

**Synthetic Minor Determination and/or**  **Netting Determination**  
Permit To Install **14-05837**

**A. Source Description**

The Mill Creek Waste Water Treatment Plant is a publicly-owned treatment works (POTW) located in Cincinnati, Hamilton County consisting of primary and secondary biological systems for treating municipal and industrial wastewater. This facility is one of 7 major sewer treatment plants operated by MSD. In this project, MSD plans to replace its six multi-hearth sewage sludge incinerators (Ohio EPA emissions units 1431070944 N001, N002, N003, N004, N006 and N007) with three fluidized bed (FB) incinerators (N008, N009 and N010).

**B. Facility Emissions and Attainment Status**

The Mill Creek facility is a major source where potential CO emissions are greater than 250 tons per year and potential NO<sub>x</sub> and OC emissions are each greater than 100 tons per year. Potential PM and PM<sub>10</sub> emissions are under 100 ton per year. The SO<sub>2</sub> emissions are less than 250 tons per year.

**C. Source Emissions**

The current capacity of the facility to process sewage sludge in the multi-hearth units is limited to 303 tons per day of dry sludge solids and 110,595 tpy. Each new fluidized bed incinerator will have the rated capacity of 4 dry tons per hour. The total rated capacity of the new incinerators to process sewage sludge after the incinerator replacement will be 288 tons per day of dry sludge solids. The proposed enforceable limit on the total annual amount of dry sludge solids incinerated in the three FB units of 82,500 tpy. The enforceability of the annual throughput limits will limit the net increase in annual emissions below the significant emission rate for each affected pollutant. The limits will make the replacement project a minor modification under State and federal PSD and NSR regulations.

**D. Conclusion**

MSD proposes to accept an enforceable limit on the combined annual amount of dry sludge solids incinerated in the three incinerators of 82,500 tons. By MSD accepting the enforceability of this annual sludge throughput, the net increase in annual emissions due to the incinerator replacement will be below the respective significant for each affected pollutant. The incinerator replacement project is then a minor modification under State and federal PSD and NNSR regulations.

While the applicant designed the emissions limitations such that all criteria pollutants would be accounted for in the netting, only CO exceeds the PSD major source threshold and Nonattainment New Source Review would apply to VOC and NO<sub>x</sub> (NO<sub>x</sub> as related to the Ozone nonattainment area.) The remaining pollutants are currently below their respective major source thresholds and the proposed project will not trigger PSD and NSR by themselves.

PUBLIC NOTICE      PUBLIC HEARING  
OHIO ENVIRONMENTAL PROTECTION AGENCY  
ISSUANCE OF DRAFT ACTION  
OF AN AIR PERMIT TO INSTALL TO  
MILL CREEK WASTEWATER TREATMENT PLANT

Public notice is hereby given that the Ohio Environmental Protection Agency (EPA), Division of Air Pollution Control has issued, on September 21, 2006, a draft action of air Permit to Install (PTI) application No. 14-05837 to the Mill Creek Wastewater Treatment Plant. The Mill Creek Wastewater Treatment Plant, operated by the Metropolitan Sewer District, has applied for the installation of three 4 tons per hour fluidized bed sewage sludge incinerators to replace the current existing Metropolitan Sewer District's six multi-hearth sewage sludge incinerators located at 1600 Gest Street in Cincinnati, Ohio.

A public information session meeting and public hearing on the draft air permit is scheduled for Thursday, November 2, 2006 at the St. Michael's Center, 2104 St. Michael Street, Cincinnati, Ohio 45204. The public information session will commence at 7:00 p.m. and the hearing will follow immediately to accept comments on the draft permit. A presiding officer will be present and may limit oral testimony to ensure that all parties are heard.

All interested persons are entitled to attend or be represented and give written or oral comments on the draft permit at the hearing. Written comments must be received by the close of the business day on November 13, 2006. Comments received after this date will not be considered to be a part of the official record.

Written comments may be submitted at the hearing or sent to: John Barlage of the Hamilton County Department of Environmental Services at 250 William Howard Taft Road, Cincinnati, Ohio 45219.

Copies of the draft air permit application and technical support information may be reviewed and/or copies made by first calling to make an appointment at the Hamilton County Department of Environmental Services, located at the above address, telephone number (513) 946-7777.



State of Ohio Environmental Protection Agency

**RE: DRAFT PERMIT TO INSTALL  
HAMILTON COUNTY**

**CERTIFIED MAIL**

Street Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:  
Lazarus Gov.  
Center

**Application No:** 14-05837

**Fac ID:** 1431070944

**DATE:** 9/21/2006

Mill Creek Wastewater Treatment Plant  
Michael Heitz  
1600 Gest Street  
Cincinnati, OH 45205

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$4500** will be due. Please do not submit any payment now.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Sincerely,

Michael W. Ahern, Manager  
Permit Issuance and Data Management Section  
Division of Air Pollution Control

CC: USEPA

HCDES

OH-KY-IN Regional Council of Gov.

KY

IN



STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

**Permit To Install  
Terms and Conditions**

**Issue Date: To be entered upon final issuance  
Effective Date: To be entered upon final issuance**

**DRAFT PERMIT TO INSTALL 14-05837**

Application Number: 14-05837  
Facility ID: 1431070944  
Permit Fee: **To be entered upon final issuance**  
Name of Facility: Mill Creek Wastewater Treatment Plant  
Person to Contact: Michael Heitz  
Address: 1600 Gest Street  
Cincinnati, OH 45205

Location of proposed air contaminant source(s) [emissions unit(s)]:

**1600 Gest Street  
Cincinnati, Ohio**

Description of proposed emissions unit(s):

**Installation of three fluid bed incinerators to replace 6 existing multiple hearth incinerators at the facility.**

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Mill Creek Wastewater Treatment Plant  
PTI Application: 14-05837  
Issued: To be entered upon final issuance  
Part I - GENERAL TERMS AND CONDITIONS

Facility ID: 1431070944

**A. State and Federally Enforceable Permit-To-Install General Terms and Conditions**

**1. Monitoring and Related Recordkeeping and Reporting Requirements**

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
  - i. The date, place (as defined in the permit), and time of sampling or measurements.
  - ii. The date(s) analyses were performed.
  - iii. The company or entity that performed the analyses.
  - iv. The analytical techniques or methods used.
  - v. The results of such analyses.
  - vi. The operating conditions existing at the time of sampling or measurement.
- b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
  - i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
  - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written

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reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the appropriate Ohio EPA District Office or local air agency every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
  - iv. If this permit is for an emissions unit located at a Title V facility, then each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d. The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

## **2. Scheduled Maintenance/Malfunction Reporting**

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

## **3. Risk Management Plans**

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the

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permittee shall comply with the requirement to register such a plan.

#### **4. Title IV Provisions**

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

#### **5. Severability Clause**

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

#### **6. General Requirements**

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification
- b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c. This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

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**7. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

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**8. Federal and State Enforceability**

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

**9. Compliance Requirements**

- a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
  - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
  - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
  - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of

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the Ohio EPA. Progress reports shall contain the following:

- i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
- ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

## **10. Permit-To-Operate Application**

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this permit is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

## **11. Best Available Technology**

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

## **12. Air Pollution Nuisance**

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

## **13. Permit-To-Install**

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to "installation" of "any air contaminant source" as defined in OAC rule 3745-31-01, or "modification", as defined in OAC rule 3745-31-01, of any emissions unit included in

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**Mill Creek Wastewater Treatment Plant**  
**PTI Application: 14-05837**  
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this permit.

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**Issued: To be entered upon final issuance**

**B. State Only Enforceable Permit-To-Install General Terms and Conditions**

**1. Compliance Requirements**

The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

**2. Reporting Requirements**

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

**3. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

**4. Authorization To Install or Modify**

If applicable, authorization to install or modify any new or existing emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of

**Mill Creek Wastewater Treatment Plant****Facility ID: 1431070944****PTI Application: 14-05837****Issued: To be entered upon final issuance**

installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

**5. Construction of New Sources(s)**

This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

**6. Public Disclosure**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

**7. Applicability**

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

**8. Construction Compliance Certification**

If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) that the facility has been constructed in accordance with the permit-to-install application and the terms and conditions of the permit-to-install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

**9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)**

**Mill Creek Wastewater Treatment Plant**

**Facility ID: 1431070944**

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If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly (i.e., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

**Mill Creek Wastewater Treatment Plant****Facility ID: 1431070944****PTI Application: 14-05837****Issued: To be entered upon final issuance****C. Permit-To-Install Summary of Allowable Emissions**

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)  
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
PM	16.5
PM <sub>10</sub>	16.5
SO <sub>2</sub>	49.5
OC	37.2
NO <sub>x</sub>	103.2
CO	70.2
Arsenic	0.10
Beryllium (Be)	0.004
Cadmium	0.25
Chromium	2.84
Lead	0.66
Mercury (Hg)	1.3
Nickel	8.73

**Mill Creek Wastewater Treatment Plant**  
**PTI Application: 14-05837**  
**Issued: To be entered upon final issuance**

**Facility ID: 1431070944**

## Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

### A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

1. This air permit to install (PTI) shall cover the Sludge Incinerator Project at the Metropolitan Sewer District's Mill Creek Treatment Plant facility which involves the replacement of its six multi-hearth sewage sludge incinerators (Ohio EPA emissions units 1431070944 N001, N002, N003, N004, N006 and N007) with three fluidized bed (FB) incinerators (N008, N009 and N010).

The federally enforceable terms and conditions of this PTI have been included for the purpose of netting out of Non-Attainment New Source Review (NNSR) and corresponding Ohio Administrative Code (OAC) regulations for volatile organic compounds (VOC) and nitrogen oxides (NOx), and netting out of Prevention of Significant Deterioration (PSD) for Lead and CO and corresponding OAC regulations for carbon monoxide (CO) emissions. In order to verify that the emissions of these pollutants do not exceed the allowable emission rates described in the netting table below, the permittee must comply with the limitations specified in each emission unit's respective terms and conditions. The other pollutants were considered in the context of the project's analysis and had their emissions limited to below major modification thresholds, however they were not major for this project. The impact of the sludge throughput limitation is provided for in each pollutants' emissions calculation.

Following the NSR definitions in OAC rule 3745-31-01(III) and OAC rule 3745-31-01(O), the actual baseline emissions were based on a consecutive 24-month period within 10 years of the permit application for the Sludge Incinerator Replacement Project, submitted April 24, 2006. MSD used the period of 1998 - 1999 as the baseline for emission calculations of the following pollutants: total particulate emissions (PE), particulate matter less than 10 microns (PM10) and nitrogen oxides (NOx). MSD used the period of 2003 - 2004 as the baseline for emission calculations of sulfur dioxide (SO2), carbon monoxide (CO) and volatile organic compounds (VOC). For lead the 24-month baseline period for actual emissions used by the permittee was 1996 to 1997.

The following table summarizes the netting emissions. It includes all actual emissions from the six multi-hearth incinerators at the MSD facility that are being used in the baseline emissions calculation and the three proposed fluidized bed incinerators in the potential emissions (that includes an annual sludge throughput limitation) that demonstrates a significant emissions increase and a significant net emission increase of PE, PM10, SO2, NOx, VOC, CO and lead does not occur as a result of the Sludge Incinerator Project. Note that the net CO emissions is actually an emissions decrease.

