

Facility ID: 1431072069 Issuance type: Final State Permit To Operate

This version of facility specific terms and conditions was converted from a database format to an HTML file during an upgrade of the Ohio EPA, Division of Air Pollution Control's permitting software. Every attempt has been made to convert the terms and conditions to look and substantively conform to the permit issued or being drafted in STARS. However, the format of the terms may vary slightly from the original. In addition, although it is not expected, there is a slight possibility that a term and condition may have been inadvertently "left out" of this reproduction during the conversion process. Therefore, if this version is to be used as a starting point in drafting a new version of a permit, it is imperative that the entire set of terms and conditions be reviewed to ensure they substantively mimic the issued permit. The official version of any permit issued final by Ohio EPA is kept in the Agency's Legal section. The Legal section may be contacted at (614) 644-3037.

In addition to the terms and conditions, hyperlinks have been inserted into the document so you may more readily access the section of the document you wish to review.

Finally, the term language under "Part II" and before "A. Applicable Emissions Limitations..." has been added to aid in document conversion, and was not part of the original issued permit.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1431072069 Emissions Unit ID: N003 Issuance type: Final State Permit To Operate

[Go to the top of this document](#)

Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
N003 - 72 dry ton-per-day fluidized bed incinerator for sewage sludge with venturi and impingement tray scrubbers (Modification)	40 Code of Federal Regulations (CFR) Part 60, Subpart O	1.30 lbs PM/ton dry sludge input;
		See term A.2.c.
	40 CFR Part 61 Subpart C	10 grams Beryllium (Be)/24-hour period.
	40 CFR Part 61 Subpart E	3200 grams Mercury (Hg)/24-hour period.
	Ohio Administrative Code (OAC) rule 3745-31-05(A)(3)	93.6 lbs/day PM, 17.1 TPY PM;
	PTI-14-03931	31.7 lbs/day PM10, 5.8 TPY PM10;
		532.8 lbs/day SO2, 97.2 TPY SO2;
		198.0 lbs/day OC, 36.1 TPY OC;
		360.0 lbs/day NOx, 65.7 TPY NOx;
		684.0 lbs/day CO, 124.8 TPY CO;
		1.6 lbs/day Arsenic, 0.3 TPY Arsenic;
		4.0 lbs/day Cadmium, 0.7 TPY Cadmium;
		45.7 lbs/day Chromium, 8.3 TPY Chromium;
		10.6 lbs/day Lead, 1.9 TPY Lead;
	141.1 lbs/day Nickel, 9.9 TPY Nickel;	
	1.3 TPY Hg;	
	0.004 TPY Be.	
	The requirements of this rule also include compliance	

OAC rule 3745-17-07	with the requirements of 40 CFR Part 60, Subpart O, 40 CFR Part 61, Subpart C & E, 40 CFR Part 503, OAC rule 3745-17-09, OAC rule 3745-21-08(B) and OAC rule 3745-23-06(B).
OAC rule 3745-17-09	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to 40 CFR Part 60 Subpart O.
OAC rule 3745-21-08(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to 40 CFR Part 60 Subpart O.
OAC rule 3745-23-06(B)	See term B.10.
40 CFR Part 503	See Section A.2.d. See Section A.2.e. See Section A.2.a.

2. Additional Terms and Conditions

(a) This emissions unit is subject to the applicable provisions of the Standards for the use or disposal of sewage sludge as promulgated by the United States Environmental Protection Agency under 40 CFR Part 503 Subpart E, which applies to facilities that incinerate sewage sludge.

(1) Firing of sewage sludge in a sewage sludge incinerator shall not violate the requirements in the National Emission Standard for Beryllium in subpart C of 40 CFR part 61.

(2) Firing of sewage sludge in a sewage sludge incinerator shall not violate the requirements in the National Emission Standard for Mercury in subpart E of 40 CFR part 61.

(3) The average daily concentration for lead in sewage sludge fed to a sewage sludge incinerator shall not exceed the concentration calculated using equation (4) from subpart E of 40 CFR part 503.43(c).

(4) The average daily concentration for arsenic, cadmium, chromium, and nickel in sewage sludge fed to a sewage sludge incinerator, each shall not exceed the concentration calculated using equation (5) from subpart E of 40 CFR part 503.43(d).

