing is retarded 4 degrees from peak power settings and adjustments made, if necessary.

**D. Reporting Requirements**

1. The permittee shall notify the Toledo Division of Environmental Services in writing of any daily record showing that this emissions unit exceeds the applicable maximum processing rate limitation. The notification shall include a copy of such record. If no deviations occurred, then the permittee shall submit a semi-annual report which states that no deviations occurred during that period. These reports shall be submitted to the Toledo Division of Environmental Services by January 30 and July 30 of each year and shall cover operation during the previous six calendar months.
2. The permittee shall submit a semi-annual carbon replacement deviation (excursion) reports that identify all periods of time during which the activated carbon in the carbon absorber system is not replaced at the predetermined interval specified above. If no deviations occurred, then the permittee shall submit a semi-annual report which states that no deviations

occurred during that period. These reports shall be submitted to the Toledo Division of Environmental Services by January 30 and July 30 of each year and shall cover operation during the previous six calendar months.

3. The permittee shall submit semi-annual deviation (excursion) reports that identify all periods of time during which the crusher was operated at a rate greater than the monthly cumulative operating hour restriction above and/or greater than 4,000 hours per rolling twelve month period. If no deviations occurred, then the permittee shall submit a semi-annual report which states that no deviations occurred during that period. These reports shall be submitted to the Toledo Division of Environmental Services by January 30 and July 30 of each year and shall cover operation during the previous six calendar months.
4. The permittee shall submit semi-annual deviation (excursion) reports that identify all periods of time during which the water spray was not operating. If no deviations occurred, then the permittee shall submit a semi-annual report which states that no deviations occurred during that period. These reports shall be submitted to the Toledo Division of Environmental Services by January 30 and July 30 of each year and shall cover operation during the previous six calendar months.
5. The permittee shall submit pressure drop deviation (excursion) reports that identify that all periods of time during which the pressure drop across the fabric/carbon filter did not comply with the allowable range specified above. If no deviations occurred, then the permittee shall submit a semi-annual report which states that no deviations occurred during that period. These reports shall be submitted to the Toledo Division of Environmental Services by January 30 and July 30 of each year and shall cover operation during the previous six calendar months.
6. The permittee shall submit an annual report indicating the results of the injection timing monitoring required above. This report shall be submitted by January 30 of each year and shall cover the previous calendar year.
7. The permittee shall submit deviation (excursion) reports that identify that all periods of time during which there were visible emissions from the fabric/carbon filter exhaust. If no deviations occurred, then the permittee shall submit a semi-annual report which states that no deviations occurred during that period. These reports shall be submitted to the

Toledo Division of Environmental Services by January 30 and July 30 of each year and shall cover operation during the previous six calendar months.

**E. Compliance Method Requirements**

1. Compliance with the emission limitation(s) of this Permit to Install shall be determined in accordance with the following method(s):

a. Emission Limitation: 0.20 pounds of particulate per hour.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation in accordance with the methods and procedures specified in Method 5 of 40 CFR Part 60, Appendix A.

b. Emission Limitation: 99% overall control efficiency for particulate.

Applicable Compliance Method: Use of an adequate enclosure, use of water spray to sufficiently wet the material and compliance with the visible emissions limitations.

c. Emission Limitation: 0.4 ton of particulate per year.

Applicable Compliance Method: Compliance with the short term limitation for particulate and with the monitoring and record keeping requirements will be considered adequate demonstration of compliance.

d. Emission Limitation: 90% overall control efficiency for mercury.

Applicable Compliance Method: Use of an adequate enclosure, use of water spray to sufficiently wet the material, compliance with the monitoring and record keeping requirements for replacement of the activated carbon and compliance with the visible emissions limitations.

e. Emission Limitation: 0.00011 pound of mercury per hour.

Applicable Compliance Method: Compliance shall be demonstrated through the record keeping requirements. If required, the permittee shall demonstrate compliance with this emission limitation in accordance with the methods and procedures specified in Method 101A.

- f. Emission Limitation: 0.00022 ton of mercury per year.

Applicable Compliance Method: Compliance with the short term limitation for mercury and with the record keeping requirements will be considered adequate demonstration of compliance.

- g. Emission Limitation: 20% opacity as a six-minute average.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation in accordance with the methods and procedures specified in OAC 3745-17-03(B)(1).

- h. Emission Limitation: Visible emissions shall not exceed 5 percent opacity as a 3-minute average.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation in accordance with the methods and procedures specified in OAC 3745-17-03(B)(3).

- I. Emission Limitation: No visible emissions from the fabric/carbon filter exhaust.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation in accordance with the methods and procedures specified in OAC 3745-17-03(B)(4).

- j. Emission Limitation: 2.8 pounds per hour and 5.6 tons of carbon monoxide per year.

Applicable Compliance Method: Compliance shall be based upon an emission factor of 0.0067 lb CO/bhp-hr. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, dated 10/96 Section 3.3, Table 3.3-1. If required, the permittee shall demonstrate compliance with this emission limitation in accordance with the methods and procedures specified in Method 10 of 40 CFR Part 60, Appendix A and the Monitoring and Record Keeping Requirements.