**Mill C****PTI A**

Emissions Unit ID: N008

**Issued: To be entered upon final issuance****Table I. Summary of the change in emissions by pollutant and comparison of the emissions increases/decreases to major NSR thresholds**

Pollutant	Potential emissions / allowable limits, tpy	Baseline Actual Emissions for existing incinerators, tpy	Project net emissions, tpy	Major NSR significant emission rate, tpy
PM	16.50	8.75	7.75	25
PM10	16.50	9.46	7.04	15
SO2	49.50	13.23	36.3	40
NOx	103.13	64.03	39.1	40
CO	70.13	512.51	-442.4	100
VOC	37.13	14.05	23.1	40
Lead	0.66	0.075	0.585	0.6

**B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions**

None

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

1. The specific operations(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 specified in narrative form following the table.

**Operations, Property, and/or Equipment - (N008) - 4 dry ton per hour fluidized bed incinerator No. 1**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	Particulate Emissions (PE) shall not exceed 1.6 lbs/hour, 0.40 lb/ton of dry sewage sludge and 38.4 lbs/day.  Particulate Matter emissions 10 microns and less in diameter (PM10) shall not exceed 38.4 lbs/day.  Sulfur Dioxide (SO <sub>2</sub> ) emissions shall not exceed 4.8 lbs/hour and 115.2 lbs/day.  Organic Compound (OC) emissions shall not exceed 86.4 lbs/day.  Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 240.0 lbs/day.  Carbon Monoxide (CO) emissions shall not exceed 163.2 lbs/day.  See terms and conditions A.1.2.b, A.1.2.h, II.3, and II.4.  The requirements of this rule also include compliance with the requirements of 40 CFR Part 60 Subpart O, 40 CFR Part 61 Subparts C & E, OAC rule 3745-21-08(B), OAC rule 3745-23-06(B) and OAC rule 3745-31-05(C), except for the lead emissions.
40 Code of Federal Regulations (CFR) Part 60, Subpart O, New Source Performance Standards (NSPS)	Visible particulate emissions shall not exceed 20 percent opacity.  The particulate matter emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
40 CFR Part 61 Subpart C, National Emission Standards for Hazardous Air Pollutants (NESHAP)	Beryllium (BE) emission from the sewage sludge incinerator plant shall not exceed 0.022 lb of beryllium over a 24-hour period.

**Mill C****PTI A**

Emissions Unit ID: N008

**Issued: To be entered upon final issuance**

40 CFR Part 61 Subpart E, National Emission Standards for Hazardous Air Pollutants (NESHAP)	Mercury (HG) emissions from the sewage sludge incinerator plant shall not exceed 7.1 lbs of mercury per 24-hour period.
OAC rule 3745-31-05(C) Synthetic Minor to Avoid Nonattainment New Source Review and Prevention of Significant Deterioration	See terms and conditions A.I.2.a and II.2.
OAC rule 3745-17-07	The emission limitations specified by this rule is less stringent than the emission limitations established pursuant to 40 CFR Part 60 Subpart O.
OAC rule 3745-17-09	The emission limitations specified by this rule is less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-21-08(B)	See term and condition A.I.2.c.
OAC rule 3745-23-06(B)	See term and condition A.I.2.d.
OAC rule 3745-18-06(E)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
ORC 3704.03(T)(4)	See term and condition A.I.2.i.

**2. Additional Terms and Conditions**

**2.a** The total, combined mass emissions from emissions units N008, N009 and N010, as a 12-month rolling average, shall not exceed the following:

PE	16.5 tons/year;
PM10	16.5 tons/year;
SO2	49.5 tons/year;
OC	37.2 tons/year;
NOx	103.2 tons/year;
CO	70.13 tons/year; and
Lead	0.66 ton/year.

**2.b** The total, combined mass emissions from emissions units N008, N009 and N010 shall not exceed the following:

arsenic:	0.55 pound/day, 0.10 ton/year;
cadmium:	1.36 pounds/day, 0.25 ton/year;

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chromium: 15.54 pounds/day, 2.84 tons/year;  
nickel: 47.82 pounds/day, 8.73 tons/year;  
beryllium: 0.004 ton/year; and  
mercury: 1.29 tons/year.

- 2.c** 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 the State regulations. However, that rule revision has not yet been submitted to U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revisions occurs and the U.S. EPA approves the revisions 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.

- 2.d** 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; therefore, this rule is no longer part of the State regulations. This rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Until the U.S. EPA approves the revision to OAC rule 3745-23-06, the requirement to satisfy the "latest available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

- 2.e** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of venturi and impingement tray scrubbers and compliance with throughput limitations, visible emission limitations and all mass emission limitations.

- 2.f** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

- 2.g** The application and enforcement of the provisions of the National Emissions Standards for Hazardous Air Pollutants (NESHAP), as promulgated by the

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United States Environmental Protection Agency, 40 CFR Part 61, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 61 are also federally enforceable.

- 2.h** The monthly average concentration of carbon monoxide in the exit gas from this emissions unit, corrected for zero percent moisture and to seven percent oxygen, does not exceed 100 parts per million on a volumetric basis.
- 2.i** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the lead emissions from this air contaminant source since the calculated annual emission rate for lead emissions is less than 10 tons per year taking into account both the following federally enforceable limitation and voluntary restriction (including the used of any applicable air pollution control equipment) as proposed by the permittee:
- i. 40 CFR Part 503; and
  - ii. venturi and impingement tray scrubbers.

## **II. Operational Restrictions**

1. The incinerator, including all associated equipment and grounds, shall be designed, operated and maintained so as to prevent the emission of objectionable odors.
2. The total combined dry sludge feed to emissions units N008, N009 and N010 shall not exceed 82,500 tons per year, based upon a rolling, 365 day summation of the daily dry sludge feed.

To ensure enforceability during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall not exceed the cumulative dry sludge feed levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Dry Sludge Feed (Tons)</u>
1	8928
1-2	17856
1-3	26784
1-4	35712
1-5	44640
1-6	53568
1-7	62496
1-8	71424
1-9	80352
1-10	82500
1-11	82500

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82500

After the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, compliance with the annual total combined dry sludge feed limitation for emissions units N008, N009 and N010 shall be based upon a rolling, daily summation of the total combined dry sludge feed for emissions units N008, N009 and N010.

3. The permittee shall operate this emissions unit in such a manner such that the operating combustion temperature for the sewage sludge incinerator shall not exceed the performance test combustion temperature by more than 20 percent.
4. Sewage sludge shall not be fired in this emissions unit if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.
5. Municipal solid waste shall not be fired in this emissions unit.

**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall properly install, calibrate, maintain and operate a monitoring device that continuously measures and records the pressure drop of the gas flow through the wet scrubbing device while this emissions unit is in operation. 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.  
The permittee shall collect and record the following information and maintain in its files for a period of not less than five (5) years:
  - a. a continuous record of the pressure drop of the gas flow through the scrubber and the 15 minute average of the pressure drop;
  - b. records of the downtimes for the monitoring equipment when this emissions unit is in operation;
  - c. records of monitoring equipment calibration checks; and
  - d. records of a pressure drop reduction of more than 30 percent from the average pressure drop recorded during the most recent stack test which demonstrated the emissions unit to be in compliance shall be maintained.
2. The permittee shall properly install, calibrate, maintain and operate a monitoring device that continuously measures and records the oxygen content of the incinerator exhaust gas while this emissions unit is in operation. The oxygen monitor located upstream of

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any rabble shaft cooling air inlet into the incinerator exhaust gas stream, fan, ambient air 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 period.

The permittee shall collect and record the following information and maintain in its files for a period of not less than five (5) years:

- a. a continuous record of the oxygen content of the exhaust gas.
  - b. records of the downtimes for the monitoring equipment when this emissions unit is in operation;
  - c. records of monitoring equipment calibration checks; and
  - d. records of the average oxygen content in the incinerator exhaust gas for each period of one-hour duration or more that the oxygen content of the incinerator exhaust gas exceeds the average oxygen content measured during the most recent performance test which demonstrated the emissions unit to be in compliance by more than 3 percent.
3. Prior to the installation of the continuous carbon monoxide (CO) monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 4 or 4a, as appropriate. The Ohio EPA, Central Office shall approve the proposed sampling site and certify that the continuous CO monitoring system meets the requirements of Performance Specification 4 or 4a. Once received, the letter/document of certification shall be maintained on-site and shall be made available to the director (the appropriate Ohio EPA District Office or local air agency) upon request.

Each continuous monitoring system consists of all the equipment used to acquire and record data in units of all applicable standard(s), and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data processing hardware and software.

4. The permittee shall install, calibrate, maintain and operate equipment to continuously monitor and record CO emissions in the exit gas from this emissions unit in units of the applicable standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of data obtained by the continuous CO monitoring system for a period of five years including, but not limited to:

- a. emissions of CO in parts per million on an instantaneous (one-minute) basis;
- b. emissions of CO in all units of the applicable standard(s) in the appropriate averaging period;
- c. results of quarterly cylinder gas audits;
- d. results of daily zero/span calibration checks and the magnitude of manual

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- e. calibration adjustments;
  - e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);
  - f. hours of operation of the emissions unit, continuous CO monitoring system, and control equipment;
  - g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous CO monitoring system;
  - h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous CO monitoring system; as well as,
  - i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).
5. The permittee shall properly install, calibrate, maintain and operate equipment to continuously monitor the scrubber water flow rate while this emissions unit is in operation. The monitoring device and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

- a. the scrubber water flow rate, in gallons per minute, on a once per shift basis;
  - b. the downtimes for the capture (collection) system, control device, and monitoring equipment when this emissions unit is in operation; and
  - c. a record of the scrubber water flow rate which is not maintained at or above the minimum scrubber water flow rate established during the most recent stack test which demonstrated the emissions unit to be in compliance.
6. The permittee shall install, calibrate, maintain, and operate the a flow measuring device which can be used to determine the mass 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 permittee shall collect and record the following information and maintain in its files for a period of not less than five (5) years:

- a. the daily total tons of dry sludge fed to emissions units N008, N009 and N010; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 365-day summation of the sludge charge rates.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative sludge charge rate for each calendar month.

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7. The permittee shall install, calibrate, maintain and operate an instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas for this sewage sludge incinerator.
8. The permittee shall install, calibrate, maintain and operate 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. The permittee shall record operation of a sewage sludge incinerator when the operating combustion temperature for the fluidized bed incinerator exceeds the performance test combustion temperature by more than 20 percent.
9. The frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel in sewage sludge fed to a sewage sludge incinerator shall be once per month (12 times per year.)  
After the sewage sludge has been monitored for two years the Ohio EPA may reduce the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel.
10. The permittee shall develop the following information and retain that information for a period of five years:
  - a. the concentration of lead, arsenic, cadmium, chromium and nickel in the sewage sludge fed to the sewage sludge incinerator;
  - b. information that indicates the requirements in the National Emission Standard for beryllium in Subpart C of 40 CFR Part 61 are met;
  - c. information that indicates the requirements in the National Emission Standard for mercury in Subpart E of 40 CFR Part 61 are met;
  - d. the operating combustion temperatures for the sewage sludge incinerator;
  - e. values for the air pollution control device operating parameters;
  - f. the oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack;
  - g. the sewage sludge feed rate;
  - h. the stack height for the sewage sludge incinerator;
  - i. the dispersion factor for the site where the sewage sludge incinerator is located;
  - j. the control efficiency for arsenic, cadmium, chromium, lead, and nickel for each sewage sludge incinerator; and
  - k. the risk specific concentration for chromium calculated using the equation for 40 CFR Part 503.43(d), if applicable.
11. All the sources for which mercury emissions exceed 3.5 lbs per 24-hour period shall monitor mercury emissions at intervals of at least once per year by use of Method 105

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of Appendix B or the procedures specified in 40 CFR Part 61.53(d). The results of monitoring shall be reported and retained according to 40 CFR Part 61.53(d)(5) and (6) or 40 CFR Part 61.54(f) and (g).

