



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

10/1/2015

Mr. Ben Fogle  
GM Defiance Casting Operations  
26427 State Route 281 East  
Defiance, OH 43512

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL  
Facility ID: 0320010001  
Permit Number: P0119129  
Permit Type: Initial Installation  
County: Defiance

Certified Mail

Yes	TOXIC REVIEW
No	PSD
Yes	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
Yes	NETTING
No	MAJOR NON-ATTAINMENT
Yes	MODELING SUBMITTED
No	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

**How to appeal this permit**

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 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. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
77 South High Street, 17th Floor  
Columbus, OH 43215

## **How to save money, reduce pollution and reduce energy consumption**

The Ohio EPA is encouraging 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 Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: [www.ohioairquality.org/clean\\_air](http://www.ohioairquality.org/clean_air)

## **How to give us feedback on your permitting experience**

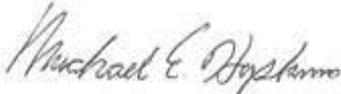
Please complete a survey at [www.epa.ohio.gov/survey.aspx](http://www.epa.ohio.gov/survey.aspx) and give us feedback on your permitting experience. We value your opinion.

## **How to get an electronic copy of your permit**

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, [www.epa.ohio.gov/dapc](http://www.epa.ohio.gov/dapc) by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Ohio EPA DAPC, Northwest District Office at (419)352-8461 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael E. Hopkins, P.E.  
Assistant Chief, Permitting Section, DAPC

Cc: U.S. EPA  
Ohio EPA-NWDO; Michigan; Indiana



**FINAL**

**Division of Air Pollution Control**  
**Permit-to-Install**  
for  
**GM Defiance Casting Operations**

Facility ID:	0320010001
Permit Number:	P0119129
Permit Type:	Initial Installation
Issued:	10/1/2015
Effective:	10/1/2015





**Division of Air Pollution Control**  
**Permit-to-Install**  
for  
GM Defiance Casting Operations

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**Final Permit-to-Install**  
GM Defiance Casting Operations  
**Permit Number:** P0119129  
**Facility ID:** 0320010001  
**Effective Date:** 10/1/2015

## Authorization

Facility ID: 0320010001  
Facility Description: Foundry  
Application Number(s): A0053740  
Permit Number: P0119129  
Permit Description: Initial Installation of two (2) cast lines and associated process equipment  
Permit Type: Initial Installation  
Permit Fee: \$13,200.00  
Issue Date: 10/1/2015  
Effective Date: 10/1/2015

This document constitutes issuance to:

GM Defiance Casting Operations  
State Route 281 East  
Defiance, OH 43512

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

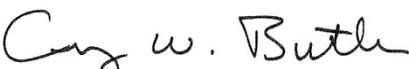
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Northwest District Office  
347 North Dunbridge Road  
Bowling Green, OH 43402  
(419)352-8461

The above named entity is hereby granted a Permit-to-Install for the 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 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

  
Craig W. Butler  
Director



## Authorization (continued)

Permit Number: P0119129

Permit Description: Initial Installation of two (2) cast lines and associated process equipment

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

- |                                   |                                |
|-----------------------------------|--------------------------------|
| <b>Emissions Unit ID:</b>         | <b>F022</b>                    |
| Company Equipment ID:             | SPM Waste Sand Handling        |
| Superseded Permit Number:         |                                |
| General Permit Category and Type: | Not Applicable                 |
| <b>Emissions Unit ID:</b>         | <b>P423</b>                    |
| Company Equipment ID:             | RECEIVING FURN #1              |
| Superseded Permit Number:         | 03-13364                       |
| General Permit Category and Type: | Not Applicable                 |
| <b>Emissions Unit ID:</b>         | <b>P426</b>                    |
| Company Equipment ID:             | HOLDING FURN #1                |
| Superseded Permit Number:         | 03-13364                       |
| General Permit Category and Type: | Not Applicable                 |
| <b>Emissions Unit ID:</b>         | <b>P642</b>                    |
| Company Equipment ID:             | SPM Sand Receiving and Storage |
| Superseded Permit Number:         |                                |
| General Permit Category and Type: | Not Applicable                 |
| <b>Emissions Unit ID:</b>         | <b>P643</b>                    |
| Company Equipment ID:             | SPM Mold De Coating            |
| Superseded Permit Number:         |                                |
| General Permit Category and Type: | Not Applicable                 |
| <b>Emissions Unit ID:</b>         | <b>P644</b>                    |
| Company Equipment ID:             | SPM Mold Coating               |
| Superseded Permit Number:         |                                |
| General Permit Category and Type: | Not Applicable                 |
| <b>Emissions Unit ID:</b>         | <b>P805</b>                    |
| Company Equipment ID:             | SPM Core Storage               |
| Superseded Permit Number:         |                                |
| General Permit Category and Type: | Not Applicable                 |

**Group Name: Castlines #1 & #2, Section 1**

<b>Emissions Unit ID:</b>	<b>P645</b>
Company Equipment ID:	SPM Castline Section 1, Line 1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P647</b>
Company Equipment ID:	SPM Castline Section 1, Line 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



**Group Name: Castlines #1 & #2, Section 2**

<b>Emissions Unit ID:</b>	<b>P646</b>
Company Equipment ID:	SPM Castline 1, Section 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P648</b>
Company Equipment ID:	SPM Castline 2, Section 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

**Group Name: Core Machines**

<b>Emissions Unit ID:</b>	<b>P639</b>
Company Equipment ID:	SPM Core Machine #1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P640</b>
Company Equipment ID:	SPM Core Machine #2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P641</b>
Company Equipment ID:	SPM Core Machine #3
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

**Group Name: Degate, Surface Mill & Decore**

<b>Emissions Unit ID:</b>	<b>P649</b>
Company Equipment ID:	Castline 1- DeGate, Surface Mill, DeCore
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P650</b>
Company Equipment ID:	Castline 2- DeGate, Surface Mill, DeCore
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

**Group Name: Derise, Pin Gage & Deflash**

<b>Emissions Unit ID:</b>	<b>P651</b>
Company Equipment ID:	Castline 1 - DeRise, Pin Gage, DeFlash
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P652</b>
Company Equipment ID:	Castline 2 - DeRise, Pin Gage, DeFlash
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



**Final Permit-to-Install**  
GM Defiance Casting Operations  
**Permit Number:** P0119129  
**Facility ID:** 0320010001  
**Effective Date:** 10/1/2015

## **A. Standard Terms and Conditions**

**1. Federally Enforceable Standard Terms and Conditions**

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
  - (1) Standard Term and Condition A.2.a), Severability Clause
  - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
  - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
  - (4) Standard Term and Condition A.9., Reporting Requirements
  - (5) Standard Term and Condition A.10., Applicability
  - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
  - (7) Standard Term and Condition A.14., Public Disclosure
  - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
  - (9) Standard Term and Condition A.16., Fees
  - (10) Standard Term and Condition A.17., Permit Transfers

**2. Severability Clause**

- a) A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

**3. General Requirements**

- a) Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification.
- b) It shall not be a defense for the permittee in an enforcement action that it would have been

necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.

- c) This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d) This permit does not convey any property rights of any sort, or any exclusive privilege.
- e) The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

#### **4. Monitoring and Related Record Keeping and Reporting Requirements**

- a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
  - (1) The date, place (as defined in the permit), and time of sampling or measurements.
  - (2) The date(s) analyses were performed.
  - (3) The company or entity that performed the analyses.
  - (4) The analytical techniques or methods used.
  - (5) The results of such analyses.
  - (6) The operating conditions existing at the time of sampling or measurement.
- b) Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
  - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Ohio EPA DAPC, Northwest District Office.
  - (2) Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions,

and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the Ohio EPA DAPC, Northwest District Office. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.

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

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

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

## 6. Compliance Requirements

- a) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the appropriate Ohio EPA District Office or contracted local air agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule

3745-15-03, the electronic signature date shall constitute the date that the required application, notification or report is considered to be "submitted". Any document requiring signature may be represented by entry of the personal identification number (PIN) by responsible official as part of the electronic submission process or by the scanned attestation document signed by the Authorized Representative that is attached to the electronically submitted written report.

Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a Responsible Official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

- b) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
- (1) At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
  - (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
  - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - (4) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c) The permittee shall submit progress reports to the Ohio EPA DAPC, Northwest District Office concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
- (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - (2) An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

## **7. Best Available Technology**

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

## **8. 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.

## **9. Reporting Requirements**

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Ohio EPA DAPC, Northwest District Office.
- b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA DAPC, Northwest District Office. 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, 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.)

## **10. Applicability**

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s) not exempt from the requirement to obtain a Permit-to-Install.

## **11. Construction of New Sources(s) and Authorization to Install**

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. 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 permittee shows good cause for any such extension.
- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., 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) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update electronically will constitute notifying the Director of the permanent shutdown of the affected emissions unit(s).

- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., 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). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

Unless otherwise exempted, no emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31 and OAC Chapter 3745-77 if the restarted operation is subject to one or more applicable requirements.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

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

The permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77. The permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if operation of the proposed new or modified source(s) as authorized by this permit would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d) must be obtained before operating the source in a manner that would violate the existing Title V permit requirements.

## **13. Construction Compliance Certification**

The applicant shall identify the following dates in the "Air Services" facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.

- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

**14. 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.

**15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations**

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 by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

**16. Fees**

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

**17. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in "Air Services" once the transfer is legally completed. The change must be submitted through "Air Services" within thirty days of the ownership transfer date.

**18. Risk Management Plans**

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

**19. Title IV Provisions**

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



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GM Defiance Casting Operations  
**Permit Number:** P0119129  
**Facility ID:** 0320010001  
**Effective Date:** 10/1/2015

## **B. Facility-Wide Terms and Conditions**

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
  - a) None.
  