(5) The monthly average concentration for total hydrocarbons in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture using the correction factor from equation (7) from subpart E of 40 CFR part 503.44(a) and to seven percent oxygen using the correction factor from equation (8) from subpart E of 40 CFR part 503.44(b), shall not exceed 100 parts per million on a volumetric basis.

The emissions from this emissions unit shall not exceed the following:

(1) The maximum allowable emissions for particulate matter shall not exceed 1.30 pounds of particulate matter per ton of dry sludge input according to 40 CFR 60.152. Compliance shall be determined using the test methods and equations specified in 40 CFR 60.154.

(2) Beryllium emission from this emissions unit shall not exceed 10 grams of beryllium over a 24-hour period according to 40 CFR 61.32.

(3) Mercury emissions from this emission unit shall not exceed 3200 grams of mercury per 24-hour period according to 40 CFR 61.52(b).

The permittee shall not discharge into the atmosphere any gases which exhibit twenty percent (20%) opacity or greater according to 40 CFR 60.152.

All new stationary carbon monoxide emission sources shall minimize carbon monoxide emissions by use of the best available control techniques and operating practices in accordance with best current technology.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of state regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementaion Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revision to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

All new stationary nitrogen oxide emission sources shall minimize nitrogen oxide emissions by use of the latest available control techniques and operating practices in accordance with best current technology.

On February 15, 2005, OAC rule 3745-23-06 was rescinded and therefore no longer part of State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementaion Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revision to OAC rule 3745-23-06, the requirement to satisfy the "latest available control techniques and operational practices" still exists as part of the federally-approved SIP for Ohio.

Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of venturi and impingement tray scrubbers and compliance with all applicable emission limitations.

B. Operational Restrictions

1. The combined scrubber system operating parameters shall be based on results of the most recent performance test which demonstrated compliance. The total pressure drop of the gas flow and the scrubber liquid flow rate range through the combined scrubber system shall be determined during the most recent performance test in which compliance is demonstrated.

2. The permittee shall submit semiannual reports which contain a record of average scrubber pressure drop

measurements for each period of 15 minutes duration or more during which the pressure drop of the scrubber was less than, by a percentage calculated specified in 40 CFR 60.115(a)(1), the average scrubber pressure drop measured during the most recent performance test.

3. The average oxygen content of the incinerator exhaust gas (measured as specified in term and condition B.5.c.) for each one-hour incinerator operation period, shall not exceed the oxygen content measured during the most recent performance test by more than 3 percent.
4. The bed of the fluidized bed incinerator shall be maintained at a temperature to be determined during a performance test in which compliance is demonstrated. The operation of the sewage sludge incinerator shall not exceed the maximum or minimum combustion temperatures (averaged over each one-hour incinerator operation period) as determined during the performance test of the sewage sludge incinerator.
5. The permittee shall calibrate, maintain, and operate the following monitoring devices:

- a. A flow measuring device which can be used to continuously determine either the mass or volume of sludge charged to the incinerator. The flow measuring device shall be certified by the manufacturer to have an accuracy of plus or minus 5 percent over its operating range. The amount of sludge charged shall be recorded during all periods of operation.

- b. A monitoring device that continuously monitors and records the pressure drop of the gas flow through the combined wet scrubber system. This device shall be certified by the manufacturer to be accurate within plus or minus 1 inch water gauge and shall be calibrated on an annual basis in accordance with the manufacturer's instructions.

- c. An oxygen content monitoring device that continuously measures and records the oxygen content of the incinerator exhaust gas. The oxygen monitor shall be located upstream of any rabble shaft cooling air inlet into the incinerator exhaust gas stream, fan, ambient air recirculation damper, or any other source of dilution air.

The oxygen monitoring device shall be certified by the manufacturer to have a relative accuracy of plus or minus 5 percent over its operating range and shall be calibrated according to the methods prescribed by the manufacturer at least once each 24 hour operating periods.

- d. A monitoring device that monitors the water flow rate through the scrubber so that proper operation of the scrubber can be verified.

- e. Continuous temperature measuring devices to measure and record temperatures in the bed and outlet of the fluidized bed incinerator. Each temperature measuring device shall be certified by the manufacturer to have an accuracy of plus or minus 5 percent over its operating range.