12. The permittee shall provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.

#### **IV. Reporting Requirements**

1. This facility shall submit semi-annual deviation 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 scrubber system is less than 30 percent from the average scrubber pressure drop measured during the most recent performance test; and
  - b. 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.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).
2. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 365 day total combined dry sludge feed limitation for emissions units N008, N009 and N010 and exceedances of the total combined dry sludge feed limitation for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit.
3. The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous CO monitoring system:
  - a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the Hamilton County Department of Environmental Services, documenting all instances of CO emissions in excess of any applicable limit specified in this permit, 40 CFR Part 60, OAC Chapter 3745-21, and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as, the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s). If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect.
  - b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:

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- i. the facility name and address;
- ii. the manufacturer and model number of the continuous CO and other associated monitors;
- iii. the location of the continuous CO monitor;
- iv. the exceedance report as detailed in (a) above;
- v. the total CO emissions for the calendar quarter (tons);
- vi. the total operating time (hours) of the emissions unit;
- vii. the total operating time of the continuous CO monitoring system while the emissions unit was in operation;
- viii. the monthly average carbon monoxide concentration in the exit gas;
- ix. results and dates of quarterly cylinder gas audits;
- x. results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));
- xi. the results of any relative accuracy test audit showing the continuous CO monitor out-of-control and the compliant results following any corrective actions;
- xii. the date, time, and duration of any/each malfunction\* of the continuous CO monitoring system, emissions unit, and/or control equipment;
- xiii. the date, time, and duration of any downtime\* of the continuous CO monitoring system and/or control equipment while the emissions unit was in operation; and
- xiv. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xii) and (xiii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

\* each downtime and malfunction event shall be reported regardless if there is an exceedance of any applicable limit

4. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels.
  - a. the scrubber water flow rate.

Should any deviations occur, the corrective action taken to remedy the deviation, along with the date the corrective action taken shall be submitted.

5. The permittee shall submit quarterly deviation (excursion) reports that identify all

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exceedances of the rolling, 12-month emissions limitations for PE, PM10, SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO and Lead for emissions unit N008, N009 and N010, combined, as specified in Section A.I.2.a.

6. The permittee shall submit an annual report to the Hamilton County Department of Environmental Services that provides the information required in term and condition III.10 on February 19 of each year.
7. Deviation (excursion) reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.
8. Pursuant to the NSPS and NESHAP, the source owner-operator is hereby advised of the requirement to report the following at the appropriate times:
  - a. construction date (no later than 30 days after such date);
  - b. actual start-up date (within 15 days after such date); and
  - c. date of performance testing (if required, at least 30 days prior to testing).

Reports are to be sent to:

Hamilton County Department of Environmental Services  
 250 William Howard Taft Road  
 Cincinnati, OH 45219.

9. If the average particulate matter emission rate exceeds 0.75 lb PE per ton of dry sludge input, the permittee shall submit the reports required as specified in 40 CFR Part 63.155(a) (1)(ii) and (b).

## **V. Testing Requirements**

1. Compliance with the emission limitations in Sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

Emission Limitations:

Particulate Emissions (PE) shall not exceed 1.6 lbs/hour, 0.40 lb/ton of dry sewage sludge, and 38.4 lbs/day from this emissions unit. PE from emissions units N008, N009 and N010 shall not exceed 16.5 TPY.

Applicable Compliance Methods:

Compliance with the emission limitation of 1.6 lbs/hour of PE specified in term A.1 shall be demonstrated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PE/ton of dry sludge input by the maximum sludge feed rate of 4 tons per hour. If required, compliance with the hourly PE limitation and the PE limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 5 in 40 CFR 60, Appendix A.

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The emission limitation of 38.4 lbs/day of PE specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PE/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day.

The emission limitation of 16.5 TPY of PE was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PE/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Particulate Matter emissions 10 microns and less in diameter (PM10) shall not exceed 38.4 lbs/day from this emissions unit. PM10 emissions from emissions units N008, N009 and N010 shall not exceed 16.5 TPY.

**Applicable Compliance Methods:**

The emission limitation of 38.4 lbs/day of PM10 specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PM10/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day.

The emission limitation of 16.5 TPY of PM10 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PM10/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 4.8 lbs/hour and 115.2 lbs/day from this emissions unit. SO<sub>2</sub> emissions from emissions units N008, N009 and N010 shall not exceed 49.5 TPY.

**Applicable Compliance Methods:**

Compliance with the emission limitation of 4.8 lbs/hour of SO<sub>2</sub> specified in term A.1 shall be demonstrated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.20 lbs of SO<sub>2</sub>/ton of dry sludge input by the maximum sludge feed rate of 4 tons per hour. If required, compliance with the hourly SO<sub>2</sub> emission limitation and the SO<sub>2</sub> limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 6 in 40 CFR 60, Appendix A.

The emission limitation of 115.2 lbs/day of SO<sub>2</sub> specified in term A.1 was calculated by multiplying the emission factor from the PTI application 14-05837 submitted April 24, 2006 of 1.20 lbs SO<sub>2</sub>/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day.

The emission limitation of 49.5 TPY of SO<sub>2</sub> was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.20 lbs of SO<sub>2</sub>/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

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**Issue**

**Facility ID: 1431070944**

Emissions Unit ID: N008

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## Emission Limitations:

Carbon Monoxide (CO) emissions shall not exceed 163.2 lbs/day from this emissions unit.

CO emissions from emissions units N008, N009 and N010 shall not exceed 70.13 TPY.

## Applicable Compliance Methods:

The emission limitation of 163.2 lbs/day of CO specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.70 lbs of CO/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day. If required, compliance with the CO emission limitation and the CO limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 10 in 40 CFR 60, Appendix A.

The emission limitation of 70.13 TPY of CO was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.70 lbs of CO/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

## Emission Limitations:

Nitrogen Oxides (NOx) emissions shall not exceed 240.0 lbs/day from this emissions unit.

NOx emissions from emissions units N008, N009 and N010 shall not exceed 103.2 TPY.

## Applicable Compliance Methods:

The emission limitation of 240.0 lbs/day of NOx specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 2.50 lbs of NOx/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day. If required, compliance with the NOx emission limitation and the NOx limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 7 in 40 CFR 60, Appendix A.

The emission limitation of 103.2 TPY of NOx was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 2.50 lbs of NOx/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

## Emission Limitations:

Organic Compound (OC) emissions shall not exceed 86.4 lbs/day from this emissions unit. OC emissions from emissions units N008, N009 and N010 shall not exceed 37.2 TPY.

## Applicable Compliance Methods:

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The emission limitation of 86.4 lbs/day of OC specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.90 lb of OC/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day. If required, compliance with the OC emissions limitation and the OC limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 25a in 40 CFR 60, Appendix A.

The emission limitation of 37.2 TPY of OC was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.90 lb of OC/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Arsenic emissions from emissions units N008, N009 and N010 shall not exceed 0.55 lb/day and 0.10 TPY.

**Applicable Compliance Methods:**

The emission limitation of 0.55 lb/day of arsenic specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 0.10 TPY of arsenic was calculated by multiplying the daily emission rate of 0.55 lbs/day of arsenic by 365 days per year plant operation and dividing by 2000 lbs/ton.

**Emission Limitations:**

Cadmium emissions from emissions units N008, N009 and N010 shall not exceed 1.36 lbs/day and 0.25 TPY.

**Applicable Compliance Methods:**

The emission limitation of 1.36 lbs/day of cadmium specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 0.25 TPY of cadmium was calculated by multiplying the daily emission rate of 1.36 lbs/day cadmium by 365 days per year plant operation and dividing by 2000 lbs/ton.

**Emission Limitations:**

Chromium emissions from emissions units N008, N009 and N010 shall not exceed 15.54 lbs/day and 2.84 TPY.

**Applicable Compliance Methods:**

The emission limitation of 15.54 lbs/day of chromium specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 2.84 TPY of chromium was calculated by multiplying the daily emission rate of 15.54 lbs/day chromium by 365 days per year plant operation and dividing by 2000 lbs/ton.

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## Emission Limitation:

Lead emissions from emissions units N008, N009 and N010 shall not exceed 0.66 TPY.

## Applicable Compliance Method:

The emissions limitation of 0.66 TPY lead was calculated by multiplying the daily emission rate of 3.59 lbs/day of lead, which was derived from the methodology in 40 CFR Part 503.43 Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006, by 365 days per year plant operation and dividing by 2000 lbs/ton.

## Emission Limitations:

Nickel emissions from emissions units N008, N009 and N010 shall not exceed 47.82 lbs/day and 8.73 TPY.

## Applicable Compliance Methods:

The emission limitation of 47.82 lbs/day of nickel specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 8.73 TPY of nickel was calculated by multiplying the daily emission rate of 47.82 lbs/day of nickel by 365 days per year plant operation and dividing by 2000 lbs/ton.

## Emission Limitations:

Mercury emissions from emissions units N008, N009 and N010 shall not exceed 7.1 lbs/day and 1.29 TPY.

## Applicable Compliance Methods:

The emission limitation of 7.1 lbs/day of mercury specified in term A.1 was based on 40 CFR 61.52(b), Subpart E. The emission limitation is applicable as facility-wide limitations. Compliance shall be demonstrated by the emissions testing or sludge sampling as described below.

The emission limitation of 1.29 TPY of mercury was calculated by multiplying the allowable daily emission rate of 7.1 lbs/day of mercury by 365 days per year and dividing by 2000 lbs/ton.

## Emission Limitations:

Beryllium emissions from emissions units N008, N009 and N010 shall not exceed 0.022 lb/day and 0.004 TPY.

## Applicable Compliance Methods:

The emission limitation of 0.022 lb/day beryllium specified in term A.1 was based on 40

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CFR 61.32(a), Subpart C. The emission limitation is applicable as facility-wide limitations. Compliance shall be demonstrated by the emissions testing as described below.

The emission limitation of 0.004 TPY of beryllium was calculated by multiplying the allowable daily emission rate of 0.022 lb/day of beryllium by 365 days per year and dividing by 2000 lbs/ton.

2. As specified in 40 CFR 60.8, each performance test shall consist of at least three separate runs at the same operating conditions.
3. All continuous monitoring systems and monitoring devices shall be operational, and calibrated prior to conducting performance tests.
4. The performance test shall be conducted under representative sewage sludge incinerator conditions at the highest expected sewage sludge feed rate within the design capacity of the sewage sludge incinerator.
5. The permittee shall conduct, or have conducted, emissions testing for emissions units N008, N009 and N010 for beryllium to comply with 40 CFR 61, Subpart C. The permittee shall conduct a performance test for beryllium using Method 103 or 104 in Appendix B and described in 40 CFR 61.33 to determine maximum emissions over a 24 hour period.

The test shall be performed within 90 days of startup of the emissions unit.

The Hamilton County Department of Environmental Services shall be notified at least 30 days prior to an emissions test.

Samples shall be taken over such a period or periods as are 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. All determinations shall be reported to the Hamilton County Department of Environmental Services by a registered letter dispatched before the close of the next business day following such determination.