2. The emissions units P639 through P641 and P645 through P650 were evaluated based on the actual materials and the design parameters of the emissions units' exhaust systems, as specified by the permittee in the permit application. The Ohio EPA's "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN 3.0, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
  - a) the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound emitted from the emissions units, (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
    - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or
    - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
  - b) The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
  - c) This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC).
  - d) The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

Toxic contaminant: acetaldehyde  
TLV (mg/m3): 45.0  
Maximum Hourly Emission Rate (lbs/hr): 0.36  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 2.64  
MAGLC (ug/m3): 1,071.43



Toxic contaminant: m, p-cresol  
TLV (mg/m3): 22.12  
Maximum Hourly Emission Rate (lbs/hr): 0.72  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 5.62  
MAGLC (ug/m3): 526.55

Toxic contaminant: cumene  
TLV (mg/m3): 245.79  
Maximum Hourly Emission Rate (lbs/hr): 1.17  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 24.45  
MAGLC (ug/m3): 5,852.07

Toxic contaminant: ethylene glycol  
TLV (mg/m3): 100.0  
Maximum Hourly Emission Rate (lbs/hr): 0.50  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 3.86  
MAGLC (ug/m3): 2,380.95

Toxic contaminant: alpha-methylstyrene  
TLV (mg/m3): 241.68  
Maximum Hourly Emission Rate (lbs/hr): 4.78  
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 36.90  
MAGLC (ug/m3): 5,754.21

The permittee, has demonstrated that emissions of acetaldehyde, m, p-cresol, cumene, ethylene glycol and alpha-methylstyrene, from the emissions units contained in this PTI are calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic contaminant in accordance with ORC 3704.03(F).

3. Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration", the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
- a) changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
  - b) changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
  - c) physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the ORC 3704.03(F), the statute, has been documented.

If the change(s) meet(s) the definition of a "modification" or the modeled toxic(s) is/are expected to exceed the previous modeled level(s), then the permittee shall apply for and obtain a final permit-to-install prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit-to-install application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and may require the permittee to submit a permit-to-install application for the increased emissions.

4. The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute":
  - a) a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxics modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
  - b) the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with ORC 3704.03(F);
  - c) a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
  - d) the documentation of the initial evaluation of compliance with ORC 3704.03(F) and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions units or the materials applied.
5. The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

The permittee shall submit an annual report to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect. These annual reports shall be submitted by April 30 and shall cover the records for the previous calendar year.



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## **C. Emissions Unit Terms and Conditions**

**1. F022, SPM Waste Sand Handling**

**Operations, Property and/or Equipment Description:**

SPM Waste Sand Handling, with Waste Pile Formation and Truck Loading to Landfill or Recycling Operations

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (1) b)(1)g. and d)(3).
- 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.	OAC rule 3745-31-05(D)	Fugitive particulate matter less than 10 microns in diameter (PM <sub>10</sub> ) emissions shall not exceed 0.88 ton/rolling, 12-month period, from the waste sand storage pile and truck loading to landfill or recycling operations, combined Fugitive volatile organic compound (VOC) emissions shall not exceed 1.26 tons/rolling, 12-month period, from the waste sand storage pile (fugitive evaporation)  Visible particulate emissions (PE) shall not exceed 20% opacity, as a three-minute average.  See b)(2)b. and c)(1).
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)c. and b)(2)d.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>10</sub> and VOC emissions from this air contaminant source since the potential to emit for each pollutant is less than 10 tons/year taking into account the federally enforceable limitations under OAC rule 3745-31-05(D).



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		See b)(2)e.
d.	OAC rule 3745-17-08(B)(3)	See b)(2)f.
e.	OAC rule 3745-17-07(B)	See b)(2)g.
f.	OAC rule 3745-21-07(M)	See b)(2)h.
g.	OAC rule 3745-114-01 ORC 3704.03(F)	See d)(3)

(2) Additional Terms and Conditions

- a. This emissions unit includes the following material handling operations:
  - i. waste sand loading from load out station to hoppers;
  - ii. transport by fork lift truck of hoppers to waste sand pile area north of the building; and
  - iii. loading of waste sand from waste sand pile into haul trucks for transport to landfill or for recycling.
  
- b. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restriction contained in c)(1):
  - i. Fugitive PM<sub>10</sub> emissions shall not exceed 0.88 ton/rolling, 12-month period from the waste sand storage pile and truck loading to landfill or recycling operations, combined;
  - ii. Fugitive VOC emissions shall not exceed 1.26 tons/rolling, 12-month period from the waste sand storage pile (fugitive evaporation); and
  - iii. Visible PE shall not exceed 20% opacity, as a three-minute average.
  
- c. The BAT requirements for PM<sub>10</sub> and VOC emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be equivalent to the rolling, 12-month PM<sub>10</sub> and VOC emission limitations established under OAC rule 3745-31-05(D)..
  
- d. These BAT emissions limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
  
- e. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.



- f. The permittee shall utilize reasonable available control measures (RACM) that are sufficient to minimize or eliminate visible emissions of fugitive dust. In accordance with the permittee's permit application, the permittee has committed to perform the following control measure(s) to ensure compliance:
  - i. Initial transfer of waste sand into hoppers is inside the building; and
  - ii. minimizing the drop height between material transfer points.

Nothing in this paragraph shall prohibit the permittee from employing other equally-effective control measures to ensure compliance.

For the other emission points associated with this emissions unit, the permittee maintains that the inherent nature of the operation and material involved is such that compliance with all applicable requirements will be obtained without additional control measures. If at any time the inherent nature of the operation and material involved is not sufficient to meet the above applicable requirements, the permittee shall employ RACM to ensure compliance.

- g. The emission limitation specified by this rule is equivalent to or less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
- h. This emissions unit is not subject to the requirements of the rule because it does not meet all of the conditions outlined in OAC rule 3745-21-07(M)(3)(a).

c) Operational Restrictions

- (1) The following operational restriction has been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)b.]:

The maximum annual sand processed shall not exceed 50,112 tons, based upon a rolling, 12-month summation of the monthly sand processed.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the sand processing levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Sand Usage (tons)</u>
1	5,000
1-2	10,000
1-3	15,000
1-4	20,000
1-5	25,000
1-6	30,000
1-7	35,000
1-8	40,000
1-9	45,000
1-10	50,000

Month(s)	Maximum Allowable Cumulative Sand Usage (tons)
1-11	50,112
1-12	50,112

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be, based upon a rolling, 12-month summation of the monthly sand processed.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform weekly\* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) 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 date and time of the visible emission observation;
- b. the identification of the egress observed;
- c. the color of the emissions;
- d. the total duration of any visible emission observation; and
- e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

- (2) The permittee shall maintain monthly records of the following information:
  - a. the quantity of sand processed, in tons; and
  - b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the quantity of sand processed.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative quantity of sand processed for each calendar month.

e) Reporting Requirements

- (1) The permittee shall submit semiannual written reports that (a) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

- (2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. all exceedances of the 12-month rolling restriction on the maximum allowable cumulative quantity of sand processed for this emissions unit; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative quantity of sand processed.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

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

- a. Emission Limitation:

Fugitive PM<sub>10</sub> emissions shall not exceed 0.88 ton/rolling, 12-month period, from the waste sand storage pile and truck loading to landfill operations, combined

Applicable Compliance Method:

The rolling, 12-month period PM<sub>10</sub> emission limitation above was developed by multiplying the company-supplied emission factor of 0.0087 lb PE/ton (based on adjusting the emission factor from AP-42, Table 11.19.1-1, 11-95, accounting for the fact that building enclosures cannot be used for control efficiency for PM<sub>10</sub>), by 4 (loading hoppers, dumping hoppers at waste pile, loading trucks, dumping at landfill), by the annual sand throughput restriction of 50,112 tons per rolling, 12-month period, and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month throughput restriction in c)(1), compliance with the rolling, 12-month emission limitation shall be demonstrated.

- b. Emission Limitation:

Fugitive VOC emissions shall not exceed 1.26 tons/rolling, 12-month period, from the waste sand storage pile (fugitive evaporation)

Applicable Compliance Method:

The rolling, 12-month period emission limitation was developed by multiplying the company-supplied emission factor of 0.05 lb/ton (based on engineering estimate), by the annual sand throughput restriction of 50,112 tons per rolling, 12-month period, and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month throughput restriction in c)(1), compliance with the rolling, 12-month emission limitation shall be demonstrated.

c. Emission Limitation:

Visible PE shall not exceed 20% opacity, as a three-minute average.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

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 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified PTI 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 PTI.



**2. P423, Receiving Furnace #1**

**Operations, Property and/or Equipment Description:**

Natural Gas Fired Receiving Furnace #1 (R1-2), modification to add a natural gas burner with heat input capacity of 10.2 million Btu per hour to dry hearth section. Total heat input capacity after this modification will be 19.8 million Btu per hour.

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (1) b)(1)g. and d)(2).
- 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.	OAC rule 3745-31-05(D)	<p><u>Emissions from combustion of natural gas, install a burner designed to meet:</u></p> <p>Nitrogen oxides (NO<sub>x</sub>) emissions shall not exceed 0.10 pound per million Btu of actual heat input (lb/mmBtu) and 8.67 tons per year (tpy).</p> <p>Carbon monoxide (CO) emissions shall not exceed 0.084 lb/mmBtu and 7.28 tpy.</p> <p>Particulate matter emissions less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.008 lb/mmBtu and 0.66 tpy.</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.001 lb/mmBtu and 0.05 tpy.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.006 lb/mmBtu and 0.48 tpy.</p> <p>Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p><u>Emissions from fluxing, degassing and drossing:</u></p> <p>Hydrogen fluoride (HF) emissions shall not exceed 1.07 lbs per day and 0.05 tpy</p> <p>Chlorine (Cl<sub>2</sub>) emissions shall not exceed 0.52 lb per day and 0.04 tpy</p> <p>Hydrochloric acid (HCl) emissions shall not exceed 2.13 lbs per day and 0.17 tpy</p> <p>[The annual limitations above are based on rolling, 12-month summations.]</p> <p>See b)(2)a. and c)(1).</p>
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)b. and b)(2)c.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	<p>The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply the NO<sub>x</sub>, CO, PM<sub>10</sub>, SO<sub>2</sub> and VOC emissions from this air contaminant source since the potential to emit for each pollutant is less than 10 tons/year.</p> <p>See b)(2)d.</p>
d.	OAC rule 3745-17-07(A)	See b)(2)e.
e.	OAC rule 3745-17-11(B)	See b)(2)e.
f.	OAC rule 3745-21-07(M)	See b)(2)g.
g.	OAC rule 3745-110-03	Exempt, pursuant to OAC rule 3745-110-03(K)(16).
h.	OAC rule 3745-114-01 ORC 3704.03(F)	See d)(2)

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on firing only natural gas, which is an inherently clean fuel [See c)(1)]:

- i. NO<sub>x</sub> emissions shall not exceed 0.10 lb/mmBtu and 8.67 tpy from combustion of natural gas;
  - ii. CO emissions shall not exceed 0.084 lb/mmBtu and 7.28 tpy from combustion of natural gas;
  - iii. PM<sub>10</sub> emissions shall not exceed 0.008 lb/mmBtu and 0.66 tpy from combustion of natural gas;
  - iv. SO<sub>2</sub> emissions shall not exceed 0.001 lb/mmBtu and 0.05 tpy from combustion of natural gas;
  - v. VOC emissions shall not exceed 0.006 lb/mmBtu and 0.48 tpy from combustion of natural gas;
  - vi. Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average;
  - vii. HF emissions shall not exceed 1.07 lbs per day and 0.05 tpy from fluxing, degassing and drossing;
  - viii. Cl<sub>2</sub> emissions shall not exceed 0.52 lb per day and 0.04 tpy from fluxing, degassing and drossing; and
  - ix. HCl emissions shall not exceed 2.13 lbs per day and 0.17 tpy from fluxing, degassing and drossing.
- b. The BAT requirements for NO<sub>x</sub>, CO, PM<sub>10</sub>, VOC and SO<sub>2</sub> emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be equivalent to the lb/mmBtu emission limitations established under OAC rule 3745-31-05(D).
  - c. These BAT emissions limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
  - d. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
  - e. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
  - f. The 0.10 lb NO<sub>x</sub>/mmBtu, 0.084 lb CO/mmBtu, 0.008 lb PE/mmBtu, 0.001 lb SO<sub>2</sub>/mmBtu, 0.006 lb VOC/mmBtu, 1.07 lbs HF/day, 0.52 lb Cl<sub>2</sub>/day and 2.13 lbs HCl/day emission limitations were established for PTI purposes to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.



