OhioEPA

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Interim Director

2/12/2014

Certified Mail

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MODELING SUBMITTED
No	SYNTHETIC MINOR TO AVOID TITLE V
No	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Mr. Joe Danneker
Skye Metal Recovery Inc
5513 Regency Oaks Drive N.
Mobile, AL 36609

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 0684005004
Permit Number: P0115851
Permit Type: Administrative Modification
County: Washington

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install and Operate (PTIO)for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of 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 permit. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, The Marietta Times. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page,www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall
Permit Review/Development Section
Ohio EPA, DAPC
50 West Town Street Suite 700
PO Box 1049
Columbus, Ohio 43216-1049

and

Ohio EPA DAPC, Southeast District Office
2195 Front Street
Logan, OH 43138

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Ohio EPA DAPC, Southeast District Office at (740)385-8501.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA Region 5 *Via E-Mail Notification*
Ohio EPA-SEDO; Pennsylvania; West Virginia

PUBLIC NOTICE
2/12/2014 Issuance of Draft Air Pollution Permit-To-Install and Operate

Skye Metal Recovery Inc
217 Blue Knob Rd,
Marietta, OH 45750
Washington County
FACILITY DESC.: Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)
PERMIT #: P0115851
PERMIT TYPE: Administrative Modification
PERMIT DESC: Processing of spent nickel catalyst, metal grindings, F material and K material - including hoppers, conveyors, crusher, screener, bagging system and kiln with associated control equipment (Administrative Modification to FEPTIO P0112217 issued 6/17/2013 for the following purposed: correct the maximum operating rate for Metal Grindings from 3 TPH to 6 TPH; correct the permit to indicate that the operation of the afterburner will only be required when processing material containing VOC; clarify which pieces of equipment are located inside of a building; correct calculations within the permit as a result of making the above changes; correct minor typos and mistakes; correct the maximum kiln exhaust temperature when not processing VOC containing materials; and to ensure a full thirty-day comment period for the entire issued permit).

The Director of the Ohio Environmental Protection Agency issued the draft permit above. The permit and complete instructions for requesting information or submitting comments may be obtained at: http://epa.ohio.gov/dapc/permitsonline.aspx by entering the permit # or: Christina Wieg, Ohio EPA DAPC, Southeast District Office, 2195 Front Street, Logan, OH 43138. Ph: (740)385-8501

DRAFT

Division of Air Pollution Control
Permit-to-Install and Operate
for
Skye Metal Recovery Inc

Facility ID:	0684005004
Permit Number:	P0115851
Permit Type:	Administrative Modification
Issued:	2/12/2014
Effective:	To be entered upon final issuance
Expiration:	To be entered upon final issuance

Division of Air Pollution Control
Permit-to-Install and Operate
for
Skye Metal Recovery Inc

Table of Contents

Authorization

Facility ID: 0684005004
Application Number(s): M0002381
Permit Number: P0115851
Permit Description: Processing of spent nickel catalyst, metal grindings, F material and K material - including hoppers, conveyors, crusher, screener, bagging system and kiln with associated control equipment (Administrative Modification to FEPTIO P0112217 issued 6/17/2013 for the following purposed: correct the maximum operating rate for Metal Grindings from 3 TPH to 6 TPH; correct the permit to indicate that the operation of the afterburner will only be required when processing material containing VOC; clarify which pieces of equipment are located inside of a building; correct calculations within the permit as a result of making the above changes; correct minor typos and mistakes; correct the maximum kiln exhaust temperature when not processing VOC containing materials; and to ensure a full thirty-day comment period for the entire issued permit).
Permit Type: Administrative Modification
Permit Fee: $0.00*DO NOT send payment at this time, subject to change before final issuance*
Issue Date: 2/12/2014
Effective Date: To be entered upon final issuance
Expiration Date: To be entered upon final issuance
Permit Evaluation Report (PER) Annual Date: To be entered upon final issuance

This document constitutes issuance to:

Skye Metal Recovery Inc
217 Blue Knob Rd
Marietta, OH 45750

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Southeast District Office
2195 Front Street
Logan, OH 43138
(740)385-8501

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s))listed in this section 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 described emissions unit(s) will operate in compliance with applicable State and Federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Craig W. Butler
Interim Director

Authorization (continued)

Permit Number: P0115851
Permit Description: Processing of spent nickel catalyst, metal grindings, F material and K material - including hoppers, conveyors, crusher, screener, bagging system and kiln with associated control equipment (Administrative Modification to FEPTIO P0112217 issued 6/17/2013 for the following purposed: correct the maximum operating rate for Metal Grindings from 3 TPH to 6 TPH; correct the permit to indicate that the operation of the afterburner will only be required when processing material containing VOC; clarify which pieces of equipment are located inside of a building; correct calculations within the permit as a result of making the above changes; correct minor typos and mistakes; correct the maximum kiln exhaust temperature when not processing VOC containing materials; and to ensure a full thirty-day comment period for the entire issued permit).

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	**P901**
Company Equipment ID:	1S
Superseded Permit Number:	P0112217
General Permit Category and Type:	Not Applicable

A. Standard Terms and Conditions

1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

- PTIO fee.This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

  You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

- Annual emissions fee.Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is

very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions of this permit will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.

10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Ohio EPA DAPC, Southeast District Office in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. “Shut down” means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as beingpermanently shut down without first applying for and obtaining a permit pursuantto OAC Chapter 3745-31.

13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the

change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.

B. Facility-Wide Terms and Conditions

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

   a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

      (1) None.

   b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

      (1) None.

