State of Ohio Environmental Protection Agency

RE: FINAL PERMIT TO INSTALL **CERTIFIED MAIL**
CARROLL COUNTY

Street Address:
122 S. Front Street
Lazarus Gov. Center **TELE:** (614) 644-3020 **FAX:** (614) 644-2329
Mailing Address:
Lazarus Gov. Center
P.O. Box 1049

Application No: 02-17607

DATE: 4/8/2003

Fusion Ceramics, Inc.
John Baker
PO Box 127
Carrollton, OH 44615

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

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.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,
Michael W. Ahern
Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA **NEDO**

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install	**Issue Date: 4/8/2003**
Terms and Conditions	**Effective Date: 4/8/2003**

FINAL PERMIT TO INSTALL 02-17607

Application Number:	02-17607
APS Premise Number:	0210000013
Permit Fee:	**$800**
Name of Facility:	Fusion Ceramics, Inc.
Person to Contact:	John Baker
Address:	PO Box 127 Carrollton, OH 44615

Location of proposed air contaminant source(s) [emissions unit(s)]:
160 Scio Rd., SE
Carrollton, **Ohio**

Description of proposed emissions unit(s):
Modification to four frit smelters to add dual fuel burners.

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

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

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

2. Reporting Requirements

The ee shall submit required reports in the following manner:

a. Reports of any required monitoring and/or recordkeeping 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 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 quarterly, i.e., 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. Records Retention Requirements

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.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. 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, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. 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 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. 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 emissions unit(s) that is (are) served by such control system(s).

6. 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.

7. 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.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of 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.

9. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio

Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. 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 the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install 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.

10. 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.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

12. 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.

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This 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 emissions unit(s) covered by this permit.

14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) 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.

15. 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 this Permit to Install.

B. 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

Pollutant	Tons Per Year
PM	50.4
NOx	18.8
CO	28.0
SO2	21.6

Emissions Unit ID: **P001**

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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	Applicable Rules/Requirements
	OAC rule 3745-17-07(A)(1)
P001 - Smelter No. 1 for frit production	OAC rule 3745-31-05(A)(3)

Applicable Emissions Limitations/Control Measures	
Process emissions: PM: 1.7 lbs/hr, 7.4 tpy NOx: 1.7 lbs/hr, 7.4 tpy CO: 1.3 lbs/hr, 5.7 tpy	
Combustion emissions from natural gas use: NOx: 0.4 lb/hr, 1.5 tpy CO: 0.35 lb/hr, 1.3 tpy	
Combustion emissions from #2 oil use: NOx: 0.6 lb/hr, 2.0 tpy SO2: 0.2 lb/hr, 0.7 tpy	
Combustion emissions from 'on-spec' waste oil use: NOx; 0.5 lb/hr, 1.6 tpy SO2: 1.6 lbs/hr, 5.4 tpy PM: 1.6 lbs/hr, 5.2 tpy	
Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed twenty (20) percent opacity, as a six-minute average.	
See Section A.2.a through A.2.e below. The emission limitation specified by this rule is equivalent to the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).	

2. Additional Terms and Conditions

2.a A baghouse shall be in operation during times when raw material is charged to the smelter.

2.b The height of the stack serving this emissions unit shall be at least 36 feet.

2.c The permittee shall use only natural gas, #2 fuel oil, or 'on-spec' waste oil as fuel in this unit. 'Off-spec' used oil shall not be used in this unit.

2.d All waste oil burned in this emissions unit shall meet the following specifications:

Contaminant/Property	Allowable Specifications
arsenic	5 ppm, maximum
cadmium	2 ppm, maximum
chromium	10 ppm, maximum
lead	100 ppm, maximum
PCB's	2 ppm, maximum
total halogens	4,000 ppm, maximum
mercury	1 ppm, maximum
flash point	100 F, minimum
heat content	135,000 BTU/gallon, minimum

2.e The quality of the oil (#2 and/or 'on-spec' waste oil) burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable sulfur dioxide emission limitations specified in Section A.1 above. The application for this PTI reported a sulfur content of 0.05% for #2 oil, and 0.5% for waste oil.

2.f If the permittee is burning used oil with any quantifiable level (above 2 ppm) of PCB's, then the permittee is subject to the notification requirements of 40 CFR 279.62.

2.g On-spec waste oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under 40 CFR Part 266.40(c) and OAC rule 3745-58-50. Therefore, the permittee may receive and burn used oil exceeding 1,000 ppm of total halogens (but less than 2,000 ppm, maximum) only if the supplier ("marketer" in 40 Part CFR 266.43(a)) has demonstrated to the Ohio EPA's Division of Hazardous Waste Management that the used oil does not contain any hazardous waste.

B. Operational Restrictions

1. The maximum heat input for this emissions unit shall not exceed 6.0 mmBTU per hour, the reported maximum heat rate capacity.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain daily records of the following information:

   a. type of fuel (natural gas, #2 fuel oil, or 'on-spec' waste oil) burned in this emissions unit,
   b. quantity of fuel burned in this emissions unit, (ft^3/day or gallons/day),
   c. the sulfur content (in percent) and heat content (BTU/gal), if #2 fuel oil and/or 'on-spec' waste oil is used that day, and also the ash content (in percent) for 'on-spec' waste oil,
   d. the heat input for this emissions unit (mmBTU/hr),
   e. number of hours (hours/day) this emissions unit was in operation,
   f. identification of the type of raw material, and amounts (weight) of each, charged to this emissions unit, and
   g. total amount (tons) of raw materials charged to this emissions unit.
   h. the average, hourly feed rate (tons/hr) to this emission unit calculated by (g) divided by (e),
   i. if #2 fuel oil and/or 'on-spec' waste oil is used, the average, hourly SO2 emission rate as calculated by the following equation:

      E = EF x 1/HC x HI

      where;

      E = SO2 emission rate in pounds per hour

      EF = Emission factor, taken from AP-42. <u>When using #2 fuel oil,</u> EF = 107(S) lbs/1,000 gallons, taken from Table 1.3-1, where S is the percent sulfur as recorded in (c).* <u>When using 'on-spec' waste oil,</u> EF = 142(S) lbs/1,000 gallons, taken from Table 1.11-2, where S is the percent sulfur as recorded in (c).*

      **If the sulfur percent is 0.05%, S = 0.05.*

      HC = Heat content of oil, in BTU/gallon, as recorded in (c).

      HI = Heat input of emissions unit, in mmBTU/hr, as recorded in (d), and

   j. if 'on-spec' waste oil is used, the average, hourly particulate emission rate as calculated by the following equation:

      E = EF x G

      where;

      E = Emission rate in pounds per hour

EF = PM Emission factor for waste oil, taken from Table 1.11-1 of AP-42, is 66(A) lbs/1,000 gallons, where A = percent ash in the oil, as recorded in (c).

G = Amount of fuel used in day (in gallons), as recorded in (b), divided by number of operating hours in day, as recorded in (e).

2. The permittee shall perform daily checks, when the emission unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible particulate emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in an operations log:

   a. the color of the emissions,
   b. whether the emissions are representative of normal operations,
   c. if the emissions are not representative of normal operations, the cause of the abnormal emissions,
   d. the total duration of any visible emissions incident, and
   e. any corrective actions taken to eliminate the visible emissions.

3. The permittee shall collect or require the oil supplier to collect a representative grab sample for each shipment of #2 fuel oil and 'on-spec' waste oil that is received for burning in this emissions unit. The permittee shall perform or require the supplier to perform the analysis for sulfur content and heat content in accordance with the following American Society for Testing and Materials (ASTM) methods: ASTM method D4294, ASTM method D240, or ASTM method 6010 for sulfur content; and ASTM method D240 for heat content. Alternative, equivalent methods may be used upon written approval by the appropriate Ohio EPA District Office of local air agency.

4. For each shipment of oil (#2 fuel oil or 'on-spec' waste oil) received for burning in this emissions unit, the permittee shall maintain records of the total quantity of each type of oil received and the permittee's or oil supplier's analysis for sulfur content and heat content.

5. The permittee shall receive a chemical analysis with each shipment of 'on-spec' waste oil from the supplier. The analysis shall identify the name and address of the supplier, the supplier's USEPA identification number (if available), and the following information:

   a. date of shipment or delivery,
   b. quantity of used oil received,
   c. the BTU value of the used oil,
   d. the flash point of the used oil,
   e. the arsenic content,
   f. the cadmium content,

g. the chromium content,
h. the lead content,
i. the PCB content,
j. the total halogen content,
k. the mercury content, and
l. the ash content.