- g. This emissions unit is not subject to the requirements of the rule because it does not meet all of the conditions outlined in OAC rule 3745-21-07(M)(3)(a).
  
- c) **Operational Restrictions**
  - (1) The following operational restriction has been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.]:
    - a. The permittee shall burn only natural gas in this emissions unit.
  
- 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.
  
- e) **Reporting Requirements**
  - (1) The permittee shall submit quarterly deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. The deviation reports shall be submitted in accordance with the Standard Terms and Conditions of this permit.
  - (2) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
  
- f) **Testing Requirements**
  - (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
    - a. Emission Limitations:

NOx emissions shall not exceed 0.10 lb/mmBtu and 8.67 tpy from combustion of natural gas
    - Applicable Compliance Method:

The lb/mmBtu emission limitation was developed by dividing the emission factor of 100 lb NOx/million standard cubic feet (scf) by the natural gas heat content of 1,000 Btu per scf. The emission factor is from AP-42 Table 1.4-2 [7/98].

If required, compliance with the lb/mmBtu NOx emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation by the maximum heat input capacity of 19.8 mmBtu/hr and by the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000

lbs/ton. Therefore, provided compliance is shown with the lb/mmBtu emission limitation, compliance with the annual emission limitation shall be demonstrated.

b. Emission Limitations:

CO emissions shall not exceed 0.084 lb/mmBtu and 7.28 tpy from combustion of natural gas

Applicable Compliance Method:

The lb/mmBtu emission limitation was developed by dividing the emission factor of 84 lb CO/million scf by the natural gas heat content of 1,000 Btu per scf. The emission factor is from AP-42 Table 1.4-2 [7/98].

If required, compliance with the lb/mmBtu CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation by the maximum heat input capacity of 19.8 mmBtu/hr and by the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/mmBtu emission limitation, compliance with the annual emission limitation shall be demonstrated.

c. Emission Limitations:

PM<sub>10</sub> emissions shall not exceed 0.008 lb/mmBtu and 0.66 tpy from combustion of natural gas

Applicable Compliance Method:

The lb/mmBtu emission limitation was developed by dividing the emission factor of 7.6 lb PM<sub>10</sub>/million scf by the natural gas heat content of 1,000 Btu per scf. The emission factor is from AP-42 Table 1.4-2 [7/98].

If required, compliance with the lb/mmBtu PM<sub>10</sub> limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or as amended or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation by the maximum heat input capacity of 19.8 mmBtu/hr and by the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/mmBtu emission limitation, compliance with the annual emission limitation shall be demonstrated.

d. Emission Limitations:

SO<sub>2</sub> emissions shall not exceed 0.001 lb/mmBtu and 0.05 tpy, from combustion of natural gas

Applicable Compliance Method:

The lb/mmBtu emission limitation was developed by dividing the emission factor of 0.6 lb SO<sub>2</sub>/million scf by the natural gas heat content of 1,000 Btu per scf. The emission factor is from AP-42 Table 1.4-2 [7/98].

If required, compliance with the lb/mmBtu SO<sub>2</sub> limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 6 of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation by the maximum heat input capacity of 19.8 mmBtu/hr and by the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/mmBtu emission limitation, compliance with the annual emission limitation shall be demonstrated.

e. Emission Limitations:

VOC emissions shall not exceed 0.006 lb/mmBtu and 0.48 tpy, from combustion of natural gas

Applicable Compliance Method:

The lb/mmBtu emission limitation was developed by dividing the emission factor of 5.5 lb VOC/million scf by the natural gas heat content of 1,000 Btu per scf. The emission factor is from AP-42 Table 1.4-2 [7/98].

If required, compliance with the lb/mmBtu VOC limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation by the maximum heat input capacity of 19.8 mmBtu/hr and by the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/mmBtu emission limitation, compliance with the annual emission limitation shall be demonstrated.

f. Emission Limitation:

Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

g. Emission Limitations:

HF emissions shall not exceed 1.07 lbs per day and 0.05 tpy, from fluxing, degassing and drossing



Applicable Compliance Method:

The daily emission limitation was developed by the following equation:

$$HF = (\text{daily flux use, lbs})(\text{percent flux emitted})(\text{percent fluorine in flux})(20 \text{ lbs HF per } 19 \text{ lbs fluorine, ratio of molecular weights})$$

Where:

Daily flux use = 40 lbs;

Percent flux emitted = 8.5% (based on stack test at GM – Saginaw facility); and

Percent fluorine in flux = 30% (based on Material Safety Data Sheet)

$$HF = (40)(0.085)(0.3)(20/19) = 1.07 \text{ lbs/day}$$

If required, compliance with the daily HF emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 26 or 26A, of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the daily emission limitation by the maximum operating schedule of two injection fluxes per week times 48 weeks of injection fluxes per year, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the daily emission limitation, compliance with the annual emission limitation shall be demonstrated.

h. Emission Limitations:

Cl<sub>2</sub> emissions shall not exceed 0.52 lb per day and 0.04 tpy from fluxing, degassing and drossing

Applicable Compliance Method:

The daily emission limitation was developed by the following equation:

Total daily Cl<sub>2</sub> = summation of injection flux and broadcast flux;

$$\text{Injection flux Cl}_2 = (\text{daily flux use, lbs}) \times (\text{percent flux emitted}^*) \times (\text{percent chlorine in flux}) \times (\text{percent as chlorine})$$

Where:

Daily flux use = 40 lbs;

Percent flux emitted = 8.5% (based on stack test at GM – Saginaw facility);

Percent chlorine in flux = 44.6% (based on Material Safety Data Sheet); and

Percent as chlorine = 20% (based on engineering estimate)

$$\text{Injection flux Cl}_2 = (40) \times (0.085) \times (0.446) \times (0.2) = 0.30 \text{ lb/day}$$

$$\text{Broadcast flux Cl}_2 = (\text{daily flux use, lbs})(\text{percent flux emitted}^*)(\text{percent chlorine in flux})(\text{percent as chlorine})$$

Where:

$$\text{Daily flux use} = 15 \text{ lbs;}$$

$$\text{Percent flux emitted} = 17\% \text{ (based on stack test at GM – Saginaw facility);}$$

$$\text{Percent chlorine in flux} = 42.2\% \text{ (based on Material Safety Data Sheet); and}$$

$$\text{Percent as chlorine} = 20\% \text{ (based on engineering estimate)}$$

$$\text{Broadcast flux Cl}_2 = (15)(0.17)(0.422)(0.2) = 0.22 \text{ lb/day}$$

$$\text{Total Cl}_2 = 0.30 \text{ lb/day} + 0.22 \text{ lb/day} = 0.52 \text{ lb/day}$$

If required, compliance with the daily Cl<sub>2</sub> emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 26 or 26A, of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by summation of the injection flux Cl<sub>2</sub> and broadcast flux Cl<sub>2</sub> emissions:

$$\text{Annual injection flux Cl}_2 = (0.30 \text{ lbs/day}) \times (2 \text{ fluxes/wk.}) \times (48 \text{ wks/yr})/2,000 \text{ lbs/ton} = 0.01 \text{ tpy Cl}_2$$

$$\text{Annual broadcast flux Cl}_2 = (0.22 \text{ lbs/day}) \times (261 \text{ days of broadcast flux})/2,000 \text{ lbs/ton} = 0.03 \text{ tpy Cl}_2$$

$$\text{Total annual Cl}_2 = 0.01 \text{ tpy} + 0.03 \text{ tpy} = 0.04 \text{ tpy}$$

Therefore, provided compliance is shown with the daily emission limitation, compliance with the annual emission limitation shall be demonstrated.

i. Emission Limitations:

HCl emissions shall not exceed 2.13 lbs per day and 0.17 tpy from fluxing, degassing and drossing

Applicable Compliance Method:

The daily emission limitation was developed by the following equation:

$$\text{Total daily HCl} = \text{summation of injection flux and broadcast flux;}$$



**Injection flux HCl** = (daily flux use, lbs) x (percent flux emitted) x (percent chlorine in flux) x (percent as HCl) x (36.5 lbs HCl per 35.5 lbs chlorine, ratio of molecular weights)

Where:

Daily flux use = 40 lbs;

Percent flux emitted = 8.5% (based on stack test at GM – Saginaw facility);

Percent chlorine in flux = 44.6% (based on Material Safety Data Sheet); and

Percent as HCl = 80% (based on engineering estimate)

Injection flux HCl = (40) x (0.085) x (0.446) x (0.8) x (36.5/35.5) = 1.24 lbs/day

**Broadcast flux HCl** = (daily flux use, lbs) x (percent flux emitted) x (percent chlorine in flux) x (percent as HCl) x (36.5 lbs HCl per 35.5 lbs chlorine, ratio of molecular weights)

Where:

Daily flux use = 15 lbs;

Percent flux emitted = 17% (based on stack test at GM – Saginaw facility);

Percent chlorine in flux = 42.2% (based on Material Safety Data Sheet); and

Percent as HCl = 80% (based on engineering estimate)

Broadcast flux Cl<sub>2</sub> = (15) x (0.17) x (0.422) x (0.8) x (36.5/35.5) = 0.89 lb/day

**Total HCl** = 1.24 lbs/day + 0.89 lb/day = 2.13 lbs/day

If required, compliance with the daily HCl emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 26 or 26A, of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by summing the injection flux and broadcast flux HCl emissions:

Annual injection flux HCl = (1.24 lbs/day) x (2 fluxes/wk) x (48 wks/yr)/2,000 lbs/ton = 0.06 tpy HCl

Annual broadcast flux HCl = (0.89 lb/day) x (261 days of broadcast flux)/2,000 lbs/ton = 0.11 tpy HCl

Total annual HCl = 0.06 tpy + 0.11 tpy = 0.17 tpy

Therefore, provided compliance is shown with the daily emission limitation, compliance with the annual emission limitation shall be demonstrated.