C. Emissions Unit Terms and Conditions

1. P901, Processing of spent nickel catalyst and metal grindings

Operations, Property and/or Equipment Description:

Processing of spent nickel catalyst (maximum processing rate of 3 TPH), metal grindings (maximum processing rate of 6 TPH), F material (maximum processing rate of 6 TPH) and K material (maximum processing rate of 3 TPH) – includes 1 hopper, 4 conveyors (not used when processing K or F material), 1 drag conveyor (not used when processing K or F material), 2 screw conveyors, 1 screener (not used when processing K or F material), 1 crusher (not used when processing K or F material), 1 mixing auger with bagging station/roll off box station, and 20 mmBtu/hr natural gas fired kiln (kiln combustion and process gasses are controlled by a baghouse, cyclone, quench tower and 89 mmBtu/hr natural gas fired afterburner and scrubber). The use of the scrubber is only required when processing K material and the use of the afterburner is only required when processing volatile organic compound containing material. (Administrative Modification to FEPTIO P0112217 issued 6/17/2013 for the following purposes: correct terms and conditions from a synthetic minor format to a state-only restriction format based on corrected PTE; correct the maximum operating rate for Metal Grindings from 3 TPH to 6 TPH; correct the permit to indicate that the operation of the afterburner will only be required when processing material containing VOC; clarify which pieces of equipment are located inside of a building; correct calculations within the permit as a result of making the above changes; correct minor typos and mistakes; correct the maximum kiln exhaust temperature when not processing VOC containing materials; and to ensure a full thirty-day comment period for the entire issued permit).

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

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. g)(1).

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T)	When processing spent nickel catalyst

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		(SNC) material, Metal Grindings (MG) material, or K material, carbon monoxide (CO) combustion emissions from the kiln and afterburner combined shall not exceed 0.16 lb/mmBtu. When processing F material, CO combustion emissions from the kiln shall not exceed 0.08 lb/mmBtu. When processing SNC material or K material, nitrogen oxide (NO_x) emissions from the stack shall not exceed 4.42 lbs/ton. When processing MG material, NO_x emissions from the stack shall not exceed 2.64 lbs/ton. When processing F material, NO_x emissions from the stack shall not exceed 1.19 lbs/ton. When processing SNC material, volatile organic compound (VOC) emissions from the stack shall not exceed 14.88 lbs/hr. When processing MG material, VOC emissions from the stack shall not exceed 2.28 lbs/hr. When processing F material, VOC emissions from the stack shall not exceed 0.11 lb/hr. When processing K material, VOC emissions from the stack shall not exceed 2.28 lbs/hr. When processing SNC material orMG material, Sulfur dioxide (SO_2) emissions shall not exceed 0.001 lb/mmBtu. When processing F material, SO_2 emissions shall not exceed 0.001 lb/mmBtu.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		When processing K material, SO_2 emissions shall not exceed 4.80 lbs per ton.
b.	OAC rule 3745-31-05(A)(3), as effective 11/30/01	When processing SNC material or K material total particulate emissions (PE) from the stack shall not exceed 0.89 lb per hour. When processing MG material total PE from the stack shall not exceed 1.11 lbs per hour. When processing F material, total PE from the stack shall not exceed 0.45 lb per hour. Total stack and fugitive PE combined shall not exceed 1.95 tons per year. Total stack and fugitive PM_{10} combined shall not exceed 1.68 tons per year. Total stack and fugitive $PM_{2.5}$ combined shall not exceed 1.44 tons per year. There shall be no visible PE from any stack serving this emissions unit. There shall be no visible fugitive PE from the emissions unit or if the emissions unit is in a building there shall be no visible fugitive PE from the egress points (i.e., building windows, doors, etc.) serving this emissions unit. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A), OAC rule 3745-17-07(B), OAC rule 3745-17-08, OAC rule 3745-17-11, and OAC rule 3745-17-10. See b)(2)a. below.
c.	OAC rule 3745-31-05(C), as effective 12/01/06	See b)(2)b. below.
d.	OAC rule 3745-31-05(E) (voluntary restriction to avoid state	NO_x emissions from the stack shall not exceed 22.0 tons per year.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	modeling for Air Toxics, NO_x and SO_2 emissions)	SO_2 emissions from the stack shall not exceed 24.0 tons per year. See c)(4) below.
e.	OAC rule 3745-17-11(B)	PE from the industrial process (excluding the combustion of natural gas) shall not exceed 6.65 lbs/hr. This emission limitation is less stringent than the limitation listed under OAC rule 3745-31-05(A)(3), until such time as U.S. EPA approves the December 1, 2006, version of OAC rule 3745-31-15 as part of the State Implementation Plan.
f.	OAC rule 3745-17-07(B)	Visible PE of fugitive dust shall not exceed 20% opacity, as a three-minute average. This visible PE of fugitive dust limitation is less stringent than the limitation listed under OAC rule 3745-31-05(A)(3), until such time as U.S. EPA approves the December 1, 2006, version of OAC rule 3745-31-15 as part of the State Implementation Plan.
g.	OAC rule 3745-17-07(A)	Visible PE from the stack serving this emissions unit shall not exceed 20% opacity as a six-minute average, except as provided by the rule. This visible PE limitation is less stringent than the limitation listed under OAC rule 3745-31-05(A)(3), until such time as U.S. EPA approves the December 1, 2006, version of OAC rule 3745-31-15 as part of the State Implementation Plan.
h.	OAC rule 3745-17-08(B)	The permittee shall employ reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust. See b)(2)c. below.
i.	OAC rule 3745-17-10(B)	PE from the fuel burning equipment shall not exceed 0.020 lb/mmBtu of actual heat input. This emissions limitation is less stringent

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		than the limitations listed under OAC rule 3745-31-05(A)(3), until such time as U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-15 as part of the State Implementation Plan.

(2) Additional Terms and Conditions

a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC rule 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes), such that BAT is no longer required by State regulation for NAAQS pollutant emissions less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revision to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally–approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limits/control measures no longer apply.

b. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the SIP.