Records of emissions test results and other data needed to determine total emissions shall be retained at the source and shall be made available for inspection for a minimum of five years.

6. The permittee shall conduct, or have conducted, emissions testing for emissions units N008, N009 and N010 for mercury to comply with 40 CFR 61, Subpart E by either performing an emissions test or by performing sludge sampling:
  - a. An emissions test using Method 101A in Appendix B; or  
 The test shall be performed within 90 days of startup of the emissions unit.  
 The Hamilton County Department of Environmental Services shall be notified at least 30 days prior to an emissions test.  
 Samples shall be taken over such a period or periods as are necessary to

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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. All determinations shall be reported to the Hamilton County Department of Environmental Services by a registered letter dispatched before the close of the next business day following such determination.

Records of emissions test results and other data needed to determine total emissions shall be retained at the source and shall be made available for inspection for a minimum of five years.

- b. A sludge sampling test using Method 105 of Appendix B and paragraph 61.53 of 40 CFR 61.

The sludge test shall be performed within 90 days of startup of the emissions unit.

The Hamilton County Department of Environmental Services shall be notified at least 30 days prior to the sludge test.

Sludge shall be sampled, the sludge charging rate shall be determined and the sludge analysis shall be performed according to 40CFR61.54(c).

Mercury emissions shall be determined according to 40CFR61.54(d).

All sludge samples shall be analyzed for mercury content within 30 days after the sludge sample is collected.

Records of sludge sampling, sludge charging rate and other data needed to determine mercury content of the wastewater treatment plant sludge shall be retained at the source and shall be made available for inspection of a minimum of five years.

7. Compliance with the visible particulate emissions limitation specified in 40 CFR 61.52(b) shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9.
8. Within 90 days of the start up of this emissions unit, the permittee shall conduct certification tests of the continuous CO monitoring system in units of the applicable standard(s), to demonstrate compliance with 40 CFR Part 60, Appendix B, Performance Specification 4 or 4a (as appropriate); and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and the Hamilton County Department of Environmental Services shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Hamilton

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County Department of Environmental Services and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the continuous CO monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 4 or 4a (as appropriate) and ORC section 3704.03(I).

Ongoing compliance with the CO emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record Keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the requirements of 40 CFR Part 60.

9. Within 90 days of the start-up of this emissions unit, the permittee shall conduct or have conducted an emissions test to demonstrate compliance with the PE, SO<sub>2</sub>, OC and NO<sub>x</sub> emissions limitations.  
Personnel from the Ohio EPA Central Office and the Hamilton County Department of Environmental Services shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Hamilton County Department of Environmental Services and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.
10. Compliance with the CO emissions limitation specified in term and condition A.I.2.h shall be determined through monitoring and record keeping specified in term and condition III.4.
11. Compliance with the requirement to maintain the combustion temperature as specified in term and condition A.II.3 shall be determined through monitoring and record keeping specified in term and condition III.8.

**VI. Miscellaneous Requirements**

1. The following is a summary of the netting emissions in tons per year (TPY).

Pollutant	Potential emissions / allowable limits, tpy	Baseline emissions for existing incinerators, tpy	Project net emissions, tpy	Major NSR significant emission rate, tpy
PM	16.5	8.75	7.75	25
PM10	16.5	9.46	7.04	15
SO <sub>2</sub>	49.5	13.23	36.3	40
NO <sub>x</sub>	103.13	64.03	39.1	40
CO	70.13	512.51	-442.4	100
VOC	37.13	14.05	23.1	40

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Lead	0.66	0.075	0.585	0.6
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2. Within 180 days of the effective date of this permit, the permittee shall develop and maintain a written quality assurance/quality control plan for the continuous CO monitoring system, designed to ensure continuous valid and representative readings of CO emissions in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous CO monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60; and to conduct relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.

**B. State Only Enforceable Section**

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

- 1. The specific operations(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 specified in narrative form following the table.

**Operations, Property, and/or Equipment - (N008) - 4 dry ton per hour fluidized bed incinerator No. 1**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
NA	NA

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Issued: To be entered upon final issuance****Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(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 specified in narrative form following the table.

**Operations, Property, and/or Equipment - (N009) - 4 dry ton per hour fluidized bed incinerator No. 2**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Particulate Emissions (PE) shall not exceed 1.6 lbs/hour, 0.40 lb/ton of dry sewage sludge and 38.4 lbs/day.</p> <p>Particulate Matter emissions 10 microns and less in diameter (PM10) shall not exceed 38.4 lbs/day.</p> <p>Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 4.8 lbs/hour and 115.2 lbs/day.</p> <p>Organic Compound (OC) emissions shall not exceed 86.4 lbs/day.</p> <p>Nitrogen Oxides (NO<sub>x</sub>) emissions shall not exceed 240.0 lbs/day.</p> <p>Carbon Monoxide (CO) emissions shall not exceed 163.2 lbs/day.</p> <p>See terms and conditions A.I.2.b, A.I.2.h, II.3, and II.4.</p> <p>The requirements of this rule also include compliance with the requirements of 40 CFR Part 60 Subpart O, 40 CFR Part 61 Subparts C &amp; E, OAC rule 3745-21-08(B) and OAC rule 3745-23-06(B) and OAC rule 3745-31-05(C), except for the lead emissions.</p>
40 Code of Federal Regulations (CFR) Part 60, Subpart O, New Source Performance Standards (NSPS)	<p>Visible particulate emissions shall not exceed 20 percent opacity.</p> <p>The particulate matter emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
40 CFR Part 61 Subpart C, National Emission Standards for Hazardous Air Pollutants (NESHAP)	<p>Beryllium (BE) emission from the sewage sludge incinerator plant shall not exceed 0.022 lb of beryllium over a 24-hour period.</p>

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40 CFR Part 61 Subpart E, National Emission Standards for Hazardous Air Pollutants (NESHAP)	Mercury (HG) emissions from the sewage sludge incinerator plant shall not exceed 7.1 lbs of mercury per 24-hour period.
OAC rule 3745-31-05(C) Synthetic Minor to Avoid Nonattainment New Source Review and Prevention of Significant Deterioration	See terms and conditions A.I.2.a and II.2.
OAC rule 3745-17-07	The emission limitations specified by this rule is less stringent than the emission limitations established pursuant to 40 CFR Part 60 Subpart O.
OAC rule 3745-17-09	The emission limitations specified by this rule is less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-21-08(B)	See term and condition A.I.2.c.
OAC rule 3745-23-06(B)	See term and condition A.I.2.d.
OAC rule 3745-18-06(E)(2)	The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).
ORC 3704.03(T)(4)	See term and condition A.I.2.i.

**2. Additional Terms and Conditions**

- 2.a** The total, combined mass emissions from emissions units N008, N009 and N010, as a 12-month rolling average, shall not exceed the following:

PE	16.5 tons/year;
PM10	16.5 tons/year;
SO2	49.5 tons/year;
OC	37.2 tons/year;
NOx	103.2 tons/year;
CO	70.13 tons/year; and
Lead	0.66 ton/year.

- 2.b** The total, combined mass emissions from emissions units N008, N009 and N010 shall not exceed the following:

arsenic:	0.55 pound/day, 0.10 ton/year;
cadmium:	1.36 pounds/day, 0.25 ton/year;

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chromium: 15.54 pounds/day, 2.84 tons/year;  
 nickel: 47.82 pounds/day, 8.73 tons/year;  
 beryllium: 0.004 ton/year; and  
 mercury: 1.29 tons/year.

- 2.c** 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 the State regulations. However, that rule revision has not yet been submitted to U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revisions occurs and the U.S. EPA approves the revisions 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.

- 2.d** 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; therefore, this rule is no longer part of the State regulations. This rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Until the U.S. EPA approves the revision to OAC rule 3745-23-06, the requirement to satisfy the "latest available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

- 2.e** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of venturi and impingement tray scrubbers and compliance with throughput limitations, visible emission limitations and all mass emission limitations.

- 2.f** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

- 2.g** The application and enforcement of the provisions of the National Emissions Standards for Hazardous Air Pollutants (NESHAP), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 61, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 61 are also federally enforceable.

- 2.h** The monthly average concentration of carbon monoxide in the exit gas from this

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emissions unit, corrected for zero percent moisture and to seven percent oxygen, does not exceed 100 parts per million on a volumetric basis.

- 2.i** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the lead emissions from this air contaminant source since the calculated annual emission rate for lead emissions is less than 10 tons per year taking into account both the following federally enforceable limitation and voluntary restriction (including the used of any applicable air pollution control equipment) as proposed by the permittee:
- i. 40 CFR Part 503; and
  - ii. venturi and impingement tray scrubbers.

**II. Operational Restrictions**

1. The incinerator, including all associated equipment and grounds, shall be designed, operated and maintained so as to prevent the emission of objectionable odors.
2. The total combined dry sludge feed to emissions units N008, N009 and N010 shall not exceed 82,500 tons per year, based upon a rolling, 365 day summation of the daily dry sludge feed.

To ensure enforceability during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall not exceed the cumulative dry sludge feed levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Dry Sludge Feed (Tons)</u>
1	8928
1-2	17856
1-3	26784
1-4	35712
1-5	44640
1-6	53568
1-7	62496
1-8	71424
1-9	80352
1-10	82500

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1-11	82500
1-12	82500

After the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, compliance with the annual total combined dry sludge feed limitation for emissions units N008, N009 and N010 shall be based upon a rolling, daily summation of the total combined dry sludge feed for emissions units N008, N009 and N010.

3. The permittee shall operate this emissions unit in such a manner such that the operating combustion temperature for the sewage sludge incinerator shall not exceed the performance test combustion temperature by more than 20 percent.
4. Sewage sludge shall not be fired in this emissions unit if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.
5. Municipal solid waste shall not be fired in this emissions unit.

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**Issued: To be entered upon final issuance****III. Monitoring and/or Record keeping Requirements**

1. The permittee shall properly install, calibrate, maintain and operate a monitoring device that continuously measures and records the pressure drop of the gas flow through the wet scrubbing device while this emissions unit is in operation. 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.

The permittee shall collect and record the following information and maintain in its files for a period of not less than five (5) years:

- a. a continuous record of the pressure drop of the gas flow through the scrubber and the 15 minute average of the pressure drop;
- b. records of the downtimes for the monitoring equipment when this emissions unit is in operation;
- c. records of monitoring equipment calibration checks; and
- d. records of a pressure drop reduction of more than 30 percent from the average pressure drop recorded during the most recent stack test which demonstrated the emissions unit to be in compliance shall be maintained.

2. The permittee shall properly install, calibrate, maintain and operate a monitoring device that continuously measures and records the oxygen content of the incinerator exhaust gas while this emissions unit is in operation. The oxygen monitor located upstream of any rabble shaft cooling air inlet into the incinerator exhaust gas stream, fan, ambient air 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 period.

The permittee shall collect and record the following information and maintain in its files for a period of not less than five (5) years:

- a. a continuous record of the oxygen content of the exhaust gas.
- b. records of the downtimes for the monitoring equipment when this emissions unit is in operation;
- c. records of monitoring equipment calibration checks; and
- d. records of the average oxygen content in the incinerator exhaust gas for each period of one-hour duration or more that the oxygen content of the incinerator exhaust gas exceeds the average oxygen content measured during the most recent performance test which demonstrated the emissions unit to be in compliance by more than 3 percent.