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 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified PTI 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 PTI.

**3. P426, Holding Furnace #1**

**Operations, Property and/or Equipment Description:**

Natural Gas Fired Holding Furnace #1 (H1-2), modification to add a natural gas burner with heat input capacity of 8.4 million Btu per hour to dry hearth section. Total heat input capacity after this modification will be 18.0 million Btu per hour.

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) b)(1)g. and d)(2).

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.	OAC rule 3745-31-05(D)	<p><u>Emissions from combustion of natural gas, install a burner designed to meet:</u></p> <p>Nitrogen oxides (NO<sub>x</sub>) emissions shall not exceed 0.10 pound per million Btu pf actual heat input (lb/mmBtu) and 7.88 tons per year (tpy).</p> <p>Carbon monoxide (CO) emissions shall not exceed 0.084 lb/mmBtu and 6.61 tpy.</p> <p>Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.008 lb/mmBtu and 0.60 tpy.</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.001 lb/mmBtu and 0.05 tpy.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.006 lb/mmBtu and 0.43 tpy.</p> <p>Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p><u>Emissions from fluxing, degassing and drossing:</u></p> <p>Hydrogen fluoride (HF) emissions shall not exceed 1.07 lbs per day and 0.05 tpy</p> <p>Chlorine (Cl<sub>2</sub>) emissions shall not exceed 0.52 lb per day and 0.04 tpy</p> <p>Hydrochloric acid (HCl) emissions shall not exceed 2.13 lbs per day and 0.17 tpy</p> <p>[The annual limitations above are based on rolling, 12-month summations.]</p> <p>See b)(2)a. and c)(1).</p>
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)b. and b)(2)c.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	<p>The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply the NO<sub>x</sub>, CO, PM<sub>10</sub>, SO<sub>2</sub>, VOC, HF, Cl<sub>2</sub> and HCl emissions from this air contaminant source since the potential to emit for each pollutant is less than 10 tons/year.</p> <p>See b)(2)d.</p>
d.	OAC rule 3745-17-07(A)	See b)(2)e.
e.	OAC rule 3745-17-11(B)	See b)(2)e.
f.	OAC rule 3745-21-07(M)	See b)(2)g.
g.	OAC rule 3745-110-03	Exempt, pursuant to OAC rule 3745-110-03(K)(16).
h.	OAC rule 3745-114-01 ORC 3704.03(F)	See d)(2)

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on firing only natural gas, which is an inherently clean fuel [See c)(1)]:

- i. NO<sub>x</sub> emissions shall not exceed 0.10 lb/mmBtu and 7.88 tpy from combustion of natural gas;
  - ii. CO emissions shall not exceed 0.084 lb/mmBtu and 6.61 tpy from combustion of natural gas;
  - iii. PM<sub>10</sub> emissions shall not exceed 0.008 lb/mmBtu and 0.60 tpy from combustion of natural gas;
  - iv. SO<sub>2</sub> emissions shall not exceed 0.001 lb/mmBtu and 0.05 tpy from combustion of natural gas;
  - v. VOC emissions shall not exceed 0.006 lb/mmBtu and 0.43 tpy from combustion of natural gas;
  - vi. Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average;
  - vii. HF emissions shall not exceed 1.07 lbs per day and 0.05 tpy from fluxing, degassing and drossing;
  - viii. Cl<sub>2</sub> emissions shall not exceed 0.52 lb per day and 0.04 tpy from fluxing, degassing and drossing; and
  - ix. HCl emissions shall not exceed 2.13 lbs per day and 0.17 tpy from fluxing, degassing and drossing.
- b. The BAT requirements for NO<sub>x</sub>, CO, PM<sub>10</sub>, VOC and SO<sub>2</sub> emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be equivalent to the lb/mmBtu emission limitations established under OAC rule 3745-31-05(D).
  - c. These BAT emissions limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
  - d. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
  - e. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
  - f. The 0.10 lb NO<sub>x</sub>/mmBtu, 0.084 lb CO/mmBtu, 0.008 lb PM<sub>10</sub>/mmBtu, 0.001 lb SO<sub>2</sub>/mmBtu, 0.006 lb VOC/mmBtu, 1.07 lbs HF/day, 0.52 lb Cl<sub>2</sub>/day and 2.13 lbs HCl/day emission limitations were established for PTI purposes to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.



- g. This emission unit is not subject to the requirements of the rule because it does not meet all of the conditions outlined in OAC rule 3745-21-07(M)(3)(a).
  
- c) Operational Restrictions
  - (1) The following operational restriction has been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.]:
    - a. The permittee shall burn only natural gas in this emissions unit.
  
- 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.
  
- e) Reporting Requirements
  - (1) The permittee shall submit quarterly deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. The deviation reports shall be submitted in accordance with the Standard Terms and Conditions of this permit.
  - (2) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
  
- f) Testing Requirements
  - (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
    - a. Emission Limitations:

NOx emissions shall not exceed 0.10 lb/mmBtu and 7.88 tpy from combustion of natural gas

Applicable Compliance Method:

The lb/mmBtu emission limitation was developed by dividing the emission factor of 100 lb NOx/million standard cubic feet (scf) by the natural gas heat content of 1,000 Btu per scf. The emission factor is from AP-42 Table 1.4-2 [7/98].

If required, compliance with the lb/mmBtu NOx emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation by the maximum heat input capacity of 18.0 mmBtu/hr and by

the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000 lbs/ton.

Therefore, provided compliance is shown with the lb/mmBtu emission limitation, compliance with the annual emission limitation shall be demonstrated.

b. Emission Limitations:

CO emissions shall not exceed 0.084 lb/mmBtu and 6.61 tpy from combustion of natural gas

Applicable Compliance Method:

The lb/mmBtu emission limitation was developed by dividing the emission factor of 84 lb CO/million scf by the natural gas heat content of 1,000 Btu per scf. The emission factor is from AP-42 Table 1.4-2 [7/98].

If required, compliance with the lb/mmBtu CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation by the maximum heat input capacity of 18.0 mmBtu/hr and by the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/mmBtu emission limitation, compliance with the annual emission limitation shall be demonstrated.

c. Emission Limitations:

PM<sub>10</sub> emissions shall not exceed 0.008 lb/mmBtu and 0.60 tpy from combustion of natural gas

Applicable Compliance Method:

The lb/mmBtu emission limitation was developed by dividing the emission factor of 7.6 lb PM<sub>10</sub>/million scf by the natural gas heat content of 1,000 Btu per scf. The emission factor is from AP-42 Table 1.4-2 [7/98].

If required, compliance with the lb/mmBtu PE limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation by the maximum heat input capacity of 18.0 mmBtu/hr and by the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/mmBtu emission limitation, compliance with the annual emission limitation shall be demonstrated.



d. Emission Limitations:

SO<sub>2</sub> emissions shall not exceed 0.001 lb/mmBtu and 0.05 tpy from combustion of natural gas

Applicable Compliance Method:

The lb/mmBtu emission limitation was developed by dividing the emission factor of 0.6 lb SO<sub>2</sub>/million scf by the natural gas heat content of 1,000 Btu per scf. The emission factor is from AP-42 Table 1.4-2 [7/98].

If required, compliance with the lb/mmBtu SO<sub>2</sub> limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 6 of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation by the maximum heat input capacity of 18.0 mmBtu/hr and by the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/mmBtu emission limitation, compliance with the annual emission limitation shall be demonstrated.

e. Emission Limitations:

VOC emissions shall not exceed 0.006 lb/mmBtu and 0.43 tpy from combustion of natural gas

Applicable Compliance Method:

The lb/mmBtu emission limitation was developed by dividing the emission factor of 5.5 lb VOC/million scf by the natural gas heat content of 1,000 Btu per scf. The emission factor is from AP-42 Table 1.4-2 [7/98].

If required, compliance with the lb/mmBtu VOC limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation by the maximum heat input capacity of 18.0 mmBtu/hr and by the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/mmBtu emission limitation, compliance with the annual emission limitation shall be demonstrated.

f. Emission Limitation:

Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

g. Emission Limitations:

HF emissions shall not exceed 1.07 lbs per day and 0.05 tpy from fluxing, degassing and drossing

Applicable Compliance Method:

The daily emission limitation was developed by the following equation:

$HF = (\text{daily flux use, lbs}) \times (\text{percent flux emitted}) \times (\text{percent fluorine in flux}) \times (20 \text{ lbs HF per } 19 \text{ lbs fluorine, ratio of molecular weights})$

Where:

Daily flux use = 40 lbs;

Percent flux emitted = 8.5% (based on stack test at GM – Saginaw facility); and

Percent fluorine in flux = 30% (based on Material Safety Data Sheet)

$HF = (40) \times (0.085) \times (0.3) \times (20/19) = 1.07 \text{ lbs/day}$

If required, compliance with the daily HF emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 26 or 26A, of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the daily emission limitation by the maximum operating schedule of two injection fluxes per week times 48 weeks of injection fluxes per year, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the daily emission limitation, compliance with the annual emission limitation shall be demonstrated.

h. Emission Limitations:

Cl<sub>2</sub> emissions shall not exceed 0.52 lb per day and 0.04 tpy from fluxing, degassing and drossing

Applicable Compliance Method:

The daily emission limitation was developed by the following equation:

Total daily Cl<sub>2</sub> = summation of injection flux and broadcast flux;

**Injection flux Cl<sub>2</sub>** = (daily flux use, lbs) x (percent flux emitted\*) x (percent chlorine in flux) x (percent as chlorine)

Where:

Daily flux use = 40 lbs;

Percent flux emitted = 8.5% (based on stack test at GM – Saginaw facility);