- f. Continuous measuring device for measuring fuel flow to the incinerator. Each fuel flow measuring device shall be certified by the manufacturer to have an accuracy of plus or minus 5 percent over its operating range.

- g. An instrument that continuously measures and records the total hydrocarbons concentration in the sewage sludge incinerator stack exit gas.

The total hydrocarbons instrument shall employ a flame ionization detector; shall have a heated sampling line maintained at a temperature of 150 degrees Celsius or higher at all times; and shall be calibrated at least once every 24-hour operating period using propane.

- h. An instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas.

- i. An instrument that continuously measures and records combustion temperatures.

- j. Operation of a sewage sludge incinerator shall not cause the operating combustion temperature for the sewage sludge incinerator to exceed the performance test combustion temperature by more than 20 percent.

6. Little Miami WWTP shall provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained. Except as provided in paragraph 40 CFR 60.153(d), this facility shall collect a representative grab sample of the sludge fed to the fluidized bed incinerator once per day. This facility shall analyze the sample for volatile solids content and dry sludge content once per day. The gram sample shall be analyzed according to the method specified under 40 CFR 60.154 (c) (2), except that step 3(b) of the method may be deleted.

7. If the particulate matter emission rate measured during the performance test required under 40 CFR 60.153 (d) is less than 0.75 lb/ton, this facility shall not be required to operate continuous monitoring devices for the mass or volume of sludge charged to the incinerator, temperature of the incinerator bed, and the fuel flow to the incinerator. If exempt from continuous monitoring of the mass or volume of sludge, then the facility shall maintain daily records of the amount of sludge charged.

8. Beryllium and mercury shall be monitored as specified under 40 CFR 61 Subparts C and E respectively and as outlined in Section E, Testing Requirements, terms 1-5 and Section C, term 1.

9. The following quality assurance/quality control requirements shall apply:

- a. Fuel flow continuous monitoring - quarterly calibration error checks.

- b. Temperature continuous monitoring - quarterly calibration error checks.

- c. Rate of sludge charged to the incinerator continuous monitoring - quarterly calibration error check.

10. The incinerator, including all associated equipment and grounds, shall be designed, operated and maintained so as to prevent the emission of objectionable odors.

C. Monitoring and/or Record Keeping Requirements

1. The Little Miami Wastewater Treatment Plant shall maintain the following monitoring records and retain the following information in its files for a period of not less than five (5) years:
 - a. A continuous or daily record of the pressure drop of the gas flow through the combined scrubber and the 15 minute average of the pressure drop.
 - b. A continuous or daily record of the rate of sludge charged to the incinerator according to additional terms and conditions B.5.a and B.7.
 - c. A daily record of the sludge sampling, dry sludge content, and the volatile solids content of the sludge charged to the incinerator*.
 - d. A continuous record of the fuel flow to the incinerator*.
 - e. A continuous record of the temperatures in the bed and outlet of the fluidized bed incinerator*.
 - f. A continuous record of the oxygen content of the exhaust gas.
 - g. Records of any information that indicates the requirements of the 40 CFR 61 Parts C and E have been met.
 - h. Daily records identifying the maximum and minimum value of each operating parameter (e.g. temperature of the incinerator bed and outlet, combined scrubber pressure drop, scrubber liquid flow range, oxygen content of the incinerator exhaust gas) that is not to be exceeded. These levels are based on the results of the performance test during which compliance was demonstrated.
 - i. The concentration of lead, arsenic, cadmium, chromium, and nickle in the sewage sludge incinerator.
 - j. The total hydrocarbons concentrations in the exit gas from the sewage sludge incinerator stack.
 - k. The oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack.
 - l. The stack height for the sewage sludge incinerator.
 - m. The dispersion factor for the site where the sewage sludge incinerator is located.
 - n. The control efficiency for lead, arsenic, cadmium, chromium, and nickle for each sewage sludge incinerator.
 - o. The risk specific concentration for chromium calculated using equation (6) from 40 CFR Part 503.43 Subpart E, if applicable.
 - p. A calibration and maintenance log for the instruments used to measure the total hydrocarbons concentration and oxygen concentration in the exit gas from the sewage sludge incinerator stack, the information needed to determine moisture content in the exit gas, and the combustion temperatures.