Each analysis shall be kept in a readily accessible location for at least 5 years and shall be made available to the Director (the Ohio EPA Northeast District Office) upon verbal or written request. The Director or any authorized representative of the Director may require or may conduct periodic, detailed chemical analyses through an independent laboratory of any 'on-spec' waste oil shipment received by this facility, or any 'on-spec' waste oil stored at this facility.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports each calendar quarter to identify the type, and duration, of any term and condition listed in Sections A.1 and A.2 that was not met during that quarter. The calendar quarters are January 1 - March 31, April 1 - June 30, July 1 - September 30, and October 1 - December 31.

   If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report stating that no deviations occurred during that quarter.

   Quarterly reports shall be submitted to the Ohio EPA, Northeast District Office, by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters.

2. The permittee shall submit to the Ohio EPA, Northeast District Office, on a quarterly basis, copies of the permittee's or oil supplier's analyses for each shipment of #2 fuel oil, and/or 'on-spec' waste oil which is received for burning in this emissions unit, or a letter stating no such fuel was received that quarter. The permittee's or oil supplier's analysis shall include the following:

   a. the total quantity of oil received in each shipment (gallons),
   b. the sulfur content (percent) and heat content (BTU/gallon) for each shipment,
   c. the results of the analyses as described in Section C.5 of this permit for 'on-spec' waste oil.

   These quarterly reports shall be submitted by Janaury 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall notify the USEPA and the Ohio EPA if any of the 'on-spec' waste oil exceeds the 'on-spec' waste oil specifications provided in this permit.

E. Testing Requirements

1. Emission Limitation:
   PM: 1.7 lbs/hour from process operations

   Applicable Compliance Method:
   If required by the Ohio EPA, compliance with the allowable particulate emission limit from process operations shall be determined in accordance with the following method(s): Methods 1 -5 of 40 CFR Part 60, Appendix A.

2. Emission Limitation:
   PM: 7.4 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = A x B x ton/2,000 lbs
where;
E = Emission rate in tons/year
A = Hourly emissions rate in pounds/hour (as determined in Section E.1)
B = Total number of hours the emissions unit was in operation during a calendar year, in hours/year, (calculated by the summation of the daily records kept per Section C.1.e).

3. Emission Limitation:
NOx: 1.7 lbs/hour from process operations

Applicable Compliance Method:
If required by the Ohio EPA, compliance with the allowable NOx emission limit from process operations shall be determined in accordance with the following method: Method 7 of 40 CFR Part 60, Appendix A.

4. Emission Limitation:
NOx: 7.4 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = A x B x ton/2,000 lbs
where;
E = Emission rate in tons per year
A = Hourly emissions rate in pounds/hour (as determined in Section E.3)
B = Total number of hours the emissions unit was in operation during a calendar year, in hours/year, (calculated by the summation of the daily records kept per Section C.1.e)

5. Emission Limitation:
CO: 1.3 lbs/hour from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = EF x C
where;
E = Emission rate in pounds per hour

EF	=	Emission factor for CO, taken from Table 11.14-1, AP-42 (6/97), is 4.8 lbs CO per ton of feed
C	=	Amount of feed material charged to the emissions unit, in tons per hour, as recorded in Section C.1.h.

6. Emission Limitation:
   CO: 5.7 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = EF x D x ton/2,000 lbs,
where;
E = Emission rate in tons per year
EF = Emission factor for CO, taken from Table 11.14-1, AP-42 (6/97), is 4.8 lbs CO per ton of feed
D = Amount of feed material charged to the emissions unit, in tons per year, calculated as the summation of the daily amounts recorded in Section C.1.g for each calendar year

7. Emission Limitation:
NOx: 0.4 lb/hour from natural gas combustion
0.6 lb/hour from #2 oil combustion
0.5 lb/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with th limit provided for each type of fuel shall be determined by the following equation:
E = EF x G
where;
E = Emission rate in pounds per hour
EF = Emission factors taken from AP-42. When calculating for natural gas, EF = 100 lbs/mmft^3 (Table 1.4-1). When calculating for #2 fuel oil, EF = 20 lbs/1,000 gallons (Table 1.3-1). When calculating for 'on-spec' waste oil, EF = 16 lbs/1,000 gallons (Table 1.11-2).
G = Amount of fuel used in day (in ft^3 or gallons), as recorded in Section C.1.b, divided by number of operating hours in day, as recorded in Section C.1.e

8. Emission Limitation:
NOx: 1.5 tons/year from natural gas combustion
2.0 tons/year from #2 oil combustion
1.6 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of fuel shall be determined by the following equation.
E = EF x J x ton/2,000 lbs
where;
E = Emission rate in tons per year

EF = Emission factors taken from AP-42. When calculating for natural gas, EF = 100 lbs/mmft^3 (Table 1.4-1). When calculating for #2 fuel oil, EF = 20 lbs/1,000 gallons (Table 1.3-1). When calculating for 'on-spec' waste oil, EF = 16 lbs/1,000 gallons (Table 1.11-2).

J = Amount of fuel burned (mmft3/yr for natural gas, and gallons/yr for #2 oil and 'on-spec' waste oil) in the emissions unit, calculated as the summation of the daily amounts of each type of fuel burned, as recorded in Section C.1.b, for each calendar year.

9. Emission Limitation:
CO: 0.35 lb/hour from natural gas combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = EF x G
where;
E = Emission rate in pounds per hour
EF = CO Emission factor for natural gas, taken from Table 1.4-1 of AP-42, is 84 lbs/mmft^3.
G = Amount of fuel used in day (in ft^3), as recorded in Section C.1.b, divided by number of operating hours in day, as recorded in Section C.1.e

10. Emission Limitation:
CO: 1.3 tons/year from natural gas combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation.
E = EF x J x ton/2,000 lbs
where;
E = Emission rate in tons per year
EF = CO Emission factor for natural gas, taken from Table 1.4-1 of AP-42, is 84 lbs/mmft^3.
J = Amount of natural gas burned (in mmft3/yr, when it is burned) in the emissions unit, calculated as the summation of the daily amounts of fuel burned, as recorded in Section C.1.b, for each calendar year

11. Emission Limitation:
SO2: 0.2 lb/hour from #2 oil combustion
1.6 lb/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of fuel shall be determined by the record keeping requirements in Section C.1.i.

12. Emission Limitation:
SO2: 0.7 tons/year from #2 oil combustion
5.4 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of oil shall be determined by the following equation.

E = EF x J x ton/2,000 lbs

where;

E = Emission rate in tons per year

EF = Emission factor, taken from AP-42. When calculating for #2 fuel oil, EF = 107(S) lbs/1,000 gallons, taken from Table 1.3-1, where S is the weighted average percent sulfur.* When calculating for 'on-spec' waste oil, EF = 142(S) lbs/1,000 gallons, taken from Table 1.11-2, where S is the weighted average percent sulfur.*

J = Amount of fuel burned (gallons/yr) in the emissions unit, calculated as the summation of the daily amounts of each type of oil burned, as recorded in Section C.1.b, for each calendar year

*The weighted average percent sulfur of an oil is calculated by multiplying each percent sulfur value by the gallons of oil with that value, adding up all the value-weighted products, and dividing the sum of the value-weighted products by the sum of all the shipment gallons burned during that calendar year. For example; The sum of (0.05)(1,000 gallons oil, at 0.05% sulfur, was burned that year) + (0.10)(2,000 gallons oil, at 0.10 % sulfur, was burned that year) divided by the sum of all the oil burned during the calendar year (1,000 gallons + 2,000 gallons). This example would produce a weighted average percent sulfur of 0.08%, or where S = 0.08. The calculation for #2 oil and 'on-spec' waste oil must be kept separate.

13. Emission Limitation:
PM: 1.6 lbs/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the record keeping requirements in Section C.1.j.

14. Emission Limitation:
PM: 5.2 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation.

E = EF x J x ton/2,000 lbs

where;

E = Emission rate in tons per year

EF = PM Emission factor for waste oil, taken from Table 1.11-1 of AP-42, is 66(A) lbs/1,000 gallons, where A = average weighted percent ash in the oil*

J = Amount of fuel burned (gallons/yr) in the emissions unit, calculated as the summation of the daily amounts of the oil burned, as recorded in Section C.1.b, for each calendar year.