Percent chlorine in flux = 44.6% (based on Material Safety Data Sheet); and

Percent as chlorine = 20% (based on engineering estimate)

Injection flux  $Cl_2$  =  $(40) \times (0.085) \times (0.446) \times (0.2) = 0.30$  lb/day

**Broadcast flux  $Cl_2$**  = (daily flux use, lbs) x (percent flux emitted\*) x (percent chlorine in flux)(percent as chlorine)

Where:

Daily flux use = 15 lbs;

Percent flux emitted = 17% (based on stack test at GM – Saginaw facility);

Percent chlorine in flux = 42.2% (based on Material Safety Data Sheet); and

Percent as chlorine = 20% (based on engineering estimate)

Broadcast flux  $Cl_2$  =  $(15)(0.17)(0.422)(0.2) = 0.22$  lb/day

**Total  $Cl_2$**  =  $0.30$  lb/day +  $0.22$  lb/day =  $0.52$  lb/day

If required, compliance with the daily  $Cl_2$  emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 26 or 26A, of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by summing the injection flux  $Cl_2$  and broadcast flux  $Cl_2$  emissions:

Annual injection flux  $Cl_2$  =  $(0.30$  lb/day) x (2 fluxes/wk) x (48 wks/yr)/2,000 lbs/ton = 0.01 tpy  $Cl_2$

Annual broadcast flux  $Cl_2$  =  $(0.22$  lb/day) x (261 days of broadcast flux)/2,000 lbs/ton = 0.03 tpy  $Cl_2$

Total annual  $Cl_2$  =  $0.01$  tpy +  $0.03$  tpy =  $0.04$  tpy

Therefore, provided compliance is shown with the daily emission limitation, compliance with the annual emission limitation shall be demonstrated.

i. Emission Limitations:

HCl emissions shall not exceed 2.13 lbs per day and 0.17 tpy from fluxing, degassing and drossing

Applicable Compliance Method:

The daily emission limitation was developed by the following equation:

Total daily HCl = summation of injection flux and broadcast flux;

**Injection flux HCl** = (daily flux use, lbs) x (percent flux emitted) x (percent chlorine in flux) x (percent as HCl) x (36.5 lbs HCl per 35.5 lbs chlorine, ratio of molecular weights)

Where:

Daily flux use = 40 lbs;

Percent flux emitted = 8.5% (based on stack test at GM – Saginaw facility);

Percent chlorine in flux = 44.6% (based on Material Safety Data Sheet); and

Percent as HCl = 80% (based on engineering estimate)

Injection flux HCl =  $(40) \times (0.085) \times (0.446) \times (0.8) \times (36.5/35.5) = 1.24 \text{ lbs/day}$

**Broadcast flux HCl** = (daily flux use, lbs) x (percent flux emitted) x (percent chlorine in flux) x (percent as HCl) x (36.5 lbs HCl per 35.5 lbs chlorine, ratio of molecular weights)

Where:

Daily flux use = 15 lbs;

Percent flux emitted = 17% (based on stack test at GM – Saginaw facility);

Percent chlorine in flux = 42.2% (based on Material Safety Data Sheet); and

Percent as HCl = 80% (based on engineering estimate)

Broadcast flux Cl<sub>2</sub> =  $(15) \times (0.17) \times (0.422) \times (0.8) \times (36.5/35.5) = 0.89 \text{ lb/day}$

**Total HCl** = 1.24 lbs/day + 0.89 lb/day = 2.13 lbs/day

If required, compliance with the daily HCl emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 26 or 26A, of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by summing the injection flux and broadcast flux HCl emissions:

Annual injection flux HCl =  $(1.24 \text{ lbs/day}) \times (2 \text{ fluxes/wk}) \times (48 \text{ wks/yr})/2,000 \text{ lbs/ton} = 0.06 \text{ tpy HCl}$

Annual broadcast flux HCl =  $(0.89 \text{ lb/day}) \times (261 \text{ days of broadcast flux}) / 2,000 \text{ lbs/ton} = 0.11 \text{ tpy HCl}$

Total annual HCl =  $0.06 \text{ tpy} + 0.11 \text{ tpy} = 0.17 \text{ tpy}$

Therefore, provided compliance is shown with the daily emission limitation, compliance with the annual emission limitation shall be demonstrated.

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 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified PTI 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 PTI.

**4. P642, SPM Sand Receiving and Storage**

**Operations, Property and/or Equipment Description:**

SPM Sand Receiving and Storage, with Three Dust Collectors

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (1) 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.	OAC rule 3745-31-05(D)	<p><u>Combined Stack Emissions:</u></p> <p>Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 1.02 tons/rolling, 12-month period, from all three dust collectors, combined</p> <p><u>Receiving Silos (Stacks 1 &amp; 2):</u></p> <p>PM<sub>10</sub> emissions shall not exceed 0.0045 pound (lb) per ton of sand processed.</p> <p><u>Storage Bins and Hoppers (Stack 3):</u></p> <p>PM<sub>10</sub> emissions shall not exceed 0.0360 pound (lb) per ton of sand processed.</p> <p>Visible particulate emissions (PE) from the stacks associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.</p> <p>See b)(2)b. and c)(1).</p>
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)c. and b)(2)d.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		31-05(A)(3) do not apply to the PM <sub>10</sub> emissions from this air contaminant source since the potential to emit for each pollutant is less than 10 tons/year taking into account the federally enforceable limitations under OAC rule 3745-31-05(D).  See b)(2)e.
d.	OAC rule 3745-17-07(A)	See b)(2)f.
e.	OAC rule 3745-17-11(B)	See b)(2)f.

(2) Additional Terms and Conditions

- a. The emissions unit consists of two identical sand storage silos each with 60 tons storage capacity, two sand bins each with 25 tons storage capacity, three sand bins each with five tons storage capacity, and a hopper that can be manually fed with individual sand bags with two tons per hour capacity. Three dust collectors are used to control PM<sub>10</sub>.
- b. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1):
  - i. PM<sub>10</sub> emissions shall not exceed 0.0045 pound (lb) per ton of sand from the receiving silos, 0.0360 pound (lb) per ton of sand from the storage bin and hoppers, and 1.02 tons/rolling, 12-month period, from all three dust collectors, combined; and
  - ii. Visible PE from the stacks associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.
- c. The BAT requirements for PM<sub>10</sub> emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be equivalent to the rolling, 12-month PM<sub>10</sub> limitation established under OAC rule 3745-31-05(D).
- d. This BAT emissions limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- e. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- f. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).

c) Operational Restrictions

(1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)b.]:

- a. The permittee shall install, operate and maintain three dust collectors each with a design efficiency of at least 95% control of PM<sub>10</sub>; and
- b. The maximum annual sand processed shall not exceed 50,112 tons, based upon a rolling, 12-month summation of the monthly sand processed.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the sand processing levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Sand Usage (tons)</u>
1	5,000
1-2	10,000
1-3	15,000
1-4	20,000
1-5	25,000
1-6	30,000
1-7	35,000
1-8	40,000
1-9	45,000
1-10	50,000
1-11	50,112
1-12	50,112

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be, based upon a rolling, 12-month summation of the monthly sand processed.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall perform weekly\* checks when this emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
- b. the identification of the stack observed;
- c. the color of the emissions;

- d. the total duration of any visible emission observation; and
- e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

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

- a. the quantity of sand processed, in tons; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the quantity of sand processed.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the quantity of sand processed for each calendar month.

e) Reporting Requirements

(1) The permittee shall submit semiannual written reports that identify:

- a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and
- b. the root cause and any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

- a. all exceedances of the 12-month rolling restriction on the maximum allowable cumulative quantity of sand processed for this emissions unit; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative quantity of sand processed.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

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

a. Emission Limitations:

PM<sub>10</sub> emissions shall not exceed 0.0045 pound (lb) per ton of sand from the receiving silos, 0.0360 pound (lb) per ton of sand from the storage bin and hoppers, and 1.02 tons/rolling, 12-month period, from all three dust collectors, combined.

Applicable Compliance Method:

The emission limitation was developed by the following equations:

For dust collectors on receiving silos:

$$PM_{10} = (\text{emission factor, in lb/1,000 lb air density}) \times (\text{air density}) \times (60 \text{ min/hr}) \times (\text{air flow, scfm}) / (1,000 \text{ lbs of air}) \times (\text{annual operating hours}) / (\text{annual tons of aluminum processed});$$

Where:

Emission factor = 0.004 lb PM<sub>10</sub>/1,000 lb air density, based on GM stack testing of similar source (controlled basis, with mist eliminator or cartridge collector efficiency of 95%);

Air density = 0.075 lb/scf (standard conditions); and

Air flow = 2,000 scfm (design basis)

Annual operation = 6,264 hrs

Annual sand processed = 50,112 tons/yr

$$PM_{10} = (0.004) \times (0.075) \times (60) \times (2,000) / 1,000 \times (6,264) / 50,112 = 0.0045 \text{ lb per ton of aluminum processed}$$

For storage bin and hoppers (Dust Collector #3):

$$PM_{10} = (\text{emission factor, in lb/1,000 lb air density}) \times (\text{air density}) \times (60 \text{ min/hr}) \times (\text{air flow, scfm}) / (1,000 \text{ lbs of air}) \times (\text{annual operating hours}) / (\text{annual tons of aluminum processed});$$

Where:

Emission factor = 0.004 lb PM<sub>10</sub>/1,000 lb air density, based on GM stack testing of similar source (controlled basis, with mist eliminator or cartridge collector efficiency of 95%);



Air density = 0.075 lb/scf (standard conditions); and

Air flow = 16,000 scfm (design basis)

Annual operation = 6,264 hrs

Annual sand processed = 50,112 tons/yr

$PM_{10} = (0.004) \times (0.075) \times (60) \times (16,000) / 1,000 \times (6,264) / 50,112 = 0.036$  lb per ton of aluminum processed

If required, compliance with the hourly  $PM_{10}$  limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or other Methods approved by U.S. EPA.

Alternative or equivalent methods can be used with the approval of the Director.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton emission rate of 0.0045 lb/ton of sand processed by 50,112 tons of sand processed/yr along with 0.036 lb/ton of sand processed by 50,112 tons of sand processed/yr. Therefore, provided compliance is shown with the operational restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

b. Emission Limitation:

Visible PE from the stacks associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

g) Miscellaneous Requirements

(1) None.