PTIO P0115851 for this air contaminant source takes into account the following voluntary restriction (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding BAT requirements under OAC rule 3745-31-05(A)(3):

i. In accordance with the permittee's permit application, all the material handling and processing equipment shall be located inside of a building with the exception of the kiln, cyclone, afterburner, baghouse, scrubber and conveyors. All conveyors and transfer points shall be covered or enclosed while in operation;

ii. Total stack and fugitive PE combined shall not exceed 1.95 tons per year;

iii. Total stack and fugitive PM_{10} combined shall not exceed 1.68 tons per year; and

iv. Total stack and fugitive $PM_{2.5}$ combined shall not exceed 1.44 tons per year.

c. The permittee shall employ reasonably available control measures on this emissions unit for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures that

minimize or eliminate visible particulate emissions of fugitive dust at the point of capture to the extent possible with good engineering design and vents the emissions from the kiln combustion and kiln process to a baghouse that is capable of meeting the applicable requirements. In addition, in accordance with the permittee's permit application, all the material handling and processing equipment shall be located inside of a building with the exception of the kiln, cyclone, afterburner, baghouse, scrubber and conveyors. All conveyors and transfer points shall be covered or enclosed while in operation. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

(1) The emissions from the kiln combustion and kiln process shall be vented with a capture efficiency of 100% to a baghouse with a minimum control efficiency of 99% for PE at all times the emissions unit is in operation. The kiln process shall have a minimum of 100% capture efficiency and 50% control efficiency of VOC at all times the emissions unit is in operation.

(2) In addition to the controls outlined in c)(1), the emissions from the kiln combustion and process shall be vented with a capture efficiency of 100% to a scrubber with a control efficiency of 99% for the removal of SO_2 emissions at all times the emissions unit is in operation and processing K material. The emissions from the kiln combustion and process shall be vented to an afterburner with a capture efficiency of 100% and a control efficiency of 99.4% for the removal of VOC emissions at all times the emissions unit is in operation and processing VOC containing material.

(3) The permittee shall burn only natural gas in this emissions unit.

(4) The permittee has requested a voluntary limitation on the quantity of material processed for the purpose of avoiding state-only requirements. The amount of material processed is restricted in two ways:

a. The total amount of material processed is limited to 9,965 tons per year; or

b. The amount of material processed and the NO_x emissions are restricted by the following equation:

22.0 tons per year ≥ (4.42 lbs/ton)(a) + (2.64 lbs/ton)(b) + (1.19 lbs/ton)(c) + (4.42 lbs/ton)(d)/2,000 lbs/ton

Where:

a = Tons of SNC material processed per year.

b = Tons of MG material processed per year.

c = Tons of F material processed per year.

d = Tons of K material processed per year.

*Factors may be revised based upon Ohio EPA validated emissions testing and shall be revised if emissions testing results demonstrate higher emissions.

* Upon completing Ohio EPA validated emissions testing that demonstrates lower emissions, the permittee may substitute the revised updated emission factors (lbs of NO_x/ton of material type) in the equation outlined in c)(4)(b) in order to demonstrate compliance with the NO_x emission limitation of 22.0 tons per year.

(5) The permittee shall only process the material types outlined in the submitted application (SNC, MG, K, and F material). In order to process additional material types on an ongoing basis, the permittee shall contact Ohio EPA and determine if a permit modification or additional emissions testing should be performed.

d) Monitoring and/or Recordkeeping Requirements

(1) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

(2) The permittee shall perform daily checks, when the emissions unit is in operation, for any visible emission of fugitive dust from the emissions unit or if the emissions unit is in a building the egress points and any visible emissions from any stack(s) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the color of the emissions;

b. the total duration of any visible emissions incident; and

c. any corrective actions taken to eliminate the visible emissions.

(3) The permittee shall properly install, operate, and maintain continuous temperature monitors and recorder(s) that measure the record(s) the exhaust temperature of the kiln when the emissions unit is in operation, including periods of startup and shutdown. The permittee shall record the exhaust temperature on a continuous basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable temperature setting when processing non-VOC containing material shall be a minimum of 300 degrees Fahrenheit (not including start-up or shut-down, or any idling period) until such time as any required performance testing is conducted and the appropriate temperature range is established to demonstrate compliance. The acceptable temperature setting when processing VOC containing material shall be a minimum of 600 degrees Fahrenheit (not including start-up or shut-down, or any idling period) until such time as any required performance testing is conducted and the appropriate temperature range is established to demonstrative compliance. These records shall be maintained at the facility for a period of no less than 3 years.

(4) The permittee shall properly install, operate, and maintain continuous temperature monitors and recorder(s) that measure the record(s) the temperature within the afterburner when the emissions unit is in operation and the afterburner use is required, including periods of startup and shutdown. The permittee shall record the combustion temperature within the afterburner on a continuous basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable temperature setting shall be a minimum of 1,450 degrees Fahrenheit (not including start-up or shut-down, or any idling period) until such time as any required performance testing is conducted and the appropriate temperature range is established to demonstrate compliance. These records shall be maintained at the facility for a period of no less than 3 years.

(5) Whenever the monitored exhaust temperature of the kiln deviates from the range or limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permits determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

f. a description of the corrective action;

g. the date corrective action was completed;

h. the date and time the deviation ended;

i. the total period of time (in minutes) during which there was a deviation;

j. the temperature readings immediately after the corrective action was implemented; and

k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The temperature range/limit is effective for the duration of this permit, unless revisions are requires by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) for the controlled pollutant(s). In addition, approved revisions to the temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

(6) Whenever the monitored combustion temperature of the afterburner deviates from the range or limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permits determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

f. a description of the corrective action;

g. the date corrective action was completed;

h. the date and time the deviation ended;

i. the total period of time (in minutes) during which there was a deviation;

j. the temperature readings immediately after the corrective action was implemented; and

k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The temperature range/limit is effective for the duration of this permit, unless revisions are requires by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted

temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) for the controlled pollutant(s). In addition, approved revisions to the temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

(7) The acceptable range or limit for the scrubber liquid flow rate, gas temperature at the injection sites, and the scrubber liquid pH shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

(8) The permittee shall properly install, operate, and maintain equipment to continuously monitor the scrubber liquid flow rate (in gallons per minute), the gas temperature at the injection sites, and the scrubber liquid pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the scrubber liquids pH, the gas temperature at the injection sites, and the flow rate on an hourly basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable liquid flow rate, gas temperature at the injection sites, and the liquid pH shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

f. a description of the corrective action;

g. the date the corrective action was completed;

h. the date and time the deviation ended;

i. the total period of time (in minutes) during which there was a deviation;

j. the flow rate, gas injection site temperatures, and pH readings immediately after the corrective action was implemented; and

k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

These range(s) and/or limit(s) for the liquid flow rate, gas temperature at the injection sites, and pH are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted range or limit for the liquid flow rate, gas temperature at the injection sites, or the pH based upon information obtained during future performance tests that demonstrate compliance with the allowable SO_2 emission rate for this emissions unit. In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

(9) The permittee shall maintain monthly records of the following information:

a. the tons of material processed for each material type for each month;

b. the annual summation of each material type processed and the annual summation of all total material processed; and

c. theannual summation of , *NO_x emissions.