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3. Prior to the installation of the continuous carbon monoxide (CO) monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 4 or 4a, as appropriate. The Ohio EPA, Central Office shall approve the proposed sampling site and certify that the continuous CO monitoring system meets the requirements of Performance Specification 4 or 4a. Once received, the letter/document of certification shall be maintained on-site and shall be made available to the director (the appropriate Ohio EPA District Office or local air agency) upon request.

Each continuous monitoring system consists of all the equipment used to acquire and record data in units of all applicable standard(s), and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data processing hardware and software.

4. The permittee shall install, calibrate, maintain and operate equipment to continuously monitor and record CO emissions in the exit gas from this emissions unit in units of the applicable standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of data obtained by the continuous CO monitoring system for a period of five years including, but not limited to:

- a. emissions of CO in parts per million on an instantaneous (one-minute) basis;
- b. emissions of CO in all units of the applicable standard(s) in the appropriate averaging period;
- c. results of quarterly cylinder gas audits;
- d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;
- e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);
- f. hours of operation of the emissions unit, continuous CO monitoring system, and control equipment;
- g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous CO monitoring system;
- h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous CO monitoring system; as well as,
- i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).

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5. The permittee shall properly install, calibrate, maintain and operate equipment to continuously monitor the scrubber water flow rate while this emissions unit is in operation. The monitoring device and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

- a. the scrubber water flow rate, in gallons per minute, on a once per shift basis;
  - b. the downtimes for the capture (collection) system, control device, and monitoring equipment when this emissions unit is in operation; and
  - c. a record of the scrubber water flow rate which is not maintained at or above the minimum scrubber water flow rate established during the most recent stack test which demonstrated the emissions unit to be in compliance.
6. The permittee shall install, calibrate, maintain, and operate the a flow measuring device which can be used to determine the mass 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 permittee shall collect and record the following information and maintain in its files for a period of not less than five (5) years:

- a. the daily total tons of dry sludge fed to emissions units N008, N009 and N010; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 365-day summation of the sludge charge rates.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative sludge charge rate for each calendar month.

7. The permittee shall install, calibrate, maintain and operate an instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas for this sewage sludge incinerator.
8. The permittee shall install, calibrate, maintain and operate 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. The permittee shall record operation of a sewage sludge incinerator when the operating combustion temperature for the fluidized bed incinerator exceeds the performance test combustion temperature by more than 20 percent.

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9. The frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel in sewage sludge fed to a sewage sludge incinerator shall be once per month (12 times per year.)  
After the sewage sludge has been monitored for two years the Ohio EPA may reduce the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel.
10. The permittee shall develop the following information and retain that information for a period of five years:
  - a. the concentration of lead, arsenic, cadmium, chromium and nickel in the sewage sludge fed to the sewage sludge incinerator;
  - b. information that indicates the requirements in the National Emission Standard for beryllium in Subpart C of 40 CFR Part 61 are met;
  - c. information that indicates the requirements in the National Emission Standard for mercury in Subpart E of 40 CFR Part 61 are met;
  - d. the operating combustion temperatures for the sewage sludge incinerator;
  - e. values for the air pollution control device operating parameters;
  - f. the oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack;
  - g. the sewage sludge feed rate;
  - h. the stack height for the sewage sludge incinerator;
  - i. the dispersion factor for the site where the sewage sludge incinerator is located;
  - j. the control efficiency for arsenic, cadmium, chromium, lead, and nickel for each sewage sludge incinerator; and
  - k. the risk specific concentration for chromium calculated using the equation for 40 CFR Part 503.43(d), if applicable.
11. All the sources for which mercury emissions exceed 3.5 lbs per 24-hour period shall monitor mercury emissions at intervals of at least once per year by use of Method 105 of Appendix B or the procedures specified in 40 CFR Part 61.53(d). The results of monitoring shall be reported and retained according to 40 CFR Part 61.53(d)(5) and (6) or 40 CFR Part 61.54(f) and (g).
12. The permittee shall provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.

**IV. Reporting Requirements**

1. This facility shall submit semi-annual deviation 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 scrubber system is less than 30 percent from the average scrubber pressure drop measured during the most recent performance test; and
  - b. the oxygen content of incinerator exhaust gas exceeds the average oxygen content measured during the most recent performance test by more than three

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(3) percent for any 1-hour period.

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).

2. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 365 day total combined dry sludge feed limitation for emissions units N008, N009 and N010 and exceedances of the total combined dry sludge feed limitation for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit.
3. The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous CO monitoring system:
  - a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the Hamilton County Department of Environmental Services, documenting all instances of CO emissions in excess of any applicable limit specified in this permit, 40 CFR Part 60, OAC Chapter 3745-21, and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as, the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s). If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect.
  - b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:
    - i. the facility name and address;
    - ii. the manufacturer and model number of the continuous CO and other associated monitors;
    - iii. the location of the continuous CO monitor;
    - iv. the exceedance report as detailed in (a) above;
    - v. the total CO emissions for the calendar quarter (tons);
    - vi. the total operating time (hours) of the emissions unit;
    - vii. the total operating time of the continuous CO monitoring system while the emissions unit was in operation;
    - viii. the monthly average carbon monoxide concentration in the exit gas;
    - ix. results and dates of quarterly cylinder gas audits;

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- x. results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));
- xi. the results of any relative accuracy test audit showing the continuous CO monitor out-of-control and the compliant results following any corrective actions;
- xii. the date, time, and duration of any/each malfunction\* of the continuous CO monitoring system, emissions unit, and/or control equipment;
- xiii. the date, time, and duration of any downtime\* of the continuous CO monitoring system and/or control equipment while the emissions unit was in operation; and
- xiv. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xii) and (xiii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

\* each downtime and malfunction event shall be reported regardless if there is an exceedance of any applicable limit

- 4. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels.

- a. the scrubber water flow rate.

Should any deviations occur, the corrective action taken to remedy the deviation, along with the date the corrective action taken shall be submitted.

- 5. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month emissions limitations for PE, PM10, SO2, NOx, VOC, CO and Lead for emissions unit N008, N009 and N010, combined, as specified in Section A.I.2.a.
- 6. The permittee shall submit an annual report to the Hamilton County Department of Environmental Services that provides the information required in term and condition III.10 on February 19 of each year.
- 7. Deviation (excursion) reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.
- 8. Pursuant to the NSPS and NESHAP, the source owner-operator is hereby advised of the requirement to report the following at the appropriate times:
  - a. construction date (no later than 30 days after such date),
  - b. actual start-up date (within 15 days after such date), and

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- c. date of performance testing (if required, at least 30 days prior to testing).

Reports are to be sent to:

Hamilton County Department of Environmental Services  
250 William Howard Taft Road  
Cincinnati, OH 45219.

9. If the average particulate matter emission rate exceeds 0.75 lb PE per ton of dry sludge input, the permittee shall submit the reports required as specified in 40 CFR Part 63.155(a) (1)(ii) and (b).

**V. Testing Requirements**

1. Compliance with the emission limitations in Sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

**Emission Limitations:**

Particulate Emissions (PE) shall not exceed 1.6 lbs/hour, 0.40 lb/ton of dry sewage sludge, and 38.4 lbs/day from this emissions unit. PE from emissions units N008, N009 and N010 shall not exceed 16.5 TPY.

**Applicable Compliance Methods:**

Compliance with the emission limitation of 1.6 lbs/hour of PE specified in term A.1 shall be demonstrated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PE/ton of dry sludge input by the maximum sludge feed rate of 4 tons per hour. If required, compliance with the hourly PE limitation and the PE limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 5 in 40 CFR 60, Appendix A.

The emission limitation of 38.4 lbs/day of PE specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PE/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day.

The emission limitation of 16.5 TPY of PE was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PE/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Particulate Matter emissions 10 microns and less in diameter (PM10) shall not exceed 38.4 lbs/day from this emissions unit. PM10 emissions from emissions units N008,

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N009 and N010 shall not exceed 16.5 TPY.

**Applicable Compliance Methods:**

The emission limitation of 38.4 lbs/day of PM10 specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PM10/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day.

The emission limitation of 16.5 TPY of PM10 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PM10/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 4.8 lbs/hour and 115.2 lbs/day from this emissions unit. SO<sub>2</sub> emissions from emissions units N008, N009 and N010 shall not exceed 49.5 TPY.

**Applicable Compliance Methods:**

Compliance with the emission limitation of 4.8 lbs/hour of SO<sub>2</sub> specified in term A.1 shall be demonstrated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.20 lbs of SO<sub>2</sub>/ton of dry sludge input by the maximum sludge feed rate of 4 tons per hour. If required, compliance with the hourly SO<sub>2</sub> emission limitation and the SO<sub>2</sub> limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 6 in 40 CFR 60, Appendix A.

The emission limitation of 115.2 lbs/day of SO<sub>2</sub> specified in term A.1 was calculated by multiplying the emission factor from the PTI application 14-05837 submitted April 24, 2006 of 1.20 lbs SO<sub>2</sub>/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day.

The emission limitation of 49.5 TPY of SO<sub>2</sub> was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.20 lbs of SO<sub>2</sub>/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Carbon Monoxide (CO) emissions shall not exceed 163.2 lbs/day from this emissions unit.

CO emissions from emissions units N008, N009 and N010 shall not exceed 70.13 TPY.

**Applicable Compliance Methods:**

The emission limitation of 163.2 lbs/day of CO specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.70 lbs of CO/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day. If required, compliance with the CO emission limitation and the CO limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 10 in 40 CFR 60, Appendix A.

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The emission limitation of 70.13 TPY of CO was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.70 lbs of CO/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Nitrogen Oxides (NOx) emissions shall not exceed 240.0 lbs/day from this emissions unit.

NOx emissions from emissions units N008, N009 and N010 shall not exceed 103.2 TPY.

**Applicable Compliance Methods:**

The emission limitation of 240.0 lbs/day of NOx specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 2.50 lbs of NOx/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day. If required, compliance with the NOx emission limitation and the NOx limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 7 in 40 CFR 60, Appendix A.

The emission limitation of 103.2 TPY of NOx was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 2.50 lbs of NOx/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Organic Compound (OC) emissions shall not exceed 86.4 lbs/day from this emissions unit. OC emissions from emissions units N008, N009 and N010 shall not exceed 37.2 TPY.

**Applicable Compliance Methods:**

The emission limitation of 86.4 lbs/day of OC specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.90 lb of OC/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day. If required, compliance with the OC emissions limitation and the OC limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 25a in 40 CFR 60, Appendix A.

The emission limitation of 37.2 TPY of OC was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.90 lb of OC/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

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Arsenic emissions from emissions units N008, N009 and N010 shall not exceed 0.55 lb/day and 0.10 TPY.

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## Applicable Compliance Methods:

The emission limitation of 0.55 lb/day of arsenic specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 0.10 TPY of arsenic was calculated by multiplying the daily emission rate of 0.55 lbs/day of arsenic by 365 days per year plant operation and dividing by 2000 lbs/ton.

## Emission Limitations:

Cadmium emissions from emissions units N008, N009 and N010 shall not exceed 1.36 lbs/day and 0.25 TPY.

## Applicable Compliance Methods:

The emission limitation of 1.36 lbs/day of cadmium specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 0.25 TPY of cadmium was calculated by multiplying the daily emission rate of 1.36 lbs/day cadmium by 365 days per year plant operation and dividing by 2000 lbs/ton.

## Emission Limitations:

Chromium emissions from emissions units N008, N009 and N010 shall not exceed 15.54 lbs/day and 2.84 TPY.