*The weighted average percent ash of the oil is calculated by multiplying each percent ash value by the gallons of oil with that value, adding up all the value-weighted products, and dividing the sum of the value-weighted products by the sum of all the shipment gallons burned during that calendar year. For example; The sum of (0.79)(1,000 gallons oil, at 0.79% ash, was burned that year) + (0.90)(2,000 gallons oil, at 0.90 % ash, was burned that year) divided by the sum of all the oil burned during the calendar year (1,000 gallons + 2,000 gallons). This example would produce a weighted average percent ash of 0.86%, or where A = 0.86.

15. Emission Limitation:
Visible particulate emissions (VE) from the exhaust stack serving this emissions unit shall not exceed twenty (20) percent opacity, as a six-minute average.

Applicable Compliance Method:
If required by the Ohio EPA, compliance with the allowable VE limit shall be determined in accordance with the following method: Method 9 of 40 CFR Part 60, Appendix A.

F. Miscellaneous Requirements

None

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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	Applicable Rules/Requirements	
P002 - Smelter No. 3 for frit production	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-07(A)(1)

Applicable Emissions
Limitations/Control Measures

Process emissions:
PM: 1.7 lbs/hr, 7.4 tpy
NOx: 1.7 lbs/hr, 7.4 tpy
CO: 1.3 lbs/hr, 5.7 tpy

Combustion emissions from natural gas use:
NOx: 0.4 lb/hr, 1.5 tpy
CO: 0.35 lb/hr, 1.3 tpy

Combustion emissions from #2 oil use:
NOx: 0.6 lb/hr, 2.0 tpy
SO2: 0.2 lb/hr, 0.7 tpy

Combustion emissions from 'on-spec' waste oil use:
NOx; 0.5 lb/hr, 1.6 tpy
SO2: 1.6 lbs/hr, 5.4 tpy
PM: 1.6 lbs/hr, 5.2 tpy

Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed twenty (20) percent opacity, as a six-minute average.

See Section A.2.a through A.2.e below.

The emission limitation specified by this rule is equivalent to the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a A baghouse shall be in operation during times when raw material is charged to the smelter.

2.b The height of the stack serving this emissions unit shall be at least 36 feet.

2.c The permittee shall use only natural gas, #2 fuel oil, or 'on-spec' waste oil as fuel in this unit. 'Off-spec' used oil shall not be used in this unit.

2.d All waste oil burned in this emissions unit shall meet the following specifications:

Contaminant/Property	Allowable Specifications
arsenic	5 ppm, maximum
cadmium	2 ppm, maximum
chromium	10 ppm, maximum
lead	100 ppm, maximum
PCB's	2 ppm, maximum
total halogens	4,000 ppm, maximum
mercury	1 ppm, maximum
flash point	100 F, minimum
heat content	135,000 BTU/gallon, minimum

2.e The quality of the oil (#2 and/or 'on-spec' waste oil) burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable sulfur dioxide emission limitations specified in Section A.1 above. The application for this PTI reported a sulfur content of 0.05% for #2 oil, and 0.5% for waste oil.

2.f If the permittee is burning used oil with any quantifiable level (above 2 ppm) of PCB's, then the permittee is subject to the notification requirements of 40 CFR 279.62.

2.g On-spec waste oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under 40 CFR Part 266.40(c) and OAC rule 3745-58-50. Therefore, the permittee may receive and burn used oil exceeding 1,000 ppm of total halogens (but less than 2,000 ppm, maximum) only if the supplier ("marketer" in 40 Part CFR 266.43(a)) has demonstrated to the Ohio EPA's Division of Hazardous Waste Management that the used oil does not contain any hazardous waste.

B. Operational Restrictions

1. The maximum heat input for this emissions unit shall not exceed 6.0 mmBTU per hour, the

reported maximum heat rate capacity.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain daily records of the following information:

   a. type of fuel (natural gas, #2 fuel oil, or 'on-spec' waste oil) burned in this emissions unit,
   b. quantity of fuel burned in this emissions unit, (ft^3/day or gallons/day),
   c. the sulfur content (in percent) and heat content (BTU/gal), if #2 fuel oil and/or 'on-spec' waste oil is used that day, and also the ash content (in percent) for 'on-spec' waste oil,
   d. the heat input for this emissions unit (mmBTU/hr),
   e. number of hours (hours/day) this emissions unit was in operation,
   f. identification of the type of raw material, and amounts (weight) of each, charged to this emissions unit, and
   g. total amount (tons) of raw materials charged to this emissions unit.
   h. the average, hourly feed rate (tons/hr) to this emission unit calculated by (g) divided by (e),
   i. if #2 fuel oil and/or 'on-spec' waste oil is used, the average, hourly SO2 emission rate as calculated by the following equation:

      E = EF x 1/HC x HI

      where;

      E = SO2 emission rate in pounds per hour

      EF = Emission factor, taken from AP-42. <u>When using #2 fuel oil,</u> EF = 107(S) lbs/1,000 gallons, taken from Table 1.3-1, where S is the percent sulfur as recorded in (c).* <u>When using 'on-spec' waste oil,</u> EF = 142(S) lbs/1,000 gallons, taken from Table 1.11-2, where S is the percent sulfur as recorded in (c).*

      **If the sulfur percent is 0.05%, S = 0.05.*

      HC = Heat content of oil, in BTU/gallon, as recorded in (c).

      HI = Heat input of emissions unit, in mmBTU/hr, as recorded in (d), and

   j. if 'on-spec' waste oil is used, the average, hourly particulate emission rate as calculated by the following equation:

      E = EF x G

      where;

      E = Emission rate in pounds per hour

      EF = PM Emission factor for waste oil, taken from Table 1.11-1 of AP-42, is

66(A) lbs/1,000 gallons, where A = percent ash in the oil, as recorded in (c).

G = Amount of fuel used in day (in gallons), as recorded in (b), divided by number of operating hours in day, as recorded in (e).

2. The permittee shall perform daily checks, when the emission unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible particulate emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in an operations log:

   a. the color of the emissions,
   b. whether the emissions are representative of normal operations,
   c. if the emissions are not representative of normal operations, the cause of the abnormal emissions,
   d. the total duration of any visible emissions incident, and
   e. any corrective actions taken to eliminate the visible emissions.

3. The permittee shall collect or require the oil supplier to collect a representative grab sample for each shipment of #2 fuel oil and 'on-spec' waste oil that is received for burning in this emissions unit. The permittee shall perform or require the supplier to perform the analysis for sulfur content and heat content in accordance with the following American Society for Testing and Materials (ASTM) methods: ASTM method D4294, ASTM method D240, or ASTM method 6010 for sulfur content; and ASTM method D240 for heat content. Alternative, equivalent methods may be used upon written approval by the appropriate Ohio EPA District Office of local air agency.

4. For each shipment of oil (#2 fuel oil or 'on-spec' waste oil) received for burning in this emissions unit, the permittee shall maintain records of the total quantity of each type of oil received and the permittee's or oil supplier's analysis for sulfur content and heat content.

5. The permittee shall receive a chemical analysis with each shipment of 'on-spec' waste oil from the supplier. The analysis shall identify the name and address of the supplier, the supplier's USEPA identification number (if available), and the following information:

   a. date of shipment or delivery,
   b. quantity of used oil received,
   c. the BTU value of the used oil,
   d. the flash point of the used oil,
   e. the arsenic content,
   f. the cadmium content,
   g. the chromium content,
   h. the lead content,
   i. the PCB content,
   j. the total halogen content,
   k. the mercury content, and

l. the ash content.

Each analysis shall be kept in a readily accessible location for at least 5 years and shall be made available to the Director (the Ohio EPA Northeast District Office) upon verbal or written request. The Director or any authorized representative of the Director may require or may conduct periodic, detailed chemical analyses through an independent laboratory of any 'on-spec' waste oil shipment received by this facility, or any 'on-spec' waste oil stored at this facility.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports each calendar quarter to identify the type, and duration, of any term and condition listed in Sections A.1 and A.2 that was not met during that quarter. The calendar quarters are January 1 - March 31, April 1 - June 30, July 1 - September 30, and October 1 - December 31.