*The annual summation of NO_x shall be calculated by using the equation in c)(4)b.

(10) The permittee shall receive and maintain the chemical analyses from the supplier/marketer for each shipment of material to be processed in this emissions unit, which shall contain the following information:

a. the date the material was received at the facility and the amount received;

b. the name, address, and U.S. EPA identification number (if applicable) of the generator, transporter, processor/refiner, supplier, and/or marketer;

c. the VOC analysis for the shipment of material

Each analysis shall be kept in a readily accessible location for a period of not less than 5 years following the receipt of each shipment of material and shall be made available to the Ohio EPA Division of Materials and Waste Management and/or the Division of Air Pollution Control upon verbal or written request. Any authorized representative of the Ohio EPA may sample or require sampling of any material shipments received, stored,

or processed by/at this facility for periodic detailed chemical analyses through an independent laboratory.

(11) The permittee shall maintain daily records of the following information:

a. the type of material (SNC, MG, K or F material), quantity in tons processed of each material type and the percent VOC content for each material type processed for each day;

b. any time the emissions unit processes VOC containing material and the afterburner was not in operation;

c. any time the emissions unit processes K material and the scrubber was not in operation; and

d. any time the emissions unit operates and the baghouse was not in operation.

e) Reporting Requirements

(1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.

(2) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

(3) The permittee shall submit deviation (excursion) reports that identify each day when any of the control devices were not operated as required per c)(1) and c)(2). The report shall include the probable cause of each deviation (excursion), any corrective actions that were taken to remedy the deviations (excursions) and the magnitude and duration of each deviation (excursion). Each report shall be submitted within 30 days after the deviation occurs.

(4) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.

(5) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the control equipment during the 12-month reporting period for this/these emissions unit(s):

a. each period of time (start time and date, and end time and date) when the exhaust temperature of the kiln was outside of the range specified in this permit and/or outside of the acceptable range following any required compliance demonstration;

b. each period of time (start time and date, and end time and date) when the combustion temperature within the afterburner was outside of the range specified

in this permit and/or outside of the acceptable range following any required compliance demonstration; and

c. each period of time (start time and date, and end time and date) when the scrubber liquid flow rate, gas temperature at the injection sites, and the scrubber liquid pH was outside of the appropriate range or limit specified by the manufacturer and/or outside of the acceptable range for each parameter following any required compliance demonstration; and

d. each period of time (start time and date, and end time and date)when the pressure drop across the baghouse was outside of the range specified by the manufacturer and outside of the acceptable range following any required compliance demonstration;

e. each incident of deviation described in a. through d. (above) where a prompt investigation was not conducted;

f. each incident of deviation described in a. through d. (above) where prompt corrective action, that would bring the equipment into compliance with the acceptable range, was determined to be necessary and was not taken; and

g. each incident of deviation described in a. through d. (above) where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

f) Testing Requirements

(1) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 3 months after the issuance of this administrative modification P0115851 permit for the emissions unit. Emissions testing for secondary materials shall be conducted within 90 days after the switch to the secondary material. Emissions testing shall be necessary for each material type switch only once per permitting cycle. For the purposes of this permit, secondary material shall be material used after the initial emissions test for this permit cycle.

b. The emission testing shall be conducted to demonstrate compliance with the allowable concentration of PE, NO_x, SO_2 and VOC in the exhaust stack.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

Methods 1 – 5 for PE

Methods 1 - 4, and 18, 25, or 25A for VOC. The test shall be conducted to verify compliance with the lb of VOC/hr emissions limitations.

Methods 1 - 4, and 7 for NO_x. The test shall be conducted to verify the lb of NO_x/ton of material processed emissions factor utilized in the NO_x equation outlined in c)(4)b.

Methods 1-4 and 6 or 6C of 40 CFR Part 60, Appendix A for SO_2. The test shall be conducted to verify the compliance with the lb of SO_2/ton of material processed or lb of SO_2/mmBtu emissions limitations.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

d. The test(s) shall be conducted under those representative conditions that challenge to the fullest extent possible a facility's ability to meet the applicable emissions limits and/or control requirements, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency. Although this generally consists of operating the emissions unit at its maximum material input/production rates and results in the highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.

e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

f. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), 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 from the emissions unit and/or the performance of the control equipment.

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

(2) Compliance with the Emissions Limitations and/or Control Requirements specified in b)(1) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

When processing SNC material or K material, total PE from the stack shall not exceed 0.89 lb per hour.

Applicable Compliance Method:

The emissions limitation was based on the following calculations:

Kiln Process Emissions

(7.4 lbs/ton)(3 tons/hour)(1.00)(1-.99) = 0.222 lb/hr

Kiln Combustion Emissions

7.6 lb/10^6 scfdivided by 1,020 = 0.0074510 lb/mmBtu

(0.0074510 lb/mmBtu)(20 mmBtu/hr)(1.00)(1-0.99) = 0.0015 lb/hr

Afterburner Combustion Emissions

7.6 lbs./10^6 scf divided by 1,020 = 0.0074510 lb/mmBtu

(0.0074510 lb/mmBtu)(89 mmBtu/hr) = 0.663 lb/hr

Total Stack Emissions

0.222 lb/hr + 0.0015 lb/hr + 0.663 lb/hr = 0.89 lb/hr

Where:

7.4 lbs/ton = emissions factor from AP 42 Section 2.2, Table 2.2-9, 1/95

7.6 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

3 tons/hour = the maximum operating rate of equipment as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

1.00 = capture efficiency as submitted in application

0.99 = control efficiency of the baghouse as submitted in application

Particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

b. Emissions Limitation:

When processing MG material, total PE from the stack shall not exceed 1.11 lbs per hour.