**5. P643, SPM Mold De Coating**

**Operations, Property and/or Equipment Description:**

SPM Mold De Coating with Bead Blaster and Dust Collector

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) 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.	OAC rule 3745-31-05(D)	Particulate matter less than 10 microns in diameter (PM <sub>10</sub> ) emissions shall not exceed 0.47 lb/hr and 2.07 tons/yr* Visible particulate emissions (PE) from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.  *[The annual limitation above is based on a rolling, 12-month summation.]  See b)(2)a. and c)(1).
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	Install a baghouse with a design control efficiency of at least 95% control of PM <sub>10</sub> , by weight  See b)(2)b.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>10</sub> emissions from this air contaminant source since the potential to emit for each pollutant is less than 10 tons/year taking into account the federally enforceable limitations under OAC rule 3745-31-05(D).  See b)(2)c.
d.	OAC rule 3745-17-07(A)	See b)(2)d.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	See b)(2)d.

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restriction contained in c)(1):
  - i. PM<sub>10</sub> emissions shall not exceed 0.47 lb/hr and 2.07 tpy; and
  - ii. Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.
- b. This BAT emissions limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- d. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).

c) Operational Restrictions

- (1) The following operational restriction has been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.]:
  - a. The permittee shall install, operate and maintain a dust collector with a design efficiency of at least 95% control of PM<sub>10</sub>.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform weekly\* checks when this emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and

e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

e) Reporting Requirements

(1) The permittee shall submit semiannual written reports that identify:

- a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and
- b. the root cause and any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(2) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

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

a. Emission Limitations:

PM<sub>10</sub> shall not exceed 0.47 lb/hr and 2.07 tpy

Applicable Compliance Method:

The hourly emission limitation was developed by the following equation:

PM<sub>10</sub> = (emission factor in lb PM<sub>10</sub>/lb abrasive used) x (abrasive flow rate in lbs/hr) x (1 - W) x (number of nozzles) x (1 - control efficiency of dust collector);

Where:

Emission factor = 0.010 lb PM<sub>10</sub>/lb abrasive used, based on STAPPA/ALAPCO "Air Quality Permits", Vol. 1, Section 3 "Abrasive Blasting", 1991 edition

Abrasive flow rate = 945 lbs/hr (maximum design)

W = fraction of time spent wet blasting vs. dry blasting = 0%

Number of nozzles = 1

Control efficiency of dust collector = 95%



$$PM_{10} = (0.010) \times (945) \times (1 - 0) \times (1) \times (1 - 0.95) = 0.47 \text{ lb/hr}$$

If required, compliance with the lb/hr  $PM_{10}$  limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or other Methods approved by U.S. EPA.

The annual emission limitation was developed by multiplying the lb/hr emission limitation by the maximum by the maximum operating schedule of 8,760 hours/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/hr emission limitation, compliance with the annual emission limitation shall be demonstrated.

b. Emission Limitation:

Visible PE from the stack associated with this emission unit shall not exceed 10% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

g) Miscellaneous Requirements

- (1) None.

**6. P644, SPM Mold Coating**

**Operations, Property and/or Equipment Description:**

SPM Mold Coating, with Dust Collector

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) 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.	OAC rule 3745-31-05(D)	Particulate matter less than 10 microns in diameter (PM <sub>10</sub> ) emissions shall not exceed 0.06 lb/hr and 0.05 ton/rolling, 12-month period, from the castline touch-up and off-line recoat operations combined.  Visible particulate emissions (PE) from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.  See b)(2)a. and c)(1).
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)b. and b)(2)c.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>10</sub> emissions from this air contaminant source since the potential to emit is less than 10 tons/year taking into account the federally enforceable limitations under OAC rule 3745-31-05(D).  See b)(2)d.
d.	OAC rule 3745-17-07(A)	See b)(2)e.
e.	OAC rule 3745-17-11(B)	See b)(2)e.

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1):
  - i.  $PM_{10}$  emissions shall not exceed 0.06 lb/hr and 0.05 ton/rolling, 12-month period from the castline touch-up and off-line recoat operations combined; and
  - ii. Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.
- b. The BAT requirements for  $PM_{10}$  emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be equivalent to the rolling, 12-month  $PM_{10}$  limitation established under OAC rule 3745-31-05(D).
- c. This BAT emissions limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- d. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- e. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).

c) Operational Restrictions

- (1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.]:
  - a. The permittee shall install, operate and maintain a dust collector with a design efficiency of at least 95% control of  $PM_{10}$ ; and
  - b. The maximum annual mold coating usage for this emissions unit shall not exceed 20,000 pounds, based upon a rolling, 12-month summation of the monthly mold coating usage.

To ensure enforceability during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall not exceed the mold coating usage levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Mold Coating Usage (lbs)
1	2,000
1-2	4,000
1-3	6,000
1-4	8,000
1-5	10,000
1-6	12,000
1-7	14,000
1-8	16,000
1-9	18,000
1-10	20,000
1-11	20,000
1-12	20,000

After the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, compliance with the annual mold coating usage limitation shall be based upon a rolling, 12-month summation of the monthly mold coating usage.

d) **Monitoring and/or Recordkeeping Requirements**

(1) The permittee shall perform weekly\* checks when this emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
- b. the identification of the stack observed;
- c. the color of the emissions;
- d. the total duration of any visible emission observation; and
- e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

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

- a. the mold coating usage for each month; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the monthly mold coating usage.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative mold coating usage for each calendar month.

e) Reporting Requirements

(1) The permittee shall submit semiannual written reports that identify:

- a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and
- b. the root cause and any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

- a. all exceedances of the rolling, 12-month restriction on the mold coating usage for this emissions unit; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative mold coating usage.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

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

a. Emission Limitations:

PM<sub>10</sub> emissions shall not exceed 0.06 lb/hr and 0.05 ton/rolling, 12-month period from the castline touch-up and off-line recoat operations, combined.

Applicable Compliance Method:

The hourly emission limitation was developed by the following equation:

PM<sub>10</sub> = (lbs coating used/hr) x (weight percent solids) x (1 – transfer efficiency) x (1 – control efficiency of dust collector);



Where:

Maximum coating usage = 12.77 lbs/hr (combination of castline touch-up and off-line recoat materials);

Weight percent solids = 16% (based on Material Safety Data Sheet);

Transfer efficiency = 39% (based on 40 CFR, Part 60, Subpart MM – similar coating characteristics for waterborne coating); and

Control efficiency of dust collector = 95%

$$PM_{10} = (12.77) \times (0.16) \times (1 - 0.39) \times (1 - 0.95) = 0.06 \text{ lb/hr}$$

If required, compliance with the lb/hr  $PM_{10}$  limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or other Methods approved by U.S. EPA.

The rolling, 12-month emission limitation was developed by multiplying the lb/hr emission limitation by the maximum operating schedule of 1,566 hours/rolling, 12-month period, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month mold coating usage limitation in c)(1), compliance with the rolling, 12-month emission limitation shall be demonstrated.

b. Emission Limitation:

Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

g) Miscellaneous Requirements

(1) None.



**7. P805, SPM Core Storage**

**Operations, Property and/or Equipment Description:**

SPM Core Storage

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) b)(1)f. and d)(2).

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.	OAC rule 3745-31-05(D)	Fugitive volatile organic compound (VOC) emissions shall not exceed 8.19 tons/rolling, 12-month period  Fugitive sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 0.057 lb/ton of sand processed and 1.44 tons/rolling, 12-month period  See b)(2)a. and c)(1).
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)b. and b)(2)c.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the VOC and SO <sub>2</sub> emissions from this air contaminant source since the potential to emit for each pollutant is less than 10 tons/year taking into account the federally enforceable limitations under OAC rule 3745-31-05(D).  See b)(2)d.
d.	OAC rule 3745-18-06(E)	See b)(2)e.
e.	OAC rule 3745-21-07(M)	See b)(2)f.
f.	OAC rule 3745-114-01 ORC 3704.03(F)	See d)(2)



(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restriction contained in c)(1):
  - i. Fugitive VOC emissions shall not exceed 8.19 tons/rolling, 12-month period; and
  - ii. Fugitive SO<sub>2</sub> emissions shall not exceed 0.057 lb/ton of sand processed and 1.44 tons/rolling, 12-month period.
- b. The BAT requirements for VOC and SO<sub>2</sub> emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be the equivalent to the rolling, 12-month VOC and SO<sub>2</sub> emission limitations established under OAC rule 3745-31-05(D).
- c. This BAT emissions limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- d. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- e. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
- f. This emission unit is not subject to the requirements of the rule because it does not meet all of the conditions outlined in OAC rule 3745-21-07(M)(3)(a).

c) Operational Restrictions

(1) The following operational restriction has been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.):

- a. The maximum annual sand processed shall not exceed 50,112 tons, based upon a rolling, 12-month summation of the monthly sand processed.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the sand processing levels specified in the following table:

Month(s)	<u>Maximum Allowable Cumulative Sand Usage (tons)</u>
1	5,000
1-2	10,000
1-3	15,000
1-4	20,000



<u>Month(s)</u>	<u>Maximum Allowable Cumulative Sand Usage (tons)</u>
1-5	25,000
1-6	30,000
1-7	35,000
1-8	40,000
1-9	45,000
1-10	50,000
1-11	50,112
1-12	50,112

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be, based upon a rolling, 12-month summation of the monthly sand processed.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain monthly records of the following information:
  - a. the quantity of sand processed, in tons; and
  - b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the quantity of sand processed.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative quantity of sand processed for each calendar month.

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. all exceedances of the 12-month rolling restriction on the maximum allowable cumulative quantity of sand processed for this emissions unit; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative quantity of sand processed.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (2) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

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

a. Emission Limitation:

Fugitive VOC emissions shall not exceed 8.19 tons/rolling, 12-month period

Applicable Compliance Method:

The rolling, 12-month emission limitation was developed by multiplying the VOC emission factor of 0.327 lb/ton sand processed\*, the maximum sand throughput of 8 tons/hr, the maximum operating schedule of 6,264 hours/rolling, 12-month period, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month hours of operation restriction in c)(1), compliance with the rolling, 12-month emission limitation shall be demonstrated.

\* VOC emission factor from Technikon #8300-004 GV – October 2005

b. Emission Limitations:

Fugitive SO<sub>2</sub> emissions shall not exceed 0.057 lb/ton of sand processed and 1.44 tons/rolling, 12-month period

Applicable Compliance Method:

The annual emission limitation was developed by multiplying the SO<sub>2</sub> emission factor of 0.057 lb/ton sand processed\*, the maximum sand throughput of 50,112 tons/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month throughput restriction in c)(1), compliance with the rolling, 12-month emission limitation shall be demonstrated.