The information shall be made available to the Director or any authorized representative of the Director, for review during normal business hours.

* A record and report of the fuel flow, total solids and volatile solids content of the sludge charged to the incinerator, and incinerator bed temperature is not required if emissions tests of the incinerator demonstrate that particulate matter (PM) emissions are less than 0.75 pounds PM per ton of dry sludge input.
2. The frequency of monitoring for beryllium shall be as required in Subpart C of 40 CFR part 61, and for mercury as required in Subpart E of 40 CFR part 61.
3. The frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel in sewage sludge fed to a sewage sludge incinerator shall be the frequency in Table 1 of 40 CFR Part 503.46 Subpart E.

After the sewage sludge has been monitored for two years at the frequency in Table 1 of 40 CFR Part 503.46 Subpart E, the permitting authority may reduce the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel.
4. The total hydrocarbons concentration and oxygen concentration in the exit gas from a sewage sludge incinerator stack, the information used to measure content in the exit gas, and the combustion temperatures for the sewage sludge incinerator shall be monitored continuously.
5. For sewage sludge incinerators subject to the requirements in subpart O of 40 CFR part 60, the frequency of monitoring for the appropriate air pollution control device operating parameters shall be the frequency of monitoring in subpart O of 40 CFR part 60. For all other sewage sludge incinerators, the appropriate air pollution control device operating parameters shall be at least daily.
6. The permittee shall keep a record of the amount of nickel emitted annually. This amount shall be calculated by multiplying the emission rate documented at the most recent stack test for nickel in pounds nickle/ton of dry sludge by the actual annual amount of sludge fed to the incinerator.
7. The permittee shall maintain monthly records of the following information for this emissions unit in order to monitor compliance with the annual emission limitation:
 - a. The total emissions, in tons, of PM for each month.
 - b. The total emissions, in tons, of PM10 for each month.
 - c. The total emissions, in tons, of SO2 for each month.
 - d. The total emissions, in tons, of OC for each month.
 - e. The total emissions, in tons, of NOx for each month.

f. The total emissions, in tons, of CO for each month.

D. Reporting Requirements

1. This permittee shall submit semi-annual exceedance reports which provide records of the operating conditions of the fluidized bed incinerator for each calendar day when:
 - a. For each period of 15 minute duration or more, the total pressure drop across the combined scrubber system is less than, by a percentage specified in 40 CFR 60.155 and as calculated in 40 CFR 60.155(a), the average scrubber pressure drop measured during the most recent performance test.
 - b. The incinerator bed and outlet temperature falls below a minimum temperature, determined during the most performance test in which compliance was demonstrated.
 - c. The oxygen content of incinerator exhaust gas exceeds the average oxygen content measured during the most recent performance test by more than three (3) percent for any 1-hour period.
2. The semi-annual exceedance report (described in Term D.1) shall include records, for each calendar day that the scrubber pressure drop, incinerator bed temperature, or oxygen content of the exhaust gas is outside the allowable limits specified above, of the following:
 - a. The scrubber pressure drop average over each 1-hour incinerator operation period.
 - b. The oxygen content in the incinerator exhaust average over each 1-hour incinerator operation period.
 - c. The temperature of the bed and outlet of the fluidized bed incinerator, averaged over each 1-hour incinerator operating period.
 - d. The rate of sludge charged to the incinerator averaged over each 1-hour incinerator operating period.
 - e. The incinerator fuel use averaged over each 8-hour incinerator operating period.
 - f. The moisture and volatile solids content of the daily grab sample of sludge charged to the incinerator.

These semi-annual reports shall be submitted by January 30 and July 30 of each year and shall cover the previous six calendar months (January through June and July through December, respectively).

3. The permittee shall submit annual reports which specify the total nickel, PM, CO, SO₂, NO_x and OC emissions from this emissions unit for the previous calendar year. These reports shall be submitted January 31 of each year.