Applicable Compliance Method:

The emissions limitation was based on the following calculations:

Kiln Process Emissions

(7.4 lbs/ton)(6 tons/hour)(1.00)(1-.99) = 0.444 lb/hr

Kiln Combustion Emissions

7.6 lb/10^6 scfdivided by 1,020 = 0.0074510 lb/mmBtu

(0.0074510 lb/mmBtu)(20 mmBtu/hr)(1.00)(1-0.99) = 0.0015 lb/hr

Afterburner Combustion Emissions

7.6 lbs./10^6 scf divided by 1,020 = 0.0074510 lb/mmBtu

(0.0074510 lb/mmBtu)(89 mmBtu/hr) = 0.663 lb/hr

Total Stack Emissions

0.444 lb/hr + 0.0015 lb/hr + 0.663 lb/hr = 1.11 lbs/hr

Where:

7.4 lbs/ton = emissions factor from AP 42 Section 2.2, Table 2.2-9, 1/95

7.6 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

6 tons/hour = the maximum operating rate of equipment as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

1.00 = capture efficiency as submitted in application

0.99 = control efficiency of the baghouse as submitted in application

Particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

c. Emissions Limitation:

When processing F material, total PE from the stack shall not exceed 0.45 lb per hour.

Applicable Compliance Method:

The emissions limitation was based on the following calculations:

Kiln Process Emissions

(7.4 lbs/ton)(6 tons/hour)(1.00)(1-.99) = 0.444 lb/hr

Kiln Combustion Emissions

7.6 lb/10^6 scfdivided by 1,020 = 0.0074510 lb/mmBtu

(0.0074510 lb/mmBtu)(20 mmBtu/hr)(1.00)(1-0.99) = 0.0015 lb/hr

Total Stack Emissions

0.444 lb/hr + 0.0015 lb/hr = 0.45 lb/hr

Where:

7.4 lbs/ton = emissions factor from AP 42 Section 2.2, Table 2.2-9, 1/95

7.6 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

6 tons/hour = the maximum operating rate of equipment as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

1.00 = capture efficiency as submitted in application

0.99 = control efficiency of the baghouse as submitted in application

Particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

d. Emissions Limitation:

When processing SNC material, VOC emissions from the stack shall not exceed 14.88 lbs/hr.

Applicable Compliance Method:

The emission limitation was based on the following calculations:

Kiln Process Emissions

(0.80)(3 tons/hour)(2,000 lbs/ton)(1-0.50)(1-0.994) = 14.4 lbs/hr

Kiln Combustion Emissions

5.5 lbs/10^6 scf divided by 1,020 = 0.00539216 lb/mmBtu

(0.00539216 lb/mmBtu)(20 mmBtu/hr)(1-0.994) = 0.0006 lb/hr

Afterburner Combustion Emissions

5.5 lbs/10^6 scf divided by 1,020 = 0.00539216 lb/mmBtu

(0.00539216 lb/mmBtu)(89 mmBtu/hr) = 0.4799 lb/hr

Total Stack Emissions

14.4 lbs/hr + 0.0006 lb/hr + 0.4799 lb/hr = 14.88 lbs/hr

Where:

5.5 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

3 tons/hour = the maximum operating rate of equipment as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

0.80 = VOC content (decimal fraction) of material as submitted in application

0.50 = control efficiency of kiln process as submitted in application

0.994 = control efficiency of afterburner as submitted in application

Volatile organic compound emissions shall be determined according to test Methods 1 - 4, and 18, 25, or 25A, as appropriate, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

e. Emissions Limitation:

When processing MG material, VOC emissions from the stack shall not exceed 2.28 lbs/hr.

Applicable Compliance Method:

The emission limitation was based on the following calculations:

Kiln Process Emissions

(0.05)(6 tons/hour)(2,000 lbs/ton)(1-0.50)(1-0.994) = 1.8 lbs/hr

Kiln Combustion Emissions

5.5 lbs/10^6 scf divided by 1,020 = 0.00539216 lb/mmBtu

(0.00539216 lb/mmBtu)(20 mmBtu/hr)(1-0.994) = 0.0006 lb/hr

Afterburner Combustion Emissions

5.5 lbs/10^6 scf divided by 1,020 = 0.00539216 lb/mmBtu

(0.00539216 lb/mmBtu)(89 mmBtu/hr) = 0.4799 lb/hr

Total Stack Emissions

1.8 lbs/hr + 0.0006 lb/hr + 0.4799 lb/hr = 2.28 lbs/hr

Where:

5.5 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

6 tons/hour = the maximum operating rate of equipment as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

0.05 = VOC content (decimal fraction) of material as submitted in application

0.50 = control efficiency of kiln process as submitted in application

0.994 = control efficiency of afterburner as submitted in application

Volatile organic compound emissions shall be determined according to test Methods 1 - 4, and 18, 25, or 25A, as appropriate, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

f. Emissions Limitation:

When processing F material, VOC emissions from the stack shall not exceed 0.11 lb/hr.