\* SO<sub>2</sub> emission factor from Wolverine Engineering Testing

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 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified PTI 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 PTI.



**8. Emissions Unit Group – Aluminum Pouring, Extraction from Mold and Initial Cooling: P645, P647**

EU ID	Operations, Property and/or Equipment Description
P645	SPM Castline #1, Section 1, Aluminum Pouring, Extraction from Mold, and Initial Cooling, with Baghouse
P647	SPM Castline #2, Section 1, Aluminum Pouring, Extraction from Mold, and Initial Cooling, with Baghouse

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

(1) b)(1)i.

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.	OAC rule 3745-31-05(D)	<p>The emission limitations below are for each emissions unit individually:</p> <p><u>Point Source Emissions:</u></p> <p>Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.04 lb/ton of aluminum poured and 0.38 ton/rolling, 12-month period</p> <p>Volatile organic compound (VOC) emissions shall not exceed 2.629 lbs/ton of aluminum poured and 24.70 tons/rolling, 12-month period</p> <p>Carbon monoxide (CO) emissions shall not exceed 0.372 lb/ton of aluminum poured and 3.50 tons/rolling, 12-month period</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.121 lb/ton of aluminum poured and 1.14 tons/rolling, 12-month period</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>visible particulate emissions (PE) from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.</p> <p><u>Fugitive Emissions:</u></p> <p>Fugitive PM<sub>10</sub> emissions shall not exceed 0.012 lb/ton of aluminum poured and 0.12 ton/rolling, 12-month period</p> <p>Fugitive VOC emissions shall not exceed 0.04 lb/ton of aluminum poured and 0.38 ton/rolling, 12-month period</p> <p>Fugitive CO emissions shall not exceed 0.006 lb/ton of aluminum poured and 0.05 ton/rolling, 12-month period</p> <p>Fugitive SO<sub>2</sub> emissions shall not exceed 0.002 lb/ton of aluminum poured and 0.02 ton/rolling, 12-month period</p> <p>See b)(2)a., b)(2)b. and c)(1).</p>
b.	ORC 3704.03(T)	See b)(2)c.
c.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)d. and b)(2)e.
d.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	<p>The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM<sub>10</sub>, CO and SO<sub>2</sub> emissions from this air contaminant source since the potential to emit for each pollutant is less than 10 tons/year taking into account the federally enforceable limitations under OAC rule 3745-31-05(D).</p> <p>See b)(2)f.</p>
e.	OAC rule 3745-17-07(A)	See b)(2)g.
f.	OAC rule 3745-17-11(B)	See b)(2)g.
g.	OAC rule 3745-18-06(E)	See b)(2)g.
h.	OAC rule 3745-21-07(M)	See b)(2)h.
i.	OAC rule 3745-114-01 ORC 3704.03(F)	See B.2. through B.5. – Facility-Wide Terms and Conditions.

(2) Additional Terms and Conditions

- a. The emissions from the emissions units listed above shall be vented to a baghouse when one or more of the emissions units are in operation.
- b. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1):
  - i. PM<sub>10</sub> emissions shall not exceed 0.04 lb/ton of aluminum poured and 0.38 ton/rolling, 12-month period for each emissions unit individually;
  - ii. VOC emissions shall not exceed 2.629 lbs/ton of aluminum poured and 24.70 tons/rolling, 12-month period for each emissions unit individually;
  - iii. CO emissions shall not exceed 0.372 lb/ton of aluminum poured and 3.50 tons/rolling, 12-month period for each emissions unit individually;
  - iv. SO<sub>2</sub> emissions shall not exceed 0.121 lb/ton of aluminum poured and 1.14 tons/rolling, 12-month period for each emissions unit individually;
  - v. Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average for each emissions unit individually;
  - vi. Fugitive PM<sub>10</sub> emissions shall not exceed 0.012 lb/ton of aluminum poured and 0.12 ton/rolling, 12-month period for each emissions unit individually;
  - vii. Fugitive VOC emissions shall not exceed 0.04 lb/ton of aluminum poured and 0.38 ton/rolling, 12-month period for each emissions unit individually;
  - viii. Fugitive CO emissions shall not exceed 0.006 lb/ton of aluminum poured and 0.05 ton/rolling, 12-month period for each emissions unit individually; and
  - ix. Fugitive SO<sub>2</sub> emissions shall not exceed 0.002 lb/ton of aluminum poured and 0.02 ton/rolling, 12-month period for each emissions unit individually.
- c. The BAT requirements for VOC emissions under ORC 3704.03(T) have been determined to be equivalent to the tons of aluminum throughput restriction in c)(1)b established under OAC rule 3745-31-05(D).
- d. The BAT requirements for PM<sub>10</sub>, CO and SO<sub>2</sub> emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be equivalent to the rolling, 12-month PM<sub>10</sub>, CO and SO<sub>2</sub> limitations established under OAC rule 3745-31-05(D).



- e. This BAT emissions limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- f. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- g. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
- h. This emissions unit is not subject to the requirements of the rule because it does not meet all of the conditions outlined in OAC rule 3745-21-07(M)(3)(a).

c) Operational Restrictions

(1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)b.]:

- a. The permittee shall install, operate and maintain a baghouse with a design efficiency of at least 95% control of PM<sub>10</sub>.
- b. The maximum annual aluminum pouring in each emissions unit (i.e., P645 and P647) shall not exceed 18,792 tons, based upon a rolling, 12-month summation of aluminum poured.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the aluminum pouring levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Aluminum Pouring (tons)</u>
1	1,879.2
1-2	3,758.4
1-3	5,637.6
1-4	7,516.8
1-5	9,396.0
1-6	11,275.2
1-7	13,154.4
1-8	15,033.6
1-9	16,912.8
1-10	18,792.0
1-11	18,792.0
1-12	18,792.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum pouring restriction shall be, based upon a rolling, 12-month summation of the monthly aluminum poured.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall collect and record the following information each month for each emissions unit (i.e., P645 and P647):
  - a. the quantity of aluminum poured, in tons;
  - b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the quantity of aluminum poured, in tons.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative quantity of aluminum poured, in tons, for each calendar month.

- (2) The permittee shall perform weekly\* checks when this emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit (for each baghouse). The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit , the restriction on the maximum allowable cumulative quantity of aluminum poured;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of aluminum poured;

These quarterly deviation reports shall be submitted in accordance with the Standard Terms and Conditions of this permit.

- (2) The permittee shall submit semiannual written reports that identify:



- a. all days during which any visible particulate emissions were observed from the stacks serving these emissions units; and
- b. the root cause and any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) The permittee shall conduct, or have conducted, emission testing for emissions units P645 and P647 in accordance with the following requirements:

- a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which the emissions unit will be operated, unless an extension is approved by the Ohio EPA District Office or local air agency.
- b. The emission testing shall be conducted to demonstrate compliance with the following emission limitation:
  - i. VOC emissions shall not exceed 2.629 lb/ton of aluminum poured for each emissions unit individually.
- c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rate:
  - i. for VOC, Methods 1-4 and 18, 25 or 25A (as applicable) of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA; and
  - ii. For VOC exempt Siloxanes, Modified Method 26A.

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

- d. The test(s) shall be conducted while the emissions units are operating under representative conditions at or near its maximum capacity, unless otherwise specified or approved by Ohio EPA or the appropriate local air agency.
- 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 section b) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitations:

PM<sub>10</sub> emissions shall not exceed 0.04 lb/ton of aluminum poured and 0.38 ton/rolling, 12-month period for each emissions unit individually

Applicable Compliance Method:

The lb/ton emission limitation was developed by the following equation:

PM<sub>10</sub> = (emission factor, in lb/ton of aluminum poured) x (percent of total sand used in section 1 of cast line after subtracting the remaining sand portion in section 2 of cast line) x (1 – control efficiency of baghouse);

Where:

Emission factor = 1.23 lb PM<sub>10</sub>/ton of aluminum poured, based on AP-42, ratio in Appendix I;

Percent of total sand used in section 1 of cast line = 65.2% (design basis); and

Control efficiency of baghouse = 95% (engineering estimate)

PM<sub>10</sub> = (1.23 lbs/ton) x (0.652) x (1 – 0.95) = 0.04 lb/ton of aluminum poured

If required, compliance with the lb/ton PM<sub>10</sub> limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or other Methods approved by U.S. EPA.



The rolling, 12-month emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

b. Emission Limitations:

VOC emissions shall not exceed 2.629 lb/ton of aluminum poured and 24.70 tons/rolling, 12-month period for each emissions unit individually

Applicable Compliance Method:

The lb/ton emission limitation was developed by following equation:

VOC = (emission factor, in lb/ton of aluminum poured) x (percent of VOC emitted in section 1 of cast line versus total VOC emitted from section 1 and section 2 of cast line, after subtracting an assumed one percent VOC for fugitive emissions inside facility);

Where:

Emission factor = 4 lb VOC/ton of aluminum poured (based on Technikon #8300-005 GV, October 2005); and

Percent of VOC emitted in section 1 of cast line = 65.73% (engineering estimate)

VOC = (4 lbs/ton) x (0.6573) = 2.629 lb/ton of aluminum poured

Compliance with the lb/ton VOC limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA [See f)(1)].

The rolling, 12-month emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

c. Emission Limitations:

CO emissions shall not exceed 0.372 lb/ton of aluminum poured and 3.50 tons/rolling, 12-month period for each emissions unit individually

Applicable Compliance Method:

The lb/ton emission limitation was developed by the following equation:

CO = (emission factor, in lb/ton of aluminum poured) x (percent of total sand used in section 1 of cast line after subtracting the remaining sand portion in section 2 of cast line);

Where:

Emission factor = 0.57 lb CO/ton of aluminum poured (based on Technikon #8300-005 GV, October 2005);

Percent of total sand used in section 1 of cast line = 65.2% (design basis)

CO = (0.57 lb/ton) x (0.652) = 0.372 lb/ton of aluminum poured

If required, compliance with the lb/ton CO limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA. The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

d. Emission Limitations:

SO<sub>2</sub> emissions shall not exceed 0.121 lb/ton of aluminum poured and 1.14 tons/rolling, 12-month period for each emissions unit individually

Applicable Compliance Method:

The lb/ton emission limitation was developed by the following equation:

SO<sub>2</sub> = (emission factor, in lb/ton of aluminum poured) x (percent of total sand used in section 1 of cast line after subtracting the remaining sand portion in section 2 of cast line);

Where:

Emission factor = 0.186 lb SO<sub>2</sub>/ton of aluminum poured (based on Technikon #8300-005 GV, October 2005);

Percent of total sand used in section 1 of cast line = 65.2% (design basis)

SO<sub>2</sub> = (0.186 lb/ton) x (0.652) = 0.121 lb/ton of aluminum poured



If required, compliance with the lb/ton SO<sub>2</sub> limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 6 of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

e. Emission Limitation:

Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average for each emissions unit individually.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

f. Emission Limitations:

Fugitive PM<sub>10</sub> emissions shall not exceed 0.012 lb/ton of aluminum poured and 0.12 ton/rolling, 12-month period for each emissions unit individually;

Applicable Compliance Method:

The lb/ton emission limitation was developed by using an engineering estimate of one percent of total PM<sub>10</sub> emissions as being fugitive emissions for section 1 and section 2, combined, of the castlines. For simplicity, it is assumed that all fugitive emissions occur from section 1, emissions units P645 and P647.