E. Testing Requirements

1. As specified in 40 CFR 60.8, each performance test shall consist of at least three separate runs at the same operating conditions. A control efficiency for a pollutant shall be based on the arithmetic mean of the results from the three runs.
2. All continuous monitoring systems and monitoring devices shall be operational, and calibrated prior to conducting performance tests.
3. This permittee shall test emissions from emissions unit N003 for beryllium to comply with 40 CFR 61, Subpart C. The permittee shall conduct a performance test for beryllium within 90 days after initial startup, using Method 103 or 104 in Appendix B and described in 40 CFR 61.33 or Method 29 determine maximum emissions over a 24 hour period.
 - a. Samples shall be analyzed and emissions determined within 30 days after the emissions unit performance stack test.
 - b. If test results show that beryllium emissions do not exceed 10 grams per 24-hour period, further testing for beryllium emissions shall be done on a bi-annual basis. This future testing upon EPA approval may be performed using sludge analysis methods.
4. This permittee shall test emissions from emissions unit N003 for mercury to comply with 40 CFR 61, Subpart E by conduction:
 - a. An annual stack test using Method 101A or 104 in Appendix B and paragraph 61.54 of 40 CFR 61 or Method 29; or
 - b. An annual sludge sampling test using Method 105 in Appendix B and paragraph 61.54 of 40 CFR 61.

Samples shall be taken over such a period as necessary to determine accurately the maximum emissions which will occur in a 24-hour period. Samples shall be analyzed and emissions determined within 30 days after the emissions unit performance stack test.

If test results show that mercury emissions do not exceed 1600 grams per 24-hour period, further testing for beryllium emissions shall be done on a bi-annual basis. This future testing upon EPA approval may be performed using sludge analysis methods.
5. Particulate emission tests shall be conducted in accordance with the test methods and procedures specified in 40 CFR 60.154. Beryllium and mercury emission tests shall be conducted in accordance with the test methods and procedures specified in 40 CFR 61 or Method 29. The nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), organic compounds (OCs) and metals tests shall be conducted in accordance with test methods and procedures approved by the Hamilton County Dept. of Environmental Services.

Pollutant Test Method

Particulate Matter 40 CFR 60.154

Nitrogen Oxides 7

Carbon Monoxide 10
Sulfur Dioxide 6
Organic Compounds 25A
Beryllium, mercury 29, 101A, 103 or 104
Metals 29

6. Compliance with the visible particulate emissions limitation specified in 40 CFR 61.52(b) shall determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).
7. The emission limitation of 93.6 lbs/day PM specified in term A.1 was calculated by mutiplying the allowable particulate emission rate from 40 CFR Part 60, Subpart O of 1.3 lbs PM/ton of dry sludge input by the maximum sludge feed rate of 72 tons per day.

The emission limitation of 17.1 TPY PM was calculated by multiplying the daily emission rate of 93.6 lbs/day PM by 365 days per year and dividing by 2000 lbs/ton.
8. The emission limitation of 31.7 lbs/day PM10 specified in term A.1 was calculated by mutiplying the emission factor from PTI 14-03931 application submitted December 19, 1996 of 0.44 lb PM10/dry ton sludge input by the maximum sludge feed rate of 72 tons per day.

The emission limitation of 5.8 TPY PM10 was calculated by multiplying the daily emission rate of 31.7 lbs/day PM10 by 365 days per year and dividing by 2000 lbs/ton.
9. The emission limitation of 532.8 lbs/day SO2 specified in term A.1 was calculated by mutiplying the emission factor from PTI 14-03931 application submitted December 19, 1996 of 7.4 lbs SO2/dry ton sludge input by the maximum sludge feed rate of 72 tons per day.

The emission limitation of 97.2 TPY SO2 was calculated by multiplying the daily emission rate of 532.8 lbs/day SO2 by 365 days per year and dividing by 2000 lbs/ton.
10. The emission limitation of 684.0 lbs/day CO specified in term A.1 was calculated by mutiplying the emission factor from PTI 14-03931 application submitted December 19, 1996 of 9.5 lbs CO/dry ton sludge input by the maximum sludge feed rate of 72 tons per day.