Applicable Compliance Method:

The emission limitation was based on the following calculations:

Kiln Process Emissions

(0)(6 tons/hour)(2,000 lbs/ton)(1-0.50) = 0 lbs/hr

Kiln Combustion Emissions

5.5 lbs/10^6 scf divided by 1,020 = 0.00539216 lb/mmBtu

(0.00539216 lb/mmBtu)(20 mmBtu/hr) = 0.1078432 lb/hr

Total Stack Emissions

0 lbs/hr + 0.1078432 lb/hr = 0.11 lb/hr

Where:

5.5 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

6 tons/hour = the maximum operating rate of equipment as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

0 = VOC content (decimal fraction) of material as submitted in application

0.50 = control efficiency of kiln process as submitted in application

Volatile organic compound emissions shall be determined according to test Methods 1 - 4, and 18, 25, or 25A, as appropriate, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

g. Emissions Limitation:

When processing K material VOC emissions, from the stack shall not exceed 2.28 lbs/hr.

Applicable Compliance Method:

The emission limitation was based on the following calculations:

Kiln Process Emissions

(0.10)(3 tons/hour)(2,000 lbs/ton)(1-0.50)(1-0.994) = 1.8 lbs/hr

Kiln Combustion Emissions

5.5 lbs/10^6 scf divided by 1,020 = 0.00539216 lb/mmBtu

(0.00539216 lb/mmBtu)(20 mmBtu/hr)(1-0.994) = 0.0006 lb/hr

Afterburner Combustion Emissions

5.5 lbs/10^6 scf divided by 1,020 = 0.00539216 lb/mmBtu

(0.00539216 lb/mmBtu)(89 mmBtu/hr) = 0.4799 lb/hr

Total Stack Emissions

1.8 lbs/hr + 0.0006 lb/hr + 0.4799 lb/hr = 2.28 lbs/hr

Where:

5.5 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

3 tons/hour = the maximum operating rate of equipment as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

0.10 = VOC content (decimal fraction) of material as submitted in application

0.50 = control efficiency of kiln process as submitted in application

0.994 = control efficiency of afterburner as submitted in application

Volatile Organic compound emissions shall be determined according to test Methods 1 - 4, and 18, 25, or 25A, as appropriate, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

h. Emissions Limitation:

When processing SNC material or MG material, SO_2 emissions from the stack shall not exceed 0.001 lb/mmBtu.

Applicable Compliance Method:

The emission limitation was based on the following calculations:

Kiln Combustion Emissions

0.6 lbs/10^6 scf divided by 1,020 = 0.000588235 lb/mmBtu

Afterburner Combustion Emissions

0.6 lbs/10^6 scf divided by 1,020 = 0.000588235 lb/mmBtu

Total Stack Emissions

0.000588235 lb/mmBtu + 0.000588235 lb/mmBtu = 0.00117647 lb/mmBtu

Where:

0.6 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

Sulfur dioxide emissions shall be determined according to test Methods 1 - 4, and 6 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

i. Emissions Limitation:

When processing F material, SO_2 emissions from the stack shall not exceed 0.001 lb/mmBtu.

Applicable Compliance Method:

The emission limitation was based on the following calculations:

Kiln Combustion Emissions

0.6 lbs/10^6 scf divided by 1,020 = 0.000588235 lb/mmBtu

Where:

0.6 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

Sulfur dioxide emissions shall be determined according to test Methods 1 - 4, and 6 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

j. Emissions Limitation:

When processing K material, SO_2 emissions from the stack shall not exceed 4.80 lbs per ton.

Applicable Compliance Method:

The emission limitation was based on the following calculations:

Kiln Process Emissions

(0.12)(3 tons/hour)(2,000 lbs/ton)(2)(1-0.99) = 14.4 lbs/hr

Kiln Combustion Emissions

0.6 lbs/10^6 scf divided by 1,020 = 0.000588235 lb/mmBtu

(0.000588235 lb/mmBtu)(20 mmBtu/hr)(1-0.99) = 0.000117647 lb/hr

Afterburner Combustion Emissions

0.6 lbs/10^6 scf divided by 1,020 = 0.000588235 lb/mmBtu

(0.000588235 lb/mmBtu)(89 mmBtu/hr)(1-0.99) = 0.000523529 lb/hr

Total Stack Emissions

14.4 lbs/hr + 0.000117647 lb/hr + 0.000523529 lb/hr = 14.40 lbs/hr

(14.40 lbs/hr)(1hr/3 tons) = 4.80 lbs/ton

Where:

0.6 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

3 tons/hour = the maximum operating rate of equipment when processing K material as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

0.12 = sulfur content (decimal fraction) of K material as submitted in application

0.99 = control efficiency of scrubber as submitted in application

2 = Atomic Weight conversion (for every 32 moles of S, there are 64 moles of SO_2)

Sulfur dioxide emissions shall be determined according to test Methods 1 - 4, and 6 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

k. Emissions Limitation:

When processing SNC material, MG material, or K material, CO combustion emissions from the kiln and afterburner combined shall not exceed 0.16 lb/mmBtu.

Applicable Compliance Method:

The emissions limitation was based on the following calculations:

Kiln Combustion Emissions

84 lbs/10^6 scf divided by 1,020 = 0.082354 lb/mmBtu

Afterburner Combustion Emissions

84 lbs/10^6 scf divided by 1,020 = 0.082353 lb/mmBtu

Total Stack Emissions

0.082354 lb/mmBtu + 0.082354 lb/mmBtu = 0.16 lb/mmBtu

Where:

84 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-1, 7/98

If required, carbon monoxide emissions shall be determined according to test Methods 1 - 4, and 10 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

l. Emissions Limitation:

When processing F material, CO combustion emissions from the kiln shall not exceed 0.08 lb/mmBtu.

Applicable Compliance Method:

The emissions limitation was based on the following calculation:

Kiln Combustion Emissions

84 lbs/10^6 scf divided by 1,020 = 0.082354 lb/mmBtu

Where:

84 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-1, 7/98

If required, carbon monoxide emissions shall be determined according to test Methods 1 - 4, and 10 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

m. Emissions Limitation:

There shall be no visible PE from any stack serving this emissions unit.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 22.

n. Emissions Limitation:

There shall be no visible fugitive PE from the emissions unit or if the emissions unit is in a building there shall be no visible fugitive PE from the egress points (i.e., building windows, etc.) serving this emissions unit.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 22.

o. Emissions Limitations:

PE from the industrial process (excluding the combustion of natural gas) shall not exceed 6.65 lbs/hr.