   If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report stating that no deviations occurred during that quarter.

   Quarterly reports shall be submitted to the Ohio EPA, Northeast District Office, by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters.

2. The permittee shall submit to the Ohio EPA, Northeast District Office, on a quarterly basis, copies of the permittee's or oil supplier's analyses for each shipment of #2 fuel oil, and/or 'on-spec' waste oil which is received for burning in this emissions unit, or a letter stating no such fuel was received that quarter. The permittee's or oil supplier's analysis shall include the following:

   a. the total quantity of oil received in each shipment (gallons),
   b. the sulfur content (percent) and heat content (BTU/gallon) for each shipment,
   c. the results of the analyses as described in Section C.5 of this permit for 'on-spec' waste oil.

   These quarterly reports shall be submitted by Janaury 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall notify the USEPA and the Ohio EPA if any of the 'on-spec' waste oil exceeds the 'on-spec' waste oil specifications provided in this permit.

E. Testing Requirements

1. Emission Limitation:
   PM: 1.7 lbs/hour from process operations

Applicable Compliance Method:
If required by the Ohio EPA, compliance with the allowable particulate emission limit from process operations shall be determined in accordance with the following method(s): Methods 1 -5 of 40 CFR Part 60, Appendix A.

2. Emission Limitation:
PM: 7.4 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = A x B x ton/2,000 lbs
where;
E = Emission rate in tons/year
A = Hourly emissions rate in pounds/hour (as determined in Section E.1)
B = Total number of hours the emissions unit was in operation during a calendar year, in hours/year, (calculated by the summation of the daily records kept per Section C.1.e).

3. Emission Limitation:
NOx: 1.7 lbs/hour from process operations

Applicable Compliance Method:
If required by the Ohio EPA, compliance with the allowable NOx emission limit from process operations shall be determined in accordance with the following method: Method 7 of 40 CFR Part 60, Appendix A.

4. Emission Limitation:
NOx: 7.4 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = A x B x ton/2,000 lbs
where;
E = Emission rate in tons per year
A = Hourly emissions rate in pounds/hour (as determined in Section E.3)
B = Total number of hours the emissions unit was in operation during a calendar year, in hours/year, (calculated by the summation of the daily records kept per Section C.1.e)

5. Emission Limitation:

CO: 1.3 lbs/hour from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = EF x C
where;
E = Emission rate in pounds per hour
EF = Emission factor for CO, taken from Table 11.14-1, AP-42 (6/97), is 4.8 lbs CO per ton of feed
C = Amount of feed material charged to the emissions unit, in tons per hour, as recorded in Section C.1.h.

6. Emission Limitation:
CO: 5.7 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = EF x D x ton/2,000 lbs,
where;
E = Emission rate in tons per year
EF = Emission factor for CO, taken from Table 11.14-1, AP-42 (6/97), is 4.8 lbs CO per ton of feed
D = Amount of feed material charged to the emissions unit, in tons per year, calculated as the summation of the daily amounts recorded in Section C.1.g for each calendar year

7. Emission Limitation:
NOx: 0.4 lb/hour from natural gas combustion
0.6 lb/hour from #2 oil combustion
0.5 lb/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with th limit provided for each type of fuel shall be determined by the following equation:
E = EF x G
where;
E = Emission rate in pounds per hour
EF = Emission factors taken from AP-42. When calculating for natural gas, EF = 100 lbs/mmft^3 (Table 1.4-1). When calculating for #2 fuel oil, EF = 20 lbs/1,000 gallons (Table 1.3-1). When calculating for 'on-spec' waste oil, EF = 16 lbs/1,000

gallons (Table 1.11-2).

G = Amount of fuel used in day (in ft^3 or gallons), as recorded in Section C.1.b, divided by number of operating hours in day, as recorded in Section C.1.e

8. Emission Limitation:
NOx: 1.5 tons/year from natural gas combustion
2.0 tons/year from #2 oil combustion
1.6 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of fuel shall be determined by the following equation.

E = EF x J x ton/2,000 lbs

where;

E = Emission rate in tons per year

EF = Emission factors taken from AP-42. When calculating for natural gas, EF = 100 lbs/$mmft^3$ (Table 1.4-1). When calculating for #2 fuel oil, EF = 20 lbs/1,000 gallons (Table 1.3-1). When calculating for 'on-spec' waste oil, EF = 16 lbs/1,000 gallons (Table 1.11-2).

J = Amount of fuel burned (mmft3/yr for natural gas, and gallons/yr for #2 oil and 'on-spec' waste oil) in the emissions unit, calculated as the summation of the daily amounts of each type of fuel burned, as recorded in Section C.1.b, for each calendar year.

9. Emission Limitation:
CO: 0.35 lb/hour from natural gas combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:

E = EF x G

where;

E = Emission rate in pounds per hour

EF = CO Emission factor for natural gas, taken from Table 1.4-1 of AP-42, is 84 lbs/$mmft^3$.

G = Amount of fuel used in day (in ft^3), as recorded in Section C.1.b, divided by number of operating hours in day, as recorded in Section C.1.e

10. Emission Limitation:
CO: 1.3 tons/year from natural gas combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation.

E = EF x J x ton/2,000 lbs

where;

E = Emission rate in tons per year

EF = CO Emission factor for natural gas, taken from Table 1.4-1 of AP-42, is 84 $lbs/mmft^3$.

J = Amount of natural gas burned (in mmft3/yr, when it is burned) in the emissions unit, calculated as the summation of the daily amounts of fuel burned, as recorded in Section C.1.b, for each calendar year

11. Emission Limitation:
SO2: 0.2 lb/hour from #2 oil combustion
1.6 lb/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of fuel shall be determined by the record keeping requirements in Section C.1.i.

12. Emission Limitation:
SO2: 0.7 tons/year from #2 oil combustion
5.4 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of oil shall be determined by the following equation.

E = EF x J x ton/2,000 lbs

where;

E = Emission rate in tons per year

EF = Emission factor, taken from AP-42. When calculating for #2 fuel oil, EF = 107(S) lbs/1,000 gallons, taken from Table 1.3-1, where S is the weighted average percent sulfur.* When calculating for 'on-spec' waste oil, EF = 142(S) lbs/1,000 gallons, taken from Table 1.11-2, where S is the weighted average percent sulfur.*

J = Amount of fuel burned (gallons/yr) in the emissions unit, calculated as the summation of the daily amounts of each type of oil burned, as recorded in Section C.1.b, for each calendar year

*The weighted average percent sulfur of an oil is calculated by multiplying each percent sulfur value by the gallons of oil with that value, adding up all the value-weighted products, and dividing the sum of the value-weighted products by the sum of all the shipment gallons burned during that calendar year. For example; The sum of (0.05)(1,000 gallons oil, at 0.05% sulfur, was burned that year) + (0.10)(2,000 gallons oil, at 0.10 % sulfur, was burned that year) divided by the sum of all the oil burned during the calendar year (1,000 gallons + 2,000 gallons). This example would produce a weighted average percent sulfur of 0.08%, or where S = 0.08. The calculation for #2 oil and 'on-spec' waste oil must be kept separate.

13. Emission Limitation:
PM: 1.6 lbs/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the record keeping requirements in Section C.1.j.

14. Emission Limitation:
PM: 5.2 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation.

E = EF x J x ton/2,000 lbs

where;

E = Emission rate in tons per year

EF = PM Emission factor for waste oil, taken from Table 1.11-1 of AP-42, is 66(A) lbs/1,000 gallons, where A = average weighted percent ash in the oil*

J = Amount of fuel burned (gallons/yr) in the emissions unit, calculated as the summation of the daily amounts of the oil burned, as recorded in Section C.1.b, for each calendar year.

*The weighted average percent ash of the oil is calculated by multiplying each percent ash value by the gallons of oil with that value, adding up all the value-weighted products, and dividing the sum of the value-weighted products by the sum of all the shipment gallons burned during that calendar year. For example; The sum of (0.79)(1,000 gallons oil, at 0.79% ash, was burned that year) + (0.90)(2,000 gallons oil, at 0.90 % ash, was burned that year) divided by the sum of all the oil burned during the calendar year (1,000 gallons + 2,000 gallons). This example would produce a weighted average percent ash of 0.86%, or where A = 0.86.