## Applicable Compliance Methods:

The emission limitation of 15.54 lbs/day of chromium specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 2.84 TPY of chromium was calculated by multiplying the daily emission rate of 15.54 lbs/day chromium by 365 days per year plant operation and dividing by 2000 lbs/ton.

## Emission Limitation:

Lead emissions from emissions units N008, N009 and N010 shall not exceed 0.66 TPY.

## Applicable Compliance Method:

The emissions limitation of 0.66 TPY lead was calculated by multiplying the daily emission rate of 3.59 lbs/day of lead, which was derived from the methodology in 40 CFR Part 503.43 Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006, by 365 days per year plant operation and dividing by 2000 lbs/ton.

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Emission Limitations:

Nickel emissions from emissions units N008, N009 and N010 shall not exceed 47.82 lbs/day and 8.73 TPY.

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## Applicable Compliance Methods:

The emission limitation of 47.82 lbs/day of nickel specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 8.73 TPY of nickel was calculated by multiplying the daily emission rate of 47.82 lbs/day of nickel by 365 days per year plant operation and dividing by 2000 lbs/ton.

## Emission Limitations:

Mercury emissions from emissions units N008, N009 and N010 shall not exceed 7.1 lbs/day and 1.29 TPY.

## Applicable Compliance Methods:

The emission limitation of 7.1 lbs/day of mercury specified in term A.1 was based on 40 CFR 61.52(b), Subpart E. The emission limitation is applicable as facility-wide limitations. Compliance shall be demonstrated by the emissions testing or sludge sampling as described below.

The emission limitation of 1.29 TPY of mercury was calculated by multiplying the allowable daily emission rate of 7.1 lbs/day of mercury by 365 days per year and dividing by 2000 lbs/ton.

## Emission Limitations:

Beryllium emissions from emissions units N008, N009 and N010 shall not exceed 0.022 lb/day and 0.004 TPY.

## Applicable Compliance Methods:

The emission limitation of 0.022 lb/day beryllium specified in term A.1 was based on 40 CFR 61.32(a), Subpart C. The emission limitation is applicable as facility-wide limitations. Compliance shall be demonstrated by the emissions testing as described below.

The emission limitation of 0.004 TPY of beryllium was calculated by multiplying the allowable daily emission rate of 0.022 lb/day of beryllium by 365 days per year and dividing by 2000 lbs/ton.

2. As specified in 40 CFR 60.8, each performance test shall consist of at least three separate runs at the same operating conditions.
3. All continuous monitoring systems and monitoring devices shall be operational, and calibrated prior to conducting performance tests.
4. The performance test shall be conducted under representative sewage sludge

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incinerator conditions at the highest expected sewage sludge feed rate within the design capacity of the sewage sludge incinerator.

5. The permittee shall conduct, or have conducted, emissions testing for emissions units N008, N009 and N010 for beryllium to comply with 40 CFR 61, Subpart C. The permittee shall conduct a performance test for beryllium using Method 103 or 104 in Appendix B and described in 40 CFR 61.33 to determine maximum emissions over a 24 hour period.

The test shall be performed within 90 days of startup of the emissions unit.

The Hamilton County Department of Environmental Services shall be notified at least 30 days prior to an emissions test.

Samples shall be taken over such a period or periods as are 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. All determinations shall be reported to the Hamilton County Department of Environmental Services by a registered letter dispatched before the close of the next business day following such determination.

Records of emissions test results and other data needed to determine total emissions shall be retained at the source and shall be made available for inspection for a minimum of five years.

6. The permittee shall conduct, or have conducted, emissions testing for emissions units N008, N009 and N010 for mercury to comply with 40 CFR 61, Subpart E by either performing an emissions test or by performing sludge sampling:

- a. An emissions test using Method 101A in Appendix B; or  
The test shall be performed within 90 days of startup of the emissions unit.  
The Hamilton County Department of Environmental Services shall be notified at least 30 days prior to an emissions test.

Samples shall be taken over such a period or periods as are 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. All determinations shall be reported to the Hamilton County Department of Environmental Services by a registered letter dispatched before the close of the next business day following such determination.

Records of emissions test results and other data needed to determine total emissions shall be retained at the source and shall be made available for inspection for a minimum of five years.

- b. A sludge sampling test using Method 105 of Appendix B and paragraph 61.53 of 40 CFR 61.

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The sludge test shall be performed within 90 days of startup of the emissions unit.

The Hamilton County Department of Environmental Services shall be notified at least 30 days prior to the sludge test.

Sludge shall be sampled, the sludge charging rate shall be determined and the sludge analysis shall be performed according to 40CFR61.54(c).

Mercury emissions shall be determined according to 40CFR61.54(d).

All sludge samples shall be analyzed for mercury content within 30 days after the sludge sample is collected.

Records of sludge sampling, sludge charging rate and other data needed to determine mercury content of the wastewater treatment plant sludge shall be retained at the source and shall be made available for inspection of a minimum of five years.

7. Compliance with the visible particulate emissions limitation specified in 40 CFR 61.52(b) shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9.
8. Within 90 days of the start up of this emissions unit, the permittee shall conduct certification tests of the continuous CO monitoring system in units of the applicable standard(s), to demonstrate compliance with 40 CFR Part 60, Appendix B, Performance Specification 4 or 4a (as appropriate); and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and the Hamilton County Department of Environmental Services shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Hamilton County Department of Environmental Services and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the continuous CO monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 4 or 4a (as appropriate) and ORC section 3704.03(I).

Ongoing compliance with the CO emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record Keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan,

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which shall meet the requirements of 40 CFR Part 60.

9. Within 90 days of the start-up of this emissions unit, the permittee shall conduct or have conducted an emissions test to demonstrate compliance with the PE, SO<sub>2</sub>, OC and NO<sub>x</sub> emissions limitations.  
 Personnel from the Ohio EPA Central Office and the Hamilton County Department of Environmental Services shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Hamilton County Department of Environmental Services and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.
10. Compliance with the CO emissions limitation specified in term and condition A.I.2.h shall be determined through monitoring and record keeping specified in term and condition III.4.
11. Compliance with the requirement to maintain the combustion temperature as specified in term and condition A.II.3 shall be determined through monitoring and record keeping specified in term and condition III.8.

## VI. Miscellaneous Requirements

1. The following is a summary of the netting emissions in tons per year (TPY).

Pollutant	Potential emissions / allowable limits, tpy	Baseline emissions for existing incinerators, tpy	Project net emissions, tpy	Major NSR significant emission rate, tpy
PM	16.5	8.75	7.75	25
PM10	16.5	9.46	7.04	15
SO <sub>2</sub>	49.5	13.23	36.3	40
NO <sub>x</sub>	103.13	64.03	39.1	40
CO	70.13	512.51	-442.4	100
VOC	37.13	14.05	23.1	40
Lead	0.66	0.075	0.585	0.6

2. Within 180 days of the effective date of this permit, the permittee shall develop and maintain a written quality assurance/quality control plan for the continuous CO monitoring system, designed to ensure continuous valid and representative readings of CO emissions in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous CO monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60; and to conduct relative

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accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.

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**Issued: To be entered upon final issuance****B. State Only Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(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 specified in narrative form following the table.

**Operations, Property, and/or Equipment - (N009) - 4 dry ton per hour fluidized bed incinerator No. 2**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
NA	NA

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Issued: To be entered upon final issuance****Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(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 specified in narrative form following the table.

**Operations, Property, and/or Equipment - (N010) - 4 dry ton per hour fluidized bed incinerator No. 3**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Particulate emissions (PE) shall not exceed 1.6 lbs/hour, 0.40 lb/ton of dry sewage sludge and 38.4 lbs/day.</p> <p>Particulate Matter emissions 10 microns and less in diameter (PM10) shall not exceed 38.4 lbs/day.</p> <p>Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 4.8 lbs/hour and 115.2 lbs/day.</p> <p>Organic Compound (OC) emissions shall not exceed 86.4 lbs/day.</p> <p>Nitrogen Oxides (NO<sub>x</sub>) emissions shall not exceed 240.0 lbs/day.</p> <p>Carbon Monoxide (CO) emissions shall not exceed 163.2 lbs/day.</p> <p>See terms and conditions A.I.2.b, A.I.2.h, II.3, and II.4.</p> <p>The requirements of this rule also include compliance with the requirements of 40 CFR Part 60 Subpart O, 40 CFR Part 61 Subparts C &amp; E, OAC rule 3745-21-08(B), OAC rule 3745-23-06(B) and OAC rule 3745-31-05(C), except for the lead emissions.</p>

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40 Code of Federal Regulations (CFR) Part 60, Subpart O, New Source Performance Standards (NSPS)	Visible particulate emissions shall not exceed 20 percent opacity.  The particulate matter emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
40 CFR Part 61 Subpart C, National Emission Standards for Hazardous Air Pollutants (NESHAP)	Beryllium (BE) emission from the sewage sludge incinerator plant shall not exceed 0.022 lb of beryllium over a 24-hour period.
40 CFR Part 61 Subpart E, National Emission Standards for Hazardous Air Pollutants (NESHAP)	Mercury (HG) emissions from the sewage sludge incinerator plant shall not exceed 7.1 lbs of mercury per 24-hour period.
OAC rule 3745-31-05(C) Synthetic Minor to Avoid Nonattainment New Source Review and Prevention of Significant Deterioration	See terms and conditions A.I.2.a and II.2.
OAC rule 3745-17-07	The emission limitations specified by this rule is less stringent than the emission limitations established pursuant to 40 CFR Part 60 Subpart O.
OAC rule 3745-17-09	The emission limitations specified by this rule is less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-21-08(B)	See term and condition A.I.2.c.
OAC rule 3745-23-06(B)	See term and condition A.I.2.d.
OAC rule 3745-18-06(E)(2)	The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).
ORC 3704.03(T)(4)	See term and condition A.I.2.i.

**2. Additional Terms and Conditions**

**2.a** The total, combined mass emissions from emissions units N008, N009 and N010, as a 12-month rolling average, shall not exceed the following:

PE	16.5 tons/year;
PM10	16.5 tons/year;
SO2	49.5 tons/year;
OC	37.2 tons/year;

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NOx 103.2 tons/year;  
 CO 70.13 tons/year; and  
 Lead 0.66 ton/year.

- 2.b** The total, combined mass emissions from emissions units N008, N009 and N010 shall not exceed the following:

arsenic: 0.55 pound/day, 0.10 ton/year;  
 cadmium: 1.36 pounds/day, 0.25 ton/year;  
 chromium: 15.54 pounds/day, 2.84 tons/year;  
 nickel: 47.82 pounds/day, 8.73 tons/year;  
 beryllium: 0.004 ton/year; and  
 mercury: 1.29 tons/year.

- 2.c** 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 the State regulations. However, that rule revision has not yet been submitted to U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revisions occurs and the U.S. EPA approves the revisions 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.

- 2.d** 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; therefore, this rule is no longer part of the State regulations. This rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Until the U.S. EPA approves the revision to OAC rule 3745-23-06, the requirement to satisfy the "latest available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

- 2.e** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of venturi and impingement tray scrubbers and compliance with throughput limitations, visible emission limitations and all mass emission limitations.

- 2.f** The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60, are delegated to the Ohio

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Environmental Protection Agency. The requirements of 40 CFR Part 60 are also federally enforceable.