PE from the fuel burning equipment shall not exceed 0.020 lb/mmBtu of actual heat input.

Applicable Compliance Method:

Particulate emissions shall be determined according to test Methods 1-5, as set forth in the “Appendix on Test Methods” in 40 CFR, Part 60 “Standards of Performance for New Stationary Sources”. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

p. Emissions Limitation:

NO_x emissions shall not exceed 22.0 tons per year.

Applicable Compliance Method:

Compliance shall be based on the actual tons of material per annual summation period as recorded in d)(9) or the calculation in c)(4)b. and records required in d)(9).

Nitrogen oxides emissions shall be determined according to test Methods 1 - 4, and 7 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

q. Emissions Limitation:

SO_2 emissions from the stack shall not exceed 24.0 tons per year.

Applicable Compliance Method:

The emissions limitation was based on the following calculations:

<u>Kiln Process Emissions</u>

14.4 lbs of SO_2/hr x 1 hr/3 tons of material x *9,965 tons of material/yr x 1 ton/2,000 lbs = 23.916 tons per year

Kiln Combustion Emissions

0.6 lbs/10^6 scf divided by 1,020 = 0.000588235 lb/mmBtu

(0.000588235 lb/mmBtu)(20 mmBtu/hr)(1-0.99) = 0.000117647 lb/hr

(0.000117647 lb/hr)(9,965 tons/yr)(1 hr/3 tons)(1 ton/2,000 lbs) = 0.000195392 ton/yr

Afterburner Combustion Emissions

0.6 lbs/10^6 scf divided by 1,020 = 0.000588235 lb/mmBtu

(0.000588235 lb/mmBtu)(89 mmBtu/hr)(1-0.99) = 0.000523529 lb/hr

(0.000523529 lb/hr)(9,965 tons/yr)(1 hr/3 tons)(1 ton/2,000 lbs) = 0.000869494 tons/yr

Total Stack Emissions

23.916 tons/yr + 0.000195392 tons/yr + 0.000869494 tons/yr = 24.0 tons per year.

Where:

14.4 lbs of $S0_2$/hr = emission factor as submitted in application based on the worse case processing of K material with a 12% sulfur content, and maximum operating rate of 3 TPH, and removal efficiency of 99% by the scrubber.

3 TPH = the maximum operating rate of the equipment when processing K material as submitted in application.

0.6 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

0.99 = control efficiency of the scrubber as submitted in application

*9,965 TPY = the amount of K material it would take to reach 22.0 TPY of NO_x

*based on worst case scenario of TPY of material to reach NO_x limitation

Compliance shall be determined by multiplying the observed emission rate from the most recent emissions testing, in pounds of SO_2 per ton of material processed for each material type, by the actual rolling 12-month summation of material processed for each material type, in tons per rolling 12-month period (as

derived by the records required by d)(9)), summing the results for all material types, and dividing by 2,000.

r. Emissions Limitation:

Total PE from the stack and fugitive combined shall not exceed 1.95 tons per year.

Total PM_{10} from the stack and fugitive combined shall not exceed 1.68 tons per year.

Total $PM_{2.5}$ from the stack and fugitive combined shall not exceed 1.44 tons per year.

Applicable Compliance Method:

The emissions limitations were based on the following calculations:

Kiln Process Emissions

(7.4 lbs/ton)(1.00)(1-0.99)(16,655 tons/yr)(1 ton/2,000 lbs) = 0.616235 ton/year

Kiln Combustion Emissions

7.6 lbs/10^6 scf divided by 1,020 = 0.0074510 lb/mmBtu

(0.0074510 lb/mmBtu)(20 mmBtu/hr)(1.00)(1-0.99)(16,655 tons/yr)(1 hr/6 tons)(1 ton/2,000 lbs) = 0.002068273 ton/year

Afterburner Combustion Emissions

7.6 lbs/10^6 scf divided by 1,020 = 0.0074510 lb/mmBtu

(0.0074510 lb/mmBtu)(89 mmBtu/hr)(16,655 tons/yr)(1 hr/6 tons)(1 ton/2,000 lbs) = 0.92038167 tons/year

Total Stack Emissions

0.616235 ton/year + 0.002068273 ton/year + 0.92038167 ton/year = 1.538684943 ton of PE per year.

As submitted in application all PE from combustion was assumed to be PM_{10} and 90% of the PE from the kiln process was assumed to be PM_{10}, therefore:

0.5546115 ton/year + 0.002068273 ton/year + 0.92038167 ton/year = 1.477061443 ton of PM_{10} per year.

As submitted in application all PE from combustion was assumed to be $PM_{2.5}$ and 50% of the PE from the kiln process was assumed to be $PM_{2.5}$, therefore:

0.3081175 ton/year + 0.002068273 ton/year + 0.92038167 ton/year = 1.230567443 ton of $PM_{2.5}$ per year.

Where:

7.4 lbs/ton = emissions factor from AP 42 Section 2.2, Table 2.2-9, 1/95

7.6 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-2, 7/98

6 tons/hour = the maximum operating rate of equipment as submitted in application

*16,655 TPY = the amount of MG material it would take to reach 22.0 TPY of NO_x

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

1.00 = capture efficiency as submitted in application

0.99 = control efficiency of the baghouse as submitted in application

*based on worst case scenario of TPY of material to reach NO_x limitation

Fugitive Emissions

Hopper load-in:

$EF = k \times (0.0032) \times [(U/5)^{1.3}/(M/2)^{1.4}]$

Where:

EF = PM emission factor expressed in pounds per ton
k = particle size multiplier for TSP (dimensionless) = 0.74
U =mean wind speed expressed in miles per hour (MPH) = 11
M = material moisture content (%) = 1

Therefore, EF = 0.01742 lb /ton

PM = [(# load-in points)(maximum annual throughput)(load-in EF)]/2,000 lbs/ton
= [(1)(16,655 tons/year)(0.01742 lb /ton)]/2,000 lb/ton
= 0.14506505 ton per year uncontrolled PM