15. Emission Limitation:
Visible particulate emissions (VE) from the exhaust stack serving this emissions unit shall not exceed twenty (20) percent opacity, as a six-minute average.

Applicable Compliance Method:
If required by the Ohio EPA, compliance with the allowable VE limit shall be determined in accordance with the following method: Method 9 of 40 CFR Part 60, Appendix A.

F. Miscellaneous Requirements

None

Emissions Unit ID: **P004**

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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	Applicable Rules/Requirements	OAC rule 3745-17-07(A)(1)
P004 - Smelter No. 4 for frit production	OAC rule 3745-31-05(A)(3)	

Applicable Emissions
Limitations/Control Measures

Process emissions:
PM: 1.7 lbs/hr, 7.4 tpy
NOx: 1.7 lbs/hr, 7.4 tpy
CO: 1.3 lbs/hr, 5.7 tpy

Combustion emissions from natural gas use:
NOx: 0.4 lb/hr, 1.5 tpy
CO: 0.35 lb/hr, 1.3 tpy

Combustion emissions from #2 oil use:
NOx: 0.6 lb/hr, 2.0 tpy
SO2: 0.2 lb/hr, 0.7 tpy

Combustion emissions from 'on-spec' waste oil use:
NOx; 0.5 lb/hr, 1.6 tpy
SO2: 1.6 lbs/hr, 5.4 tpy
PM: 1.6 lbs/hr, 5.2 tpy

Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed twenty (20) percent opacity, as a six-minute average.

See Section A.2.a through A.2.e below.

The emission limitation specified by this rule is equivalent to the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a A baghouse shall be in operation during times when raw material is charged to the smelter.

2.b The height of the stack serving this emissions unit shall be at least 36 feet.

2.c The permittee shall use only natural gas, #2 fuel oil, or 'on-spec' waste oil as fuel in this unit. 'Off-spec' used oil shall not be used in this unit.

2.d All waste oil burned in this emissions unit shall meet the following specifications:

Contaminant/Property	Allowable Specifications
arsenic	5 ppm, maximum
cadmium	2 ppm, maximum
chromium	10 ppm, maximum
lead	100 ppm, maximum
PCB's	2 ppm, maximum
total halogens	4,000 ppm, maximum
mercury	1 ppm, maximum
flash point	100 F, minimum
heat content	135,000 BTU/gallon, minimum

2.e The quality of the oil (#2 and/or 'on-spec' waste oil) burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable sulfur dioxide emission limitations specified in Section A.1 above. The application for this PTI reported a sulfur content of 0.05% for #2 oil, and 0.5% for waste oil.

2.f If the permittee is burning used oil with any quantifiable level (above 2 ppm) of PCB's, then the permittee is subject to the notification requirements of 40 CFR 279.62.

2.g On-spec waste oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under 40 CFR Part 266.40(c) and OAC rule 3745-58-50. Therefore, the permittee may receive and burn used oil exceeding 1,000 ppm of total halogens (but less than 2,000 ppm, maximum) only if the supplier ("marketer" in 40 Part CFR 266.43(a)) has demonstrated to the Ohio EPA's Division of Hazardous Waste Management that the used oil does not contain any hazardous waste.

B. Operational Restrictions

1. The maximum heat input for this emissions unit shall not exceed 6.0 mmBTU per hour, the reported maximum heat rate capacity.

2. No raw material containing lead or fluorine may be charged to this emissions unit. See also Section F.1.a.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain daily records of the following information:

   a. type of fuel (natural gas, #2 fuel oil, or 'on-spec' waste oil) burned in this emissions unit,
   b. quantity of fuel burned in this emissions unit, (ft^3/day or gallons/day),
   c. the sulfur content (in percent) and heat content (BTU/gal), if #2 fuel oil and/or 'on-spec' waste oil is used that day, and also the ash content (in percent) for 'on-spec' waste oil,
   d. the heat input for this emissions unit (mmBTU/hr),
   e. number of hours (hours/day) this emissions unit was in operation,
   f. identification of the type of raw material, and amounts (weight) of each, charged to this emissions unit, and
   g. total amount (tons) of raw materials charged to this emissions unit.
   h. the average, hourly feed rate (tons/hr) to this emission unit calculated by (g) divided by (e),
   i. if #2 fuel oil and/or 'on-spec' waste oil is used, the average, hourly SO2 emission rate as calculated by the following equation:

      E = EF x 1/HC x HI

      where;

      E = SO2 emission rate in pounds per hour

      EF = Emission factor, taken from AP-42. <u>When using #2 fuel oil,</u> EF = 107(S) lbs/1,000 gallons, taken from Table 1.3-1, where S is the percent sulfur as recorded in (c).* <u>When using 'on-spec' waste oil,</u> EF = 142(S) lbs/1,000 gallons, taken from Table 1.11-2, where S is the percent sulfur as recorded in (c).*

      *If the sulfur percent is 0.05%, S = 0.05.

      HC = Heat content of oil, in BTU/gallon, as recorded in (c).

      HI = Heat input of emissions unit, in mmBTU/hr, as recorded in (d), and

   j. if 'on-spec' waste oil is used, the average, hourly particulate emission rate as calculated by the following equation:

      E = EF x G

where;

E	=	Emission rate in pounds per hour
EF	=	PM Emission factor for waste oil, taken from Table 1.11-1 of AP-42, is 66(A) lbs/1,000 gallons, where A = percent ash in the oil, as recorded in (c).
G	=	Amount of fuel used in day (in gallons), as recorded in (b), divided by number of operating hours in day, as recorded in (e).

2. The permittee shall perform daily checks, when the emission unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible particulate emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in an operations log:

   a. the color of the emissions,
   b. whether the emissions are representative of normal operations,
   c. if the emissions are not representative of normal operations, the cause of the abnormal emissions,
   d. the total duration of any visible emissions incident, and
   e. any corrective actions taken to eliminate the visible emissions.

3. The permittee shall collect or require the oil supplier to collect a representative grab sample for each shipment of #2 fuel oil and 'on-spec' waste oil that is received for burning in this emissions unit. The permittee shall perform or require the supplier to perform the analysis for sulfur content and heat content in accordance with the following American Society for Testing and Materials (ASTM) methods: ASTM method D4294, ASTM method D240, or ASTM method 6010 for sulfur content; and ASTM method D240 for heat content. Alternative, equivalent methods may be used upon written approval by the appropriate Ohio EPA District Office of local air agency.

4. For each shipment of oil (#2 fuel oil or 'on-spec' waste oil) received for burning in this emissions unit, the permittee shall maintain records of the total quantity of each type of oil received and the permittee's or oil supplier's analysis for sulfur content and heat content.

5. The permittee shall receive a chemical analysis with each shipment of 'on-spec' waste oil from the supplier. The analysis shall identify the name and address of the supplier, the supplier's USEPA identification number (if available), and the following information:

   a. date of shipment or delivery,
   b. quantity of used oil received,
   c. the BTU value of the used oil,
   d. the flash point of the used oil,

e. the arsenic content,
f. the cadmium content,
g. the chromium content,
h. the lead content,
i. the PCB content,
j. the total halogen content,
k. the mercury content, and
l. the ash content.

Each analysis shall be kept in a readily accessible location for at least 5 years and shall be made available to the Director (the Ohio EPA Northeast District Office) upon verbal or written request. The Director or any authorized representative of the Director may require or may conduct periodic, detailed chemical analyses through an independent laboratory of any 'on-spec' waste oil shipment received by this facility, or any 'on-spec' waste oil stored at this facility.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports each calendar quarter to identify the type, and duration, of any term and condition listed in Sections A.1 and A.2 that was not met during that quarter. The calendar quarters are January 1 - March 31, April 1 - June 30, July 1 - September 30, and October 1 - December 31.

   If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report stating that no deviations occurred during that quarter.

   Quarterly reports shall be submitted to the Ohio EPA, Northeast District Office, by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters.

2. The permittee shall submit to the Ohio EPA, Northeast District Office, on a quarterly basis, copies of the permittee's or oil supplier's analyses for each shipment of #2 fuel oil, and/or 'on-spec' waste oil which is received for burning in this emissions unit, or a letter stating no such fuel was received that quarter. The permittee's or oil supplier's analysis shall include the following:

   a. the total quantity of oil received in each shipment (gallons),
   b. the sulfur content (percent) and heat content (BTU/gallon) for each shipment,
   c. the results of the analyses as described in Section C.5 of this permit for 'on-spec' waste oil.