The emission limitation of 124.8 TPY CO was calculated by multiplying the daily emission rate of 684.0 lbs/day CO by 365 days per year and dividing by 2000 lbs/ton.
11. The emission limitation of 360.0 lbs/day NOx specified in term A.1 was calculated by mutiplying the emission factor from PTI 14-03931 application submitted December 19, 1996 of 5.0 lbs NOx/dry ton sludge input by the maximum sludge feed rate of 72 tons per day.

The emission limitation of 65.7 TPY NOx was calculated by multiplying the daily emission rate of 360.0 lbs/day NOx by 365 days per year and dividing by 2000 lbs/ton.
12. The emission limitation of 198.0 lbs/day OC specified in term A.1 was calculated by mutiplying the emission factor from PTI 14-03931 application submitted December 19, 1996 of 2.75 lbs NOx/dry ton sludge input by the maximum sludge feed rate of 72 tons per day.

The emission limitation of 36.1 TPY OC was calculated by multiplying the daily emission rate of 198.0 lbs/day OC by 365 days per year and dividing by 2000 lbs/ton.
13. The emission limitation of 1.6 lbs/day arsenic specified in term A.1 was calculated by mutiplying the emission factor from PTI 14-03931 application submitted December 19, 1996 of 0.0225 lb arsenic/dry ton sludge input by the maximum sludge feed rate of 72 tons per day.

The emission limitation of 0.3 TPY arsenic was calculated by multiplying the daily emission rate of 1.6 lbs/day arsenic by 365 days per year and dividing by 2000 lbs/ton.
14. The emission limitation of 4.0 lbs/day cadmium specified in term A.1 was calculated by mutiplying the emission factor from PTI 14-03931 application submitted December 19, 1996 of 0.0557 lb cadmium/dry ton sludge input by the maximum sludge feed rate of 72 tons per day.

The emission limitation of 0.7 TPY cadmium was calculated by multiplying the daily emission rate of 4.0 lbs/day cadmium by 365 days per year and dividing by 2000 lbs/ton.
15. The emission limitation of 45.7 lbs/day chromium specified in term A.1 was calculated by mutiplying the emission factor from PTI 14-03931 application submitted December 19, 1996 of 0.635 lb chromium/dry ton sludge input by the maximum sludge feed rate of 72 tons per day.

The emission limitation of 8.3 TPY chromium was calculated by multiplying the daily emission rate of 45.7 lbs/day chromium by 365 days per year and dividing by 2000 lbs/ton.
16. The emission limitation of 10.6 lbs/day lead specified in term A.1 was calculated by mutiplying the emission factor from PTI 14-03931 application submitted December 19, 1996 of 0.147 lb lead/dry ton sludge input by the maximum sludge feed rate of 72 tons per day.

The emission limitation of 1.9 TPY lead was calculated by multiplying the daily emission rate of 10.6 lbs/day lead by 365 days per year and dividing by 2000 lbs/ton.
17. The emission limitation of 141.1 lbs/day nickel specified in term A.1 was calculated by mutiplying the emission factor from PTI 14-03931 application submitted December 19, 1996 of 1.96 lbs nickel/dry ton sludge input by the maximum sludge feed rate of 72 tons per day.

Compliance with the annual emission limitation of 9.9 TPY nickel shall be demonstrated by the recordkeeping and annual report required in terms C.6 and D.3, respectively.

18. The emission limitation of 1.3 TPY mercury was calculated by multiplying the allowable daily emission rate of 7.1 lbs/day mercury by 365 days per year and dividing by 2000 lbs/ton.
19. The emission limitation of 0.004 TPY beryllium was calculated by multiplying the allowable daily emission rate of 0.022 lb/day beryllium by 365 days per year and dividing by 2000 lbs/ton.
20. The emission limits for arsenic, cadmium, chromium and nickel were calculated using equation 5 in 40 CFR part 503.43, Subpart E.

The emission limit for lead was calculated using equation 4 in 40 CFR part 503.43, Subpart E.

The emission limit for mercury was based on 40 CFR 61.52(b)

The emission limit for beryllium are based on 40 CFR 61.32(a)
21. Emission factors for PM, SO₂, NO_x, CO and OC were determined after considering permit information from data collected by HCDOES on other fluidized bed incinerators, AP-42 Tables 2.2-6 and 2.2-8 and emission factors proposed by the permittee.

F. **Miscellaneous Requirements**

None