Where:

0.01742 lb/ton = emission factor for hopper load-in AP42 Section 11.19.2, Table 11.19.2-2, 8/04

Auger:

PM= [(# of augers)(maximum annual throughput)(PM EF)]/2,000 lbs/ton

PM = [(1)(16,655 tons per year)(0.025 lb/ton)] X 1 ton/2,000 lbs

= 0.2081875 tons per year uncontrolled PM

Where:

0.025 lb/ton = emission factor for screening uncontrolled AP 42 Section 11.19.2, Table 11.19.2-2, 8/04

Transfer Points:

PM= [(# of conveyor transfer points)(maximum annual throughput)(PM EF)]/2,000 lbs/ton

PM = [(8)(16,655 tons per year)(0.003 lb/ton)] X 1 ton/2,000 lbs

= 0.19986 ton per year uncontrolled PM

(0.19986 ton per year)(1-.70) =0.059958 ton per year controlled PM

Where:

0.003 lb/ton = emission factor for transfer points uncontrolled AP 42 Section 11.19.2, Table 11.19.2-2, 8/04

0.70 = control efficiency for covering conveyors

Total Fugitive Emissions:
0.14506505 + 0.2081875 + 0.059958 + = 0.41321055 TPY of PE

As submitted in application 50% of the PE from the process was assumed to be PM_{10}, therefore:

(0.413210554)(.50) = 0.206605275 tons of PM_{10} per year.

As submitted in application 50% of the PE from the process was assumed to be $PM_{2.5}$, therefore:

(0.41321055)(.50) = 0.206605275 tons of $PM_{2.5}$ per year.

Total Fugitive and Stack PE Combined:

1.538684943 + 0.413210550 = 1.95 tons of PE per year.

1.477061443 + 0.206605275 = 1.68 tons of PM_{10} per year.

1.230567443 + 0.206605275 = 1.44 tons of $PM_{2.5}$ per year.

Compliance shall be based on the above equations using the actual annual summation of materials processed as recorded in d)(9) for the stack emissions and the above equations using the maximum 3 tons/hour process rating multiplied by the actual summation of materials processed as recorded in d)(9) for the fugitive emissions.

s. Emissions Limitation:

When processing SNC material or K material, NO_x emissions from the stack shall not exceed 4.42 lbs/ton.

Applicable Compliance Method:

The emission limitation was based on the following calculations:

Kiln Process Emissions:

(0.86 lb/ton)(3 tons/hr) = 2.58 lbs/hr

Kiln Combustion Emissions

100 lbs/10^6 scf divided by 1,020 = 0.098039 lb/mmBtu

(0.098039 lb/mmBtu)(20 mmBtu/hr) = 1.961 lbs/hr

Afterburner Emissions:

100 lbs/10^6 scf divided by 1,020 = 0.098039 lb/mmBtu

(0.098039 lb/mmBtu)(89 mmBtu/hr) = 8.73 lbs/hr

Total Stack Emissions:

2.58 lbs/hr + 1.961 + 8.73 = 13.271 lbs NOx/hr

(13.271 lbs/hr)(1 hr/3 tons) = 4.42 lb/ton

Where:

0.86 lb/ton = emission factor as submitted in application

3 tons/hr = the maximum operating rate of equipment when processing SNC or K material as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

100 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-1, 7/98

t. Emissions Limitation:

When processing MG material, NO_x emissions from the stack shall not exceed 2.64 lbs/ton.

Applicable Compliance Method:

The emission limitation was based on the following calculations:

Kiln Process Emissions:

(0.86 lb/ton)(6 tons/hr) = 5.16 lbs/hr

Kiln Combustion Emissions

100 lbs/10^6 scf divided by 1,020 = 0.098039 lb/mmBtu

(0.098039 lb/mmBtu)(20 mmBtu/hr) = 1.961 lbs/hr

Afterburner Emissions:

100 lbs/10^6 scf divided by 1,020 = 0.098039 lb/mmBtu

(0.098039 lb/mmBtu)(89 mmBtu/hr) = 8.73 lbs/hr

Total Stack Emissions:

5.16 lbs/hr + 1.961 + 8.73 = 15.851 lbs NOx/hr

(15.851 lbs/hr)(1 hr/6 tons) = 2.64 lb/ton

Where:

0.86 lb/ton = emission factor as submitted in application

6 tons/hr = the maximum operating rate of equipment when processing MG material as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

100 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-1, 7/98

u. Emissions Limitation:

When processing F material, NO_x emissions from the stack shall not exceed 1.19 lbs/ton.

Applicable Compliance Method:

The emission limitation was based on the following calculations:

Kiln Process Emissions:

(0.86 lb/ton)(6 tons/hr) = 5.16 lbs/hr

Kiln Combustion Emissions

100 lbs/10^6 scf divided by 1,020 = 0.098039 lb/mmBtu

(0.098039 lb/mmBtu)(20 mmBtu/hr) = 1.961 lbs/hr

Total Stack Emissions:

5.16 lbs/hr + 1.961 = 7.121 lbs NOx/hr

(7.121 lbs/hr)(1 hr/6 tons) = 1.19 lb/ton

Where:

0.86 lb/ton = emission factor as submitted in application

6 tons/hr = the maximum operating rate of equipment when processing F material as submitted in application

20 mmBtu/hr = the maximum kiln rating as submitted in application

89 mmBtu/hr = the maximum afterburner rating as submitted in application

100 lbs/10^6 scf = emissions factor from AP 42 Section 1.4, Table 1.4-1, 7/98

v. Emissions Limitation:

Visible PE of fugitive dust shall not exceed 20% opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9.

w. Emissions Limitation:

Visible PE from the stack serving this emissions unit shall not exceed 20% opacity as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9.

g) Miscellaneous Requirements

(1) Modeling to demonstrate compliance with, the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-31 requires

permittees to apply for and obtain a new or modified Permit-to-Install and Operate (PTIO) prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials or use of new materials that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new PTIO.