- 2.g** The application and enforcement of the provisions of the National Emissions Standards for Hazardous Air Pollutants (NESHAP), as promulgated by the United States Environmental Protection Agency, 40 CFR Part 61, are delegated to the Ohio Environmental Protection Agency. The requirements of 40 CFR Part 61 are also federally enforceable.
- 2.h** The monthly average concentration of carbon monoxide in the exit gas from this emissions unit, corrected for zero percent moisture and to seven percent oxygen, does not exceed 100 parts per million on a volumetric basis.
- 2.i** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the lead emissions from this air contaminant source since the calculated annual emission rate for lead emissions is less than 10 tons per year taking into account both the following federally enforceable limitation and voluntary restriction (including the used of any applicable air pollution control equipment) as proposed by the permittee:
- i. 40 CFR Part 503; and
  - ii. venturi and impingement tray scrubbers.

**II. Operational Restrictions**

1. The incinerator, including all associated equipment and grounds, shall be designed, operated and maintained so as to prevent the emission of objectionable odors.
2. The total combined dry sludge feed to emissions units N008, N009 and N010 shall not exceed 82,500 tons per year, based upon a rolling, 365 day summation of the daily dry sludge feed.

To ensure enforceability during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall not exceed the cumulative dry sludge feed levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Dry Sludge Feed (Tons)</u>
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1	8928
1-2	17856
1-3	26784
1-4	35712
1-5	44640
1-6	53568
1-7	62496
1-8	71424
1-9	80352
1-10	82500
1-11	82500
1-12	82500

After the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, compliance with the annual total combined dry sludge feed limitation for emissions units N008, N009 and N010 shall be based upon a rolling, daily summation of the total combined dry sludge feed for emissions units N008, N009 and N010.

3. The permittee shall operate this emissions unit in such a manner such that the operating combustion temperature for the sewage sludge incinerator shall not exceed the performance test combustion temperature by more than 20 percent.
4. Sewage sludge shall not be fired in this emissions unit if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.
5. Municipal solid waste shall not be fired in this emissions unit.

### **III. Monitoring and/or Record keeping Requirements**

1. The permittee shall properly install, calibrate, maintain and operate a monitoring device that continuously measures and records the pressure drop of the gas flow through the wet scrubbing device while this emissions unit is in operation. 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.

The permittee shall collect and record the following information and maintain in its files for a period of not less than five (5) years:

- a. a continuous record of the pressure drop of the gas flow through the scrubber and the 15 minute average of the pressure drop;
- b. records of the downtimes for the monitoring equipment when this emissions unit is in operation;
- c. records of monitoring equipment calibration checks; and
- d. records of a pressure drop reduction of more than 30 percent from the average

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pressure drop recorded during the most recent stack test which demonstrated the emissions unit to be in compliance shall be maintained.

2. The permittee shall properly install, calibrate, maintain and operate a monitoring device that continuously measures and records the oxygen content of the incinerator exhaust gas while this emissions unit is in operation. The oxygen monitor located upstream of any rabble shaft cooling air inlet into the incinerator exhaust gas stream, fan, ambient air 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 period.

The permittee shall collect and record the following information and maintain in its files for a period of not less than five (5) years:

- a. a continuous record of the oxygen content of the exhaust gas;
  - b. records of the downtimes for the monitoring equipment when this emissions unit is in operation;
  - c. records of monitoring equipment calibration checks; and
  - d. records of the average oxygen content in the incinerator exhaust gas for each period of one-hour duration or more that the oxygen content of the incinerator exhaust gas exceeds the average oxygen content measured during the most recent performance test which demonstrated the emissions unit to be in compliance by more than 3 percent.
3. Prior to the installation of the continuous carbon monoxide (CO) monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 4 or 4a, as appropriate. The Ohio EPA, Central Office shall approve the proposed sampling site and certify that the continuous CO monitoring system meets the requirements of Performance Specification 4 or 4a. Once received, the letter/document of certification shall be maintained on-site and shall be made available to the director (the appropriate Ohio EPA District Office or local air agency) upon request.

Each continuous monitoring system consists of all the equipment used to acquire and record data in units of all applicable standard(s), and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data processing hardware and software.

4. The permittee shall install, calibrate, maintain and operate equipment to continuously

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monitor and record CO emissions in the exit gas from this emissions unit in units of the applicable standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of data obtained by the continuous CO monitoring system for a period of five years including, but not limited to:

- a. emissions of CO in parts per million on an instantaneous (one-minute) basis;
  - b. emissions of CO in all units of the applicable standard(s) in the appropriate averaging period;
  - c. results of quarterly cylinder gas audits;
  - d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;
  - e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);
  - f. hours of operation of the emissions unit, continuous CO monitoring system, and control equipment;
  - g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous CO monitoring system;
  - h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous CO monitoring system; as well as,
  - i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).
5. The permittee shall properly install, calibrate, maintain and operate equipment to continuously monitor the scrubber water flow rate while this emissions unit is in operation. The monitoring device and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

- a. the scrubber water flow rate, in gallons per minute, on a once per shift basis;
  - b. the downtimes for the capture (collection) system, control device, and monitoring equipment when this emissions unit is in operation; and
  - c. a record of the scrubber water flow rate which is not maintained at or above the minimum scrubber water flow rate established during the most recent stack test which demonstrated the emissions unit to be in compliance.
6. The permittee shall install, calibrate, maintain, and operate the a flow measuring device which can be used to determine the mass 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 permittee shall collect and record the following information and maintain in its files

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for a period of not less than five (5) years:

- a. the daily total tons of dry sludge fed to emissions units N008, N009 and N010; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 365-day summation of the sludge charge rates.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative sludge charge rate for each calendar month.

7. The permittee shall install, calibrate, maintain and operate an instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas for this sewage sludge incinerator.
8. The permittee shall install, calibrate, maintain and operate 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. The permittee shall record operation of a sewage sludge incinerator when the operating combustion temperature for the fluidized bed incinerator exceeds the performance test combustion temperature by more than 20 percent.
9. The frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel in sewage sludge fed to a sewage sludge incinerator shall be once per month (12 times per year.)  
After the sewage sludge has been monitored for two years the Ohio EPA may reduce the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel.
10. The permittee shall develop the following information and retain that information for a period of five years:
  - a. the concentration of lead, arsenic, cadmium, chromium and nickel in the sewage sludge fed to the sewage sludge incinerator;
  - b. information that indicates the requirements in the National Emission Standard for beryllium in Subpart C of 40 CFR Part 61 are met;
  - c. information that indicates the requirements in the National Emission Standard for mercury in Subpart E of 40 CFR Part 61 are met;
  - d. the operating combustion temperatures for the sewage sludge incinerator;
  - e. values for the air pollution control device operating parameters;

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- f. the oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack;
  - g. the sewage sludge feed rate;
  - h. the stack height for the sewage sludge incinerator;
  - i. the dispersion factor for the site where the sewage sludge incinerator is located;
  - j. the control efficiency for arsenic, cadmium, chromium, lead, and nickel for each sewage sludge incinerator; and
  - k. the risk specific concentration for chromium calculated using the equation for 40 CFR Part 503.43(d), if applicable.
11. All the sources for which mercury emissions exceed 3.5 lbs per 24-hour period shall monitor mercury emissions at intervals of at least once per year by use of Method 105 of Appendix B or the procedures specified in 40 CFR Part 61.53(d). The results of monitoring shall be reported and retained according to 40 CFR Part 61.53(d)(5) and (6) or 40 CFR Part 61.54(f) and (g).
  12. The permittee shall provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.

#### IV. Reporting Requirements

1. This facility shall submit semi-annual deviation 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 scrubber system is less than 30 percent from the average scrubber pressure drop measured during the most recent performance test; and
  - b. 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.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).
2. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 365 day total combined dry sludge feed limitation for emissions units N008, N009 and N010 and exceedances of the total combined dry sludge feed limitation for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit.
3. The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous CO monitoring system:
  - a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within

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30 days following the end of each calendar quarter to the Hamilton County Department of Environmental Services, documenting all instances of CO emissions in excess of any applicable limit specified in this permit, 40 CFR Part 60, OAC Chapter 3745-21, and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as, the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s). If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect.

- b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:
- i. the facility name and address;
  - ii. the manufacturer and model number of the continuous CO and other associated monitors;
  - iii. the location of the continuous CO monitor;
  - iv. the exceedance report as detailed in (a) above;
  - v. the total CO emissions for the calendar quarter (tons);
  - vi. the total operating time (hours) of the emissions unit;
  - vii. the total operating time of the continuous CO monitoring system while the emissions unit was in operation;
  - viii. the monthly average carbon monoxide concentration in the exit gas;
  - ix. results and dates of quarterly cylinder gas audits;
  - x. results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));
  - xi. the results of any relative accuracy test audit showing the continuous CO monitor out-of-control and the compliant results following any corrective actions;
  - xii. the date, time, and duration of any/each malfunction\* of the continuous CO monitoring system, emissions unit, and/or control equipment;
  - xiii. the date, time, and duration of any downtime\* of the continuous CO monitoring system and/or control equipment while the emissions unit was in operation; and
  - xiv. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xii) and (xiii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

\* each downtime and malfunction event shall be reported regardless if there is

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an exceedance of any applicable limit

4. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels.
  - a. the scrubber water flow rate.

Should any deviations occur, the corrective action taken to remedy the deviation, along with the date the corrective action taken shall be submitted.

5. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month emissions limitations for PE, PM10, SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO and Lead for emissions unit N008, N009 and N010, combined, as specified in Section A.I.2.a.
6. The permittee shall submit an annual report to the Hamilton County Department of Environmental Services that provides the information required in term and condition III.10 on February 19 of each year.
7. Deviation (excursion) reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.
8. Pursuant to the NSPS and NESHAP, the source owner-operator is hereby advised of the requirement to report the following at the appropriate times:
  - a. construction date (no later than 30 days after such date),
  - b. actual start-up date (within 15 days after such date), and
  - c. date of performance testing (if required, at least 30 days prior to testing).

Reports are to be sent to:

Hamilton County Department of Environmental Services  
 250 William Howard Taft Road  
 Cincinnati, OH 45219.

9. If the average particulate matter emission rate exceeds 0.75 lb PE per ton of dry sludge input, the permittee shall submit the reports required as specified in 40 CFR Part 63.155(a) (1)(ii) and (b).

## **V. Testing Requirements**

1. Compliance with the emission limitations in Sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

Emission Limitations:

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Particulate Emissions (PE) shall not exceed 1.6 lbs/hour, 0.40 lb/ton of dry sewage sludge, and 38.4 lbs/day from this emissions unit. PE from emissions units N008, N009 and N010 shall not exceed 16.5 TPY.

**Applicable Compliance Methods:**

Compliance with the emission limitation of 1.6 lbs/hour of PE specified in term A.1 shall be demonstrated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PE/ton of dry sludge input by the maximum sludge feed rate of 4 tons per hour. If required, compliance with the hourly PE limitation and the PE limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 5 in 40 CFR 60, Appendix A.

The emission limitation of 38.4 lbs/day of PE specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PE/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day.

The emission limitation of 16.5 TPY of PE was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PE/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Particulate Matter emissions 10 microns and less in diameter (PM10) shall not exceed 38.4 lbs/day from this emissions unit. PM10 emissions from emissions units N008, N009 and N010 shall not exceed 16.5 TPY.

**Applicable Compliance Methods:**

The emission limitation of 38.4 lbs/day of PM10 specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PM10/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day.

The emission limitation of 16.5 TPY of PM10 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.40 lb of PM10/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 4.8 lbs/hour and 115.2 lbs/day from this emissions unit. SO<sub>2</sub> emissions from emissions units N008, N009 and N010 shall not exceed 49.5 TPY.