   These quarterly reports shall be submitted by Janaury 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall notify the USEPA and the Ohio EPA if any of the 'on-spec' waste oil exceeds

the 'on-spec' waste oil specifications provided in this permit.

E. Testing Requirements

1. Emission Limitation:
PM: 1.7 lbs/hour from process operations

Applicable Compliance Method:
Compliance with the allowable particulate emission limit from process operations shall be determined in accordance with the following methods: Methods 1 -5 of 40 CFR Part 60, Appendix A, within 180 days of start-up of operation.

2. Emission Limitation:
PM: 7.4 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = A x B x ton/2,000 lbs
where;
E = Emission rate in tons/year
A = Hourly emissions rate in pounds/hour (as determined in Section E.1)
B = Total number of hours the emissions unit was in operation during a calendar year, in hours/year, (calculated by the summation of the daily records kept per Section C.1.e).

3. Emission Limitation:
NOx: 1.7 lbs/hour from process operations

Applicable Compliance Method:
Compliance with the allowable NOx emission limit from process operations shall be determined in accordance with the following method: Method 7 of 40 CFR Part 60, Appendix A, within 180 days of start-up of operation.

4. Emission Limitation:
NOx: 7.4 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = A x B x ton/2,000 lbs
where;
E = Emission rate in tons per year

A = Hourly emissions rate in pounds/hour (as determined in Section E.3)
B = Total number of hours the emissions unit was in operation during a calendar year, in hours/year, (calculated by the summation of the daily records kept per Section C.1.e)

5. Emission Limitation:
CO: 1.3 lbs/hour from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = EF x C
where;
E = Emission rate in pounds per hour
EF = Emission factor for CO, taken from Table 11.14-1, AP-42 (6/97), is 4.8 lbs CO per ton of feed
C = Amount of feed material charged to the emissions unit, in tons per hour, as recorded in Section C.1.h.

6. Emission Limitation:
CO: 5.7 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = EF x D x ton/2,000 lbs,
where;
E = Emission rate in tons per year
EF = Emission factor for CO, taken from Table 11.14-1, AP-42 (6/97), is 4.8 lbs CO per ton of feed
D = Amount of feed material charged to the emissions unit, in tons per year, calculated as the summation of the daily amounts recorded in Section C.1.g for each calendar year

7. Emission Limitation:
NOx: 0.4 lb/hour from natural gas combustion
0.6 lb/hour from #2 oil combustion
0.5 lb/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with th limit provided for each type of fuel shall be determined by the following equation:

E = EF x G
where;
E = Emission rate in pounds per hour
EF = Emission factors taken from AP-42. When calculating for natural gas, EF = 100 lbs/mmft^3 (Table 1.4-1). When calculating for #2 fuel oil, EF = 20 lbs/1,000 gallons (Table 1.3-1). When calculating for 'on-spec' waste oil, EF = 16 lbs/1,000 gallons (Table 1.11-2).
G = Amount of fuel used in day (in ft^3 or gallons), as recorded in Section C.1.b, divided by number of operating hours in day, as recorded in Section C.1.e

8. Emission Limitation:
NOx: 1.5 tons/year from natural gas combustion
2.0 tons/year from #2 oil combustion
1.6 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of fuel shall be determined by the following equation.
E = EF x J x ton/2,000 lbs
where;
E = Emission rate in tons per year
EF = Emission factors taken from AP-42. When calculating for natural gas, EF = 100 lbs/mmft^3 (Table 1.4-1). When calculating for #2 fuel oil, EF = 20 lbs/1,000 gallons (Table 1.3-1). When calculating for 'on-spec' waste oil, EF = 16 lbs/1,000 gallons (Table 1.11-2).
J = Amount of fuel burned (mmft3/yr for natural gas, and gallons/yr for #2 oil and 'on-spec' waste oil) in the emissions unit, calculated as the summation of the daily amounts of each type of fuel burned, as recorded in Section C.1.b, for each calendar year.

9. Emission Limitation:
CO: 0.35 lb/hour from natural gas combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = EF x G
where;
E = Emission rate in pounds per hour
EF = CO Emission factor for natural gas, taken from Table 1.4-1 of AP-42, is 84 lbs/mmft^3.
G = Amount of fuel used in day (in ft^3), as recorded in Section C.1.b, divided by

number of operating hours in day, as recorded in Section C.1.e

10. Emission Limitation:
CO: 1.3 tons/year from natural gas combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation.
E = EF x J x ton/2,000 lbs
where;
E = Emission rate in tons per year
EF = CO Emission factor for natural gas, taken from Table 1.4-1 of AP-42, is 84 lbs/mmft^3.
J = Amount of natural gas burned (in mmft3/yr, when it is burned) in the emissions unit, calculated as the summation of the daily amounts of fuel burned, as recorded in Section C.1.b, for each calendar year

11. Emission Limitation:
SO2: 0.2 lb/hour from #2 oil combustion
1.6 lb/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of fuel shall be determined by the record keeping requirements in Section C.1.i.

12. Emission Limitation:
SO2: 0.7 tons/year from #2 oil combustion
5.4 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of oil shall be determined by the following equation.
E = EF x J x ton/2,000 lbs
where;
E = Emission rate in tons per year
EF = Emission factor, taken from AP-42. When calculating for #2 fuel oil, EF = 107(S) lbs/1,000 gallons, taken from Table 1.3-1, where S is the weighted average percent sulfur.* When calculating for 'on-spec' waste oil, EF = 142(S) lbs/1,000 gallons, taken from Table 1.11-2, where S is the weighted average percent sulfur.*
J = Amount of fuel burned (gallons/yr) in the emissions unit, calculated as the

summation of the daily amounts of each type of oil burned, as recorded in Section C.1.b, for each calendar year

*The weighted average percent sulfur of an oil is calculated by multiplying each percent sulfur value by the gallons of oil with that value, adding up all the value-weighted products, and dividing the sum of the value-weighted products by the sum of all the shipment gallons burned during that calendar year. For example; The sum of (0.05)(1,000 gallons oil, at 0.05% sulfur, was burned that year) + (0.10)(2,000 gallons oil, at 0.10 % sulfur, was burned that year) divided by the sum of all the oil burned during the calendar year (1,000 gallons + 2,000 gallons). This example would produce a weighted average percent sulfur of 0.08%, or where S = 0.08. The calculation for #2 oil and 'on-spec' waste oil must be kept separate.

13. Emission Limitation:
PM: 1.6 lbs/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the record keeping requirements in Section C.1.j.

14. Emission Limitation:
PM: 5.2 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation.

E = EF x J x ton/2,000 lbs

where;

E = Emission rate in tons per year

EF = PM Emission factor for waste oil, taken from Table 1.11-1 of AP-42, is 66(A) lbs/1,000 gallons, where A = average weighted percent ash in the oil*

J = Amount of fuel burned (gallons/yr) in the emissions unit, calculated as the summation of the daily amounts of the oil burned, as recorded in Section C.1.b, for each calendar year.

*The weighted average percent ash of the oil is calculated by multiplying each percent ash value by the gallons of oil with that value, adding up all the value-weighted products, and dividing the sum of the value-weighted products by the sum of all the shipment gallons burned during that calendar year. For example; The sum of (0.79)(1,000 gallons oil, at 0.79% ash, was burned that year) + (0.90)(2,000 gallons oil, at 0.90 % ash, was burned that year) divided by the sum of all the oil burned during the calendar year (1,000 gallons + 2,000 gallons). This example would produce a weighted average percent ash of 0.86%, or where A = 0.86.

15. Emission Limitation:
Visible particulate emissions (VE) from the exhaust stack serving this emissions unit shall not exceed twenty (20) percent opacity, as a six-minute average.

Applicable Compliance Method:
If required by the Ohio EPA, compliance with the allowable VE limit shall be determined in accordance with the following method: Method 9 of 40 CFR Part 60, Appendix A.

16. All of the emission tests shall be conducted while the emissions unit is operating at or near its maximum heat rate capacity.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test, and the person(s) who will be conducting the test. Failure to submit such notification for review and approval prior to the test may result in the Ohio EPA, Northeast Office's refusal to accept the results of the emission test.

Personnel from the Ohio EPA, Northeast District Office shall be permitteed to witness the test, examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test shall be signed by the person or persons responsible for the test and submitted to the Ohio EPA, Northeast District Office within 30 days following completion of the test. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, Northeast District Office.

The results generated from the emission test shall be compared to the summation of the process and combustion limitations.

F. Miscellaneous Requirements

1. The requirements contained in this Permit to Install (#02-17607) supercedes the requirements contained in a previous PTI (# 17-1299) for this emissions unit (P004), except for the following:

   a. No raw material containing lead or fluorine may be charged to this emissions unit.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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	Applicable Rules/Requirements	OAC rule 3745-17-07(A)(1)
P005 - Smelter No. 2 for frit production	OAC rule 3745-31-05(A)(3)	

Applicable Emissions
Limitations/Control Measures

Process emissions:
PM: 1.7 lbs/hr, 7.4 tpy
NOx: 1.7 lbs/hr, 7.4 tpy
CO: 1.3 lbs/hr, 5.7 tpy

Combustion emissions from natural gas use:
NOx: 0.4 lb/hr, 1.5 tpy
CO: 0.35 lb/hr, 1.3 tpy

Combustion emissions from #2 oil use:
NOx: 0.6 lb/hr, 2.0 tpy
SO2: 0.2 lb/hr, 0.7 tpy

Combustion emissions from 'on-spec' waste oil use:
NOx; 0.5 lb/hr, 1.6 tpy
SO2: 1.6 lbs/hr, 5.4 tpy
PM: 1.6 lbs/hr, 5.2 tpy

Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed twenty (20) percent opacity, as a six-minute average.

See Section A.2.a through A.2.e below.

The emission limitation specified by this rule is equivalent to the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a A baghouse shall be in operation during times when raw material is charged to the smelter.

2.b The height of the stack serving this emissions unit shall be at least 36 feet.

2.c The permittee shall use only natural gas, #2 fuel oil, or 'on-spec' waste oil as fuel in this unit. 'Off-spec' used oil shall not be used in this unit.

2.d All waste oil burned in this emissions unit shall meet the following specifications:

Contaminant/Property	Allowable Specifications
arsenic	5 ppm, maximum
cadmium	2 ppm, maximum
chromium	10 ppm, maximum
lead	100 ppm, maximum
PCB's	2 ppm, maximum
total halogens	4,000 ppm, maximum
mercury	1 ppm, maximum
flash point	100 F, minimum
heat content	135,000 BTU/gallon, minimum

2.e The quality of the oil (#2 and/or 'on-spec' waste oil) burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable sulfur dioxide emission limitations specified in Section A.1 above. The application for this PTI reported a sulfur content of 0.05% for #2 oil, and 0.5% for waste oil.

2.f If the permittee is burning used oil with any quantifiable level (above 2 ppm) of PCB's, then the permittee is subject to the notification requirements of 40 CFR 279.62.

2.g On-spec waste oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under 40 CFR Part 266.40(c) and OAC rule 3745-58-50. Therefore, the permittee may receive and burn used oil exceeding 1,000 ppm of total halogens (but less than 2,000 ppm, maximum) only if the supplier ("marketer" in 40 Part CFR 266.43(a)) has demonstrated to the Ohio EPA's Division of Hazardous Waste Management that the used oil does not contain any hazardous waste.

B. Operational Restrictions

1. The maximum heat input for this emissions unit shall not exceed 6.0 mmBTU per hour, the reported maximum heat rate capacity.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain daily records of the following information:

   a. type of fuel (natural gas, #2 fuel oil, or 'on-spec' waste oil) burned in this emissions unit,
   b. quantity of fuel burned in this emissions unit, (ft^3/day or gallons/day),
   c. the sulfur content (in percent) and heat content (BTU/gal), if #2 fuel oil and/or 'on-spec' waste oil is used that day, and also the ash content (in percent) for 'on-spec' waste oil,
   d. the heat input for this emissions unit (mmBTU/hr),
   e. number of hours (hours/day) this emissions unit was in operation,
   f. identification of the type of raw material, and amounts (weight) of each, charged to this emissions unit, and
   g. total amount (tons) of raw materials charged to this emissions unit.
   h. the average, hourly feed rate (tons/hr) to this emission unit calculated by (g) divided by (e),
   i. if #2 fuel oil and/or 'on-spec' waste oil is used, the average, hourly SO2 emission rate as calculated by the following equation:

      E = EF x 1/HC x HI

      where;

      E = SO2 emission rate in pounds per hour

      EF = Emission factor, taken from AP-42. <u>When using #2 fuel oil,</u> EF = 107(S) lbs/1,000 gallons, taken from Table 1.3-1, where S is the percent sulfur as recorded in (c).* <u>When using 'on-spec' waste oil,</u> EF = 142(S) lbs/1,000 gallons, taken from Table 1.11-2, where S is the percent sulfur as recorded in (c).*

      **If the sulfur percent is 0.05%, S = 0.05.*

      HC = Heat content of oil, in BTU/gallon, as recorded in (c).

      HI = Heat input of emissions unit, in mmBTU/hr, as recorded in (d), and

   j. if 'on-spec' waste oil is used, the average, hourly particulate emission rate as calculated by the following equation:

      E = EF x G

      where;

      E = Emission rate in pounds per hour

      EF = PM Emission factor for waste oil, taken from Table 1.11-1 of AP-42, is

66(A) lbs/1,000 gallons, where A = percent ash in the oil, as recorded in (c).

G = Amount of fuel used in day (in gallons), as recorded in (b), divided by number of operating hours in day, as recorded in (e).

2. The permittee shall perform daily checks, when the emission unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible particulate emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in an operations log:

   a. the color of the emissions,
   b. whether the emissions are representative of normal operations,
   c. if the emissions are not representative of normal operations, the cause of the abnormal emissions,
   d. the total duration of any visible emissions incident, and
   e. any corrective actions taken to eliminate the visible emissions.

3. The permittee shall collect or require the oil supplier to collect a representative grab sample for each shipment of #2 fuel oil and 'on-spec' waste oil that is received for burning in this emissions unit. The permittee shall perform or require the supplier to perform the analysis for sulfur content and heat content in accordance with the following American Society for Testing and Materials (ASTM) methods: ASTM method D4294, ASTM method D240, or ASTM method 6010 for sulfur content; and ASTM method D240 for heat content. Alternative, equivalent methods may be used upon written approval by the appropriate Ohio EPA District Office of local air agency.

4. For each shipment of oil (#2 fuel oil or 'on-spec' waste oil) received for burning in this emissions unit, the permittee shall maintain records of the total quantity of each type of oil received and the permittee's or oil supplier's analysis for sulfur content and heat content.

5. The permittee shall receive a chemical analysis with each shipment of 'on-spec' waste oil from the supplier. The analysis shall identify the name and address of the supplier, the supplier's USEPA identification number (if available), and the following information:

   a. date of shipment or delivery,
   b. quantity of used oil received,
   c. the BTU value of the used oil,
   d. the flash point of the used oil,
   e. the arsenic content,
   f. the cadmium content,
   g. the chromium content,

h. the lead content,
i. the PCB content,
j. the total halogen content,
k. the mercury content, and
l. the ash content.

Each analysis shall be kept in a readily accessible location for at least 5 years and shall be made available to the Director (the Ohio EPA Northeast District Office) upon verbal or written request. The Director or any authorized representative of the Director may require or may conduct periodic, detailed chemical analyses through an independent laboratory of any 'on-spec' waste oil shipment received by this facility, or any 'on-spec' waste oil stored at this facility.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports each calendar quarter to identify the type, and duration, of any term and condition listed in Sections A.1 and A.2 that was not met during that quarter. The calendar quarters are January 1 - March 31, April 1 - June 30, July 1 - September 30, and October 1 - December 31.

   If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report stating that no deviations occurred during that quarter.

   Quarterly reports shall be submitted to the Ohio EPA, Northeast District Office, by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters.

2. The permittee shall submit to the Ohio EPA, Northeast District Office, on a quarterly basis, copies of the permittee's or oil supplier's analyses for each shipment of #2 fuel oil, and/or 'on-spec' waste oil which is received for burning in this emissions unit, or a letter stating no such fuel was received that quarter. The permittee's or oil supplier's analysis shall include the following:

   a. the total quantity of oil received in each shipment (gallons),
   b. the sulfur content (percent) and heat content (BTU/gallon) for each shipment,
   c. the results of the analyses as described in Section C.5 of this permit for 'on-spec' waste oil.