- k. Emission Limitation: 9.2 pounds per hour and 18.4 tons of nitrogen oxides per year.

Applicable Compliance Method: Compliance shall be based upon an emission factor of emission factor of 0.022 lb NOx/bhp-hr (0.031 lb/bhp-hr assuming

30% control efficiency for PCV, turbo-charged w/after cooler, and timing retard). This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, dated 10/96 Section 3.3, Table 3.3-1. If required, the permittee shall demonstrate compliance with this emission limitation in accordance with the methods and procedures specified in Method 7 of 40 CFR Part 60, Appendix A and the monitoring and Record Keeping Requirements.

- l. Emission Limitation: 0.94 pounds per hour and 1.88 tons particulate matter per year.

Applicable Compliance Method: Compliance shall be based upon an emission factor of 0.0022 lb/bhp-hr. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, dated 10/96 Section 3.3, Table 3.3-1. If required, the permittee shall demonstrate compliance with this emission limitation in accordance with the methods and procedures specified in Method 5 of 40 CFR Part 60, Appendix A and the Monitoring and Record keeping Requirements.

- m. Emission Limitation: 0.89 pounds per hour and 1.78 tons of sulfur dioxide per year.

Applicable Compliance Method: Compliance shall be based upon an emission factor of 0.0021 lb/bhp-hr. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, dated 10/96 Section 3.3, Table 3.3-1. If required, the permittee shall demonstrate compliance with this emission limitation in accordance with the methods and procedures specified in Method 6 of 40 CFR Part 60, Appendix A and the Monitoring and Record Keeping Requirements.

- n. Emission Limitation: 1.1 pounds per hour and 2.2 tons of volatile organic compounds per year.

Applicable Compliance Method: Compliance shall be based upon an emission factor of 0.0025 lb/bhp-hr. This emission factor is specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, dated 10/96 Section 3.3, Table 3.3-1. If required, the permittee shall demonstrate

compliance with this emission limitation in accordance with the methods and procedures specified in Method 25 of 40 CFR Part 60, Appendix A and the Monitoring and Record keeping Requirements.

AIR EMISSION SUMMARY

The air contaminant sources listed below comprise the Permit to Install for **Enviro, Inc.** located in **Lucas** County. The sources listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

<u>Ohio EPA Source No.</u>	<u>Source Identification/Description</u>	<u>BAT Determination</u>	<u>Applicable Federal and OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control &amp; Usage Requirements</u>
P901	Fluorescent bulb processing/ Crusher, screener, 425 hp diesel engine	<p>Process: Enclosure sufficient to minimize fugitive emissions; use of fabric filter followed by activated carbon, and water spray; 5% opacity as a 3 minute average</p> <p>Engine: AP-42 emission factors with 30% control for NOx, turbocharger with aftercooler, PCV.</p>	<p>OAC 3745-17-07(A)(1)</p> <p>OAC 3745-17-07(B)(1)</p> <p>OAC 3745-17-08(B)(3)</p> <p>OAC 3745-17-11(A)(2)</p> <p>OAC 3745-18-06(B)</p> <p>OAC 3745-21-07(B) OAC 3745-21-08(B) OAC 3745-23-06(B)</p>	<p>Engine:20% opacity as a 6-minute average, unless otherwise specified by the rule. Process:This applicable rule is less stringent than the BAT determination that resulted in the emission limitation.</p> <p>This applicable rule is less stringent than the BAT determination that resulted in the emission limitation for the process.</p> <p>This applicable rule is less stringent than the BAT determination that resulted in the emission limitation.</p> <p>This applicable rule is less stringent than the BAT determination that resulted in the emission limitation.</p> <p>exemption from the sulfur dioxide requirement of 0.5 pound per MMBtu.</p> <p>These rules require emissions to be minimized by use of the latest available control techniques and operating practices in</p>

accordance with best current technology. The emission limitations listed below have been determined using best available technology.

3745-31-05

Process

Particulate: 99% overall control, 0.20 pound per hour and 0.4 ton per year.

Mercury: 90% overall control, 0.00011 pound per hour and 0.00022 ton per year.

Fugitive emissions shall not exceed 5% opacity as a 3-minute average. There shall be no visible emissions from the fabric/carbon filter exhaust.

Engine Exhaust

CO: 2.8 pounds per hour and 5.6 tons per year.

NO<sub>x</sub>: 9.2 pounds per hour and 18.4 tons per year.

PM: 0.94 pound per hour and 1.88 tons per year.

SO<sub>2</sub>: 0.89 pound per hour and 1.78 tons per year.

VOC: 1.1 pounds per hour and 2.2 tons per year.

SUMMARY

TOTAL PERMIT TO INSTALL ALLOWABLE EMISSION

<u>Pollutant</u>	<u>Tons/yr</u>
CO	5.6
Hg	0.00022
NO <sub>x</sub>	18.4
PM	2.28
SO <sub>2</sub>	1.78
VOC	2.2