Fugitive PM<sub>10</sub> = (1%) x (combined emission factors for section 1 and section 2);

Where:

Section 1 emission factor = 0.802 lb PM<sub>10</sub>/ton of aluminum poured, based on Appendix C emissions calculations, pages C-20 through C-23 in permit application);

Section 2 emission factor = 0.415 lb PM<sub>10</sub>/ton of aluminum poured, based on Appendix C emissions calculations, pages C-20 through C-23 in permit application);

Fugitive PM<sub>10</sub> = (0.01) x (0.802 lb/ton + 0.415 lb/ton) = 0.012 lb/ton of aluminum poured

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton.



Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

g. Emission Limitations:

Fugitive VOC emissions shall not exceed 0.04 lb/ton of aluminum poured and 0.38 ton/rolling, 12-month period for each emissions unit individually

Applicable Compliance Method:

The lb/ton emission limitation was developed by using an engineering estimate of one percent of total VOC emissions as being fugitive emissions for section 1 and section 2, combined, of the castlines. For simplicity, it is assumed that all fugitive emissions occur from section 1, emissions units P645 and P647.

Fugitive VOC = (1%)x (combined emission factors for section 1 and section 2);

Where:

Section 1 emission factor = 2.629 lb VOC/ton of aluminum poured, based on Appendix C emissions calculations, pages C-20 through C-23 in permit application);

Section 2 emission factor = 1.359 lb VOC/ton of aluminum poured, based on Appendix C emissions calculations, pages C-20 through C-23 in permit application);

Fugitive VOC = (0.01) x (2.629 lb/ton + 1.359 lb/ton) = 0.04 lb/ton of aluminum poured

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton.

Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

h. Emission Limitations:

Fugitive CO emissions shall not exceed 0.006 lb/ton of aluminum poured and 0.05 ton/rolling, 12-month period for each emissions unit individually; and

Applicable Compliance Method:

The lb/ton emission limitation was developed by using an engineering estimate of one percent of total CO emissions as being fugitive emissions for section 1 and section 2, combined, of the castlines. For simplicity, it is assumed that all fugitive emissions occur from section 1, emissions units P645 and P647.

Fugitive CO = (1%) x (combined emission factors for section 1 and section 2);

Where:

Section 1 emission factor = 0.372 lb CO/ton of aluminum poured, based on Appendix C emissions calculations, pages C-20 through C-23 in permit application);

Section 2 emission factor = 0.192 lb CO/ton of aluminum poured, based on Appendix C emissions calculations, pages C-20 through C-23 in permit application);

Fugitive CO = (0.01) x (0.372 lb/ton + 0.192 lb/ton) = 0.006 lb/ton of aluminum poured

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall also be demonstrated.

i. Emission Limitations:

Fugitive SO<sub>2</sub> emissions shall not exceed 0.002 lb/ton of aluminum poured and 0.02 ton/rolling, 12-month period for each emissions unit individually

Applicable Compliance Method:

The lb/ton emission limitation was developed by using an engineering estimate of one percent of total SO<sub>2</sub> emissions as being fugitive emissions for section 1 and section 2, combined, of the castlines. For simplicity, it is assumed that all fugitive emissions occur from section 1, emissions units P645 and P647.

Fugitive SO<sub>2</sub> = (1%) x (combined emission factors for section 1 and section 2);

Where:

Section 1 emission factor = 0.121 lb SO<sub>2</sub>/ton of aluminum poured, based on Appendix C emissions calculations, pages C-20 through C-23 in permit application);

Section 2 emission factor = 0.063 lb SO<sub>2</sub>/ton of aluminum poured, based on Appendix C emissions calculations, pages C-20 through C-23 in permit application);

Fugitive SO<sub>2</sub> = (0.01) x (0.121 lb/ton + 0.063 lb/ton) = 0.002 lb/ton of aluminum poured

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month



aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

g) Miscellaneous Requirements

- (1) None.

**9. Emissions Unit Group – Extended Cooling: P646, P648**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
P646	SPM Castline #1, Section 2, Extended Cooling, with Baghouse
P648	SPM Castline #2, Section 2, Extended Cooling, with Baghouse

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

(1) b)(1)i.

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.	OAC rule 3745-31-05(D)	<p>The emission limitations below are for each emissions unit individually:</p> <p>Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.02 lb/ton of aluminum poured and 0.19 ton/rolling, 12-month period</p> <p>Volatile organic compound (VOC) emissions shall not exceed 1.36 lbs/ton of aluminum poured and 12.77 tons/rolling, 12-month period</p> <p>Carbon monoxide (CO) emissions shall not exceed 0.193 lb/ton of aluminum poured and 1.81 tons/rolling, 12-month period</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.063 lb/ton of aluminum poured and 0.59 tons/rolling, 12-month period</p> <p>Visible particulate emissions (PE) from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		See b)(2)a., b)(2)b and c)(1).
b.	ORC 3704.03(T)	See b)(2)c.
c.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)d. and b)(2)e.
d.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>10</sub> , CO and SO <sub>2</sub> emissions from this air contaminant source since the potential to emit for each pollutant is less than 10 tons/year taking into account the federally enforceable limitations under OAC rule 3745-31-05(D).  See b)(2)f.
e.	OAC rule 3745-17-07(A)	See b)(2)g.
f.	OAC rule 3745-17-11(B)	See b)(2)g.
g.	OAC rule 3745-18-06(E)	See b)(2)g.
h.	OAC rule 3745-21-07(M)	See b)(2)h.
i.	OAC rule 3745-114-01 ORC 3704.03(F)	See B.2. through B.5. – Facility-Wide Terms and Conditions.

(2) Additional Terms and Conditions

- a. The emissions from the emissions units listed above shall be vented to a baghouse when one or more of the emissions units are in operation.
- b. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1):
  - i. PM<sub>10</sub> emissions shall not exceed 0.02 lb/ton of aluminum poured and 0.19 ton/rolling, 12-month period for each emissions unit individually;
  - ii. VOC emissions shall not exceed 1.36 lbs/ton of aluminum poured and 12.77 tons/rolling, 12-month period for each emissions unit individually;
  - iii. CO emissions shall not exceed 0.193 lb/ton of aluminum poured and 1.81 tons/rolling, 12-month period for each emissions unit individually;
  - iv. SO<sub>2</sub> emissions shall not exceed 0.063 lb/ton of aluminum poured and 0.59 tons/rolling, 12-month period for each emissions unit individually; and

- v. Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average for each emissions unit individually.
  - c. The BAT requirements for VOC emissions under ORC 3704.03(T) have been determined to be equivalent to the tons of aluminum throughput restriction in c)(1)b established under OAC rule 3745-31-05(D).
  - d. The BAT requirements for PM<sub>10</sub>, CO and SO<sub>2</sub> emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be equivalent to the rolling, 12-month PM<sub>10</sub>, CO and SO<sub>2</sub> limitations established under OAC rule 3745-31-05(D).
  - e. This BAT emissions limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
  - f. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
  - g. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
  - h. This emission unit is not subject to the requirements of the rule because it does not meet all of the conditions outlined in OAC rule 3745-21-07(M)(3)(a).
- c) Operational Restrictions
- (1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)b.]:
    - a. The permittee shall install, operate and maintain a baghouse with a design efficiency of at least 95% control of PM<sub>10</sub>.
    - b. The maximum annual aluminum pouring in each emission unit P646 and P648, shall not exceed 18,792 tons, based upon a rolling, 12-month summation of aluminum poured.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the aluminum pouring levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Aluminum Pouring (tons)</u>
1	1,879.2
1-2	3,758.4
1-3	5,637.6
1-4	7,516.8
1-5	9,396.0
1-6	11,275.2
1-7	13,154.4
1-8	15,033.6
1-9	16,912.8
1-10	18,792.0
1-11	18,792.0
1-12	18,792.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum pouring restriction shall be, based upon a rolling, 12-month summation of the monthly aluminum poured.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall collect and record the following information each month for each emissions unit (i.e., P646 and P648):
  - a. the quantity of aluminum poured, in tons;
  - b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the quantity of aluminum poured, in tons.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative quantity of aluminum poured, in tons, for each calendar month.

- (2) The permittee shall perform weekly\* checks when this emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit (for each baghouse). The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and

e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

e) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:

- a. for the first 12 calendar months of operation following the issuance of this permit , the restriction on the maximum allowable cumulative quantity of aluminum poured;
- b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of aluminum poured;

These quarterly deviation reports shall be submitted in accordance with the Standard Terms and Conditions of this permit.

(2) The permittee shall submit semiannual written reports that identify:

- a. all days during which any visible particulate emissions were observed from the stacks serving these emissions units; and
- b. the root cause and any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

(1) The permittee shall conduct, or have conducted, emission testing for emissions units P646 and P648 in accordance with the following requirements:

- a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which the emissions unit will be operated, unless an extension is approved by the Ohio EPA District Office or local air agency.
- b. The emission testing shall be conducted to demonstrate compliance with the following emission limitation:
  - i. VOC emissions shall not exceed 1.36 lbs/ton of aluminum poured for each emissions unit individually.

- c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rate:
- i. for VOC, Methods 1-4 and 18, 25 or 25A (as applicable) of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA; and
  - ii. for VOC exempt Siloxanes, Modified Method 26A.

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

- d. The test(s) shall be conducted while the emissions units are operating under representative conditions at or near its maximum capacity, unless otherwise specified or approved by Ohio EPA or the appropriate local air agency.
- 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 section b) of these terms and conditions shall be