   These quarterly reports shall be submitted by Janaury 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall notify the USEPA and the Ohio EPA if any of the 'on-spec' waste oil exceeds the 'on-spec' waste oil specifications provided in this permit.

E. Testing Requirements

1. Emission Limitation:
   PM: 1.7 lbs/hour from process operations

   Applicable Compliance Method:
   If required by the Ohio EPA, compliance with the allowable particulate emission limit from process operations shall be determined in accordance with the following method(s): Methods 1 -5 of 40 CFR Part 60, Appendix A.

2. Emission Limitation:
   PM: 7.4 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = A x B x ton/2,000 lbs
where;
E = Emission rate in tons/year
A = Hourly emissions rate in pounds/hour (as determined in Section E.1)
B = Total number of hours the emissions unit was in operation during a calendar year, in hours/year, (calculated by the summation of the daily records kept per Section C.1.e).

3. Emission Limitation:
NOx: 1.7 lbs/hour from process operations

Applicable Compliance Method:
If required by the Ohio EPA, compliance with the allowable NOx emission limit from process operations shall be determined in accordance with the following method: Method 7 of 40 CFR Part 60, Appendix A.

4. Emission Limitation:
NOx: 7.4 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = A x B x ton/2,000 lbs
where;
E = Emission rate in tons per year
A = Hourly emissions rate in pounds/hour (as determined in Section E.3)
B = Total number of hours the emissions unit was in operation during a calendar year, in hours/year, (calculated by the summation of the daily records kept per Section C.1.e)

5. Emission Limitation:
CO: 1.3 lbs/hour from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = EF x C
where;
E = Emission rate in pounds per hour

EF = Emission factor for CO, taken from Table 11.14-1, AP-42 (6/97), is 4.8 lbs CO per ton of feed

C = Amount of feed material charged to the emissions unit, in tons per hour, as recorded in Section C.1.h.

6. Emission Limitation:
CO: 5.7 tons/year from process operations

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:
E = EF x D x ton/2,000 lbs,
where;
E = Emission rate in tons per year
EF = Emission factor for CO, taken from Table 11.14-1, AP-42 (6/97), is 4.8 lbs CO per ton of feed
D = Amount of feed material charged to the emissions unit, in tons per year, calculated as the summation of the daily amounts recorded in Section C.1.g for each calendar year

7. Emission Limitation:
NOx: 0.4 lb/hour from natural gas combustion
0.6 lb/hour from #2 oil combustion
0.5 lb/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with th limit provided for each type of fuel shall be determined by the following equation:
E = EF x G
where;
E = Emission rate in pounds per hour
EF = Emission factors taken from AP-42. When calculating for natural gas, EF = 100 lbs/mmft^3 (Table 1.4-1). When calculating for #2 fuel oil, EF = 20 lbs/1,000 gallons (Table 1.3-1). When calculating for 'on-spec' waste oil, EF = 16 lbs/1,000 gallons (Table 1.11-2).
G = Amount of fuel used in day (in ft^3 or gallons), as recorded in Section C.1.b, divided by number of operating hours in day, as recorded in Section C.1.e

8. Emission Limitation:
NOx: 1.5 tons/year from natural gas combustion
2.0 tons/year from #2 oil combustion
1.6 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of fuel shall be determined by the following equation.

E = EF x J x ton/2,000 lbs

where;

E = Emission rate in tons per year

EF = Emission factors taken from AP-42. When calculating for natural gas, EF = 100 lbs/mmft^3 (Table 1.4-1). When calculating for #2 fuel oil, EF = 20 lbs/1,000 gallons (Table 1.3-1). When calculating for 'on-spec' waste oil, EF = 16 lbs/1,000 gallons (Table 1.11-2).

J = Amount of fuel burned (mmft3/yr for natural gas, and gallons/yr for #2 oil and 'on-spec' waste oil) in the emissions unit, calculated as the summation of the daily amounts of each type of fuel burned, as recorded in Section C.1.b, for each calendar year.

9. Emission Limitation:
CO: 0.35 lb/hour from natural gas combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation:

E = EF x G

where;

E = Emission rate in pounds per hour

EF = CO Emission factor for natural gas, taken from Table 1.4-1 of AP-42, is 84 lbs/mmft^3.

G = Amount of fuel used in day (in ft^3), as recorded in Section C.1.b, divided by number of operating hours in day, as recorded in Section C.1.e

10. Emission Limitation:
CO: 1.3 tons/year from natural gas combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation.

E = EF x J x ton/2,000 lbs

where;

E = Emission rate in tons per year

EF = CO Emission factor for natural gas, taken from Table 1.4-1 of AP-42, is 84 lbs/mmft^3.

J = Amount of natural gas burned (in mmft3/yr, when it is burned) in the emissions unit, calculated as the summation of the daily amounts of fuel burned, as recorded

in Section C.1.b, for each calendar year

11. Emission Limitation:
SO2: 0.2 lb/hour from #2 oil combustion
1.6 lb/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of fuel shall be determined by the record keeping requirements in Section C.1.i.

12. Emission Limitation:
SO2: 0.7 tons/year from #2 oil combustion
5.4 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with the limit provided for each type of oil shall be determined by the following equation.

E = EF x J x ton/2,000 lbs

where;

E = Emission rate in tons per year

EF = Emission factor, taken from AP-42. When calculating for #2 fuel oil, EF = 107(S) lbs/1,000 gallons, taken from Table 1.3-1, where S is the weighted average percent sulfur.* When calculating for 'on-spec' waste oil, EF = 142(S) lbs/1,000 gallons, taken from Table 1.11-2, where S is the weighted average percent sulfur.*

J = Amount of fuel burned (gallons/yr) in the emissions unit, calculated as the summation of the daily amounts of each type of oil burned, as recorded in Section C.1.b, for each calendar year

*The weighted average percent sulfur of an oil is calculated by multiplying each percent sulfur value by the gallons of oil with that value, adding up all the value-weighted products, and dividing the sum of the value-weighted products by the sum of all the shipment gallons burned during that calendar year. For example; The sum of (0.05)(1,000 gallons oil, at 0.05% sulfur, was burned that year) + (0.10)(2,000 gallons oil, at 0.10 % sulfur, was burned that year) divided by the sum of all the oil burned during the calendar year (1,000 gallons + 2,000 gallons). This example would produce a weighted average percent sulfur of 0.08%, or where S = 0.08. The calculation for #2 oil and 'on-spec' waste oil must be kept separate.

13. Emission Limitation:
PM: 1.6 lbs/hour from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the record keeping requirements in Section C.1.j.

14. Emission Limitation:
PM: 5.2 tons/year from 'on-spec' waste oil combustion

Applicable Compliance Method:
Compliance with this limit shall be determined by the following equation.
E = EF x J x ton/2,000 lbs
where;
E = Emission rate in tons per year
EF = PM Emission factor for waste oil, taken from Table 1.11-1 of AP-42, is 66(A) lbs/1,000 gallons, where A = average weighted percent ash in the oil*
J = Amount of fuel burned (gallons/yr) in the emissions unit, calculated as the summation of the daily amounts of the oil burned, as recorded in Section C.1.b, for each calendar year.

*The weighted average percent ash of the oil is calculated by multiplying each percent ash value by the gallons of oil with that value, adding up all the value-weighted products, and dividing the sum of the value-weighted products by the sum of all the shipment gallons burned during that calendar year. For example; The sum of (0.79)(1,000 gallons oil, at 0.79% ash, was burned that year) + (0.90)(2,000 gallons oil, at 0.90 % ash, was burned that year) divided by the sum of all the oil burned during the calendar year (1,000 gallons + 2,000 gallons). This example would produce a weighted average percent ash of 0.86%, or where A = 0.86.

15. Emission Limitation:
Visible particulate emissions (VE) from the exhaust stack serving this emissions unit shall not exceed twenty (20) percent opacity, as a six-minute average.

Applicable Compliance Method:
If required by the Ohio EPA, compliance with the allowable VE limit shall be determined in accordance with the following method: Method 9 of 40 CFR Part 60, Appendix A.

F. Miscellaneous Requirements

None