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**Issue**

Facility ID: 1431070944

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**Applicable Compliance Methods:**

Compliance with the emission limitation of 4.8 lbs/hour of SO<sub>2</sub> specified in term A.1 shall be demonstrated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.20 lbs of SO<sub>2</sub>/ton of dry sludge input by the maximum sludge feed rate of 4 tons per hour. If required, compliance with the hourly SO<sub>2</sub> emission limitation and the SO<sub>2</sub> limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 6 in 40 CFR 60, Appendix A.

The emission limitation of 115.2 lbs/day of SO<sub>2</sub> specified in term A.1 was calculated by multiplying the emission factor from the PTI application 14-05837 submitted April 24, 2006 of 1.20 lbs SO<sub>2</sub>/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day.

The emission limitation of 49.5 TPY of SO<sub>2</sub> was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.20 lbs of SO<sub>2</sub>/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Carbon Monoxide (CO) emissions shall not exceed 163.2 lbs/day from this emissions unit.

CO emissions from emissions units N008, N009 and N010 shall not exceed 70.13 TPY.

**Applicable Compliance Methods:**

The emission limitation of 163.2 lbs/day of CO specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.70 lbs of CO/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day. If required, compliance with the CO emission limitation and the CO limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 10 in 40 CFR 60, Appendix A.

The emission limitation of 70.13 TPY of CO was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 1.70 lbs of CO/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Nitrogen Oxides (NO<sub>x</sub>) emissions shall not exceed 240.0 lbs/day from this emissions unit.

NO<sub>x</sub> emissions from emissions units N008, N009 and N010 shall not exceed 103.2 TPY.

**Applicable Compliance Methods:**

The emission limitation of 240.0 lbs/day of NO<sub>x</sub> specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted

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April 24, 2006 of 2.50 lbs of NO<sub>x</sub>/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day. If required, compliance with the NO<sub>x</sub> emission limitation and the NO<sub>x</sub> limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 7 in 40 CFR 60, Appendix A.

The emission limitation of 103.2 TPY of NO<sub>x</sub> was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 2.50 lbs of NO<sub>x</sub>/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Organic Compound (OC) emissions shall not exceed 86.4 lbs/day from this emissions unit. OC emissions from emissions units N008, N009 and N010 shall not exceed 37.2 TPY.

**Applicable Compliance Methods:**

The emission limitation of 86.4 lbs/day of OC specified in term A.1 was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.90 lb of OC/ton of dry sludge input by the maximum sludge feed rate of 96 tons per day. If required, compliance with the OC emissions limitation and the OC limitation in terms of lb/ton of dry sewage sludge processed shall be demonstrated using Methods 1 through 4 and 25a in 40 CFR 60, Appendix A.

The emission limitation of 37.2 TPY of OC was calculated by multiplying the emission factor from the PTI application number 14-05837 submitted April 24, 2006 of 0.90 lb of OC/ton of dry sludge input by the maximum allowable cumulative sludge feed rate of 82,500 tons per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Arsenic emissions from emissions units N008, N009 and N010 shall not exceed 0.55 lb/day and 0.10 TPY.

**Applicable Compliance Methods:**

The emission limitation of 0.55 lb/day of arsenic specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 0.10 TPY of arsenic was calculated by multiplying the daily emission rate of 0.55 lbs/day of arsenic by 365 days per year plant operation and dividing by 2000 lbs/ton.

**Emission Limitations:**

Cadmium emissions from emissions units N008, N009 and N010 shall not exceed 1.36

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lbs/day and 0.25 TPY.

**Applicable Compliance Methods:**

The emission limitation of 1.36 lbs/day of cadmium specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 0.25 TPY of cadmium was calculated by multiplying the daily emission rate of 1.36 lbs/day cadmium by 365 days per year plant operation and dividing by 2000 lbs/ton.

**Emission Limitations:**

Chromium emissions from emissions units N008, N009 and N010 shall not exceed 15.54 lbs/day and 2.84 TPY.

**Applicable Compliance Methods:**

The emission limitation of 15.54 lbs/day of chromium specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 2.84 TPY of chromium was calculated by multiplying the daily emission rate of 15.54 lbs/day chromium by 365 days per year plant operation and dividing by 2000 lbs/ton.

**Emission Limitation:**

Lead emissions from emissions units N008, N009 and N010 shall not exceed 0.66 TPY.

**Applicable Compliance Method:**

The emissions limitation of 0.66 TPY lead was calculated by multiplying the daily emission rate of 3.59 lbs/day of lead, which was derived from the methodology in 40 CFR Part 503.43 Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006, by 365 days per year plant operation and dividing by 2000 lbs/ton.

**Emission Limitations:**

Nickel emissions from emissions units N008, N009 and N010 shall not exceed 47.82 lbs/day and 8.73 TPY.

**Applicable Compliance Methods:**

The emission limitation of 47.82 lbs/day of nickel specified in term A.1 was derived from the methodology in 40 CFR Part 503.43, Subpart E and submitted with the PTI application number 14-05837 on April 24, 2006.

The emission limitation of 8.73 TPY of nickel was calculated by multiplying the daily emission rate of 47.82 lbs/day of nickel by 365 days per year plant operation and dividing by 2000 lbs/ton.

**Emission Limitations:**

Mercury emissions from emissions units N008, N009 and N010 shall not exceed 7.1 lbs/day and 1.29 TPY.

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**Applicable Compliance Methods:**

The emission limitation of 7.1 lbs/day of mercury specified in term A.1 was based on 40 CFR 61.52(b), Subpart E. The emission limitation is applicable as facility-wide limitations. Compliance shall be demonstrated by the emissions testing or sludge sampling as described below.

The emission limitation of 1.29 TPY of mercury was calculated by multiplying the allowable daily emission rate of 7.1 lbs/day of mercury by 365 days per year and dividing by 2000 lbs/ton.

**Emission Limitations:**

Beryllium emissions from emissions units N008, N009 and N010 shall not exceed 0.022 lb/day and 0.004 TPY.

**Applicable Compliance Methods:**

The emission limitation of 0.022 lb/day beryllium specified in term A.1 was based on 40 CFR 61.32(a), Subpart C. The emission limitation is applicable as facility-wide limitations. Compliance shall be demonstrated by the emissions testing as described below.

The emission limitation of 0.004 TPY of beryllium was calculated by multiplying the allowable daily emission rate of 0.022 lb/day of beryllium by 365 days per year and dividing by 2000 lbs/ton.

2. As specified in 40 CFR 60.8, each performance test shall consist of at least three separate runs at the same operating conditions.
3. All continuous monitoring systems and monitoring devices shall be operational, and calibrated prior to conducting performance tests.
4. The performance test shall be conducted under representative sewage sludge incinerator conditions at the highest expected sewage sludge feed rate within the design capacity of the sewage sludge incinerator.
5. The permittee shall conduct, or have conducted, emissions testing for emissions units N008, N009 and N010 for beryllium to comply with 40 CFR 61, Subpart C. The permittee shall conduct a performance test for beryllium using Method 103 or 104 in Appendix B and described in 40 CFR 61.33 to determine maximum emissions over a 24 hour period.

The test shall be performed within 90 days of startup of the emissions unit.

The Hamilton County Department of Environmental Services shall be notified at least 30 days prior to an emissions test.

Samples shall be taken over such a period or periods as are 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

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emissions unit performance stack test. All determinations shall be reported to the Hamilton County Department of Environmental Services by a registered letter dispatched before the close of the next business day following such determination. Records of emissions test results and other data needed to determine total emissions shall be retained at the source and shall be made available for inspection for a minimum of five years.

6. The permittee shall conduct, or have conducted, emissions testing for emissions units N008, N009 and N010 for mercury to comply with 40 CFR 61, Subpart E by either performing an emissions test or by performing sludge sampling:
  - a. An emissions test using Method 101A in Appendix B; or  
The test shall be performed within 90 days of startup of the emissions unit. The Hamilton County Department of Environmental Services shall be notified at least 30 days prior to an emissions test. Samples shall be taken over such a period or periods as are 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. All determinations shall be reported to the Hamilton County Department of Environmental Services by a registered letter dispatched before the close of the next business day following such determination. Records of emissions test results and other data needed to determine total emissions shall be retained at the source and shall be made available for inspection for a minimum of five years.
  - b. A sludge sampling test using Method 105 of Appendix B and paragraph 61.53 of 40 CFR 61.  
  
The sludge test shall be performed within 90 days of startup of the emissions unit. The Hamilton County Department of Environmental Services shall be notified at least 30 days prior to the sludge test. Sludge shall be sampled, the sludge charging rate shall be determined and the sludge analysis shall be performed according to 40CFR61.54(c). Mercury emissions shall be determined according to 40CFR61.54(d). All sludge samples shall be analyzed for mercury content within 30 days after the sludge sample is collected. Records of sludge sampling, sludge charging rate and other data needed to determine mercury content of the wastewater treatment plant sludge shall be retained at the source and shall be made available for inspection of a minimum of five years.
7. Compliance with the visible particulate emissions limitation specified in 40 CFR 61.52(b) shall be determined through visible emission observations performed in

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accordance with 40 CFR Part 60, Appendix A, Method 9.

8. Within 90 days of the start up of this emissions unit, the permittee shall conduct certification tests of the continuous CO monitoring system in units of the applicable standard(s), to demonstrate compliance with 40 CFR Part 60, Appendix B, Performance Specification 4 or 4a (as appropriate); and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and the Hamilton County Department of Environmental Services shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Hamilton County Department of Environmental Services and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the continuous CO monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 4 or 4a (as appropriate) and ORC section 3704.03(I).

Ongoing compliance with the CO emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record Keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the requirements of 40 CFR Part 60.

9. Within 90 days of the start-up of this emissions unit, the permittee shall conduct or have conducted an emissions test to demonstrate compliance with the PE, SO<sub>2</sub>, OC and NO<sub>x</sub> emissions limitations.  
 Personnel from the Ohio EPA Central Office and the Hamilton County Department of Environmental Services shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Hamilton County Department of Environmental Services and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.
10. Compliance with the CO emissions limitation specified in term and condition A.I.2.h shall be determined through monitoring and record keeping specified in term and condition III.4.
11. Compliance with the requirement to maintain the combustion temperature as specified in term and condition A.II.3 shall be determined through monitoring and record keeping specified in term and condition III.8.

## **VI. Miscellaneous Requirements**

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1. The following is a summary of the netting emissions in tons per year (TPY).

Pollutant	Potential emissions / allowable limits, tpy	Baseline emissions for existing incinerators, tpy	Project net emissions, tpy	Major NSR significant emission rate, tpy
PM	16.5	8.75	7.75	25
PM10	16.5	9.46	7.04	15
SO2	49.5	13.23	36.3	40
NOx	103.13	64.03	39.1	40
CO	70.13	512.51	-442.4	100
VOC	37.13	14.05	23.1	40
Lead	0.66	0.075	0.585	0.6

2. Within 180 days of the effective date of this permit, the permittee shall develop and maintain a written quality assurance/quality control plan for the continuous CO monitoring system, designed to ensure continuous valid and representative readings of CO emissions in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous CO monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60; and to conduct relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.

**B. State Only Enforceable Section**

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

- 1. The specific operations(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 specified in narrative form following the table.

**Operations, Property, and/or Equipment - (N010) - 4 dry ton per hour fluidized bed incinerator No. 3**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
NA	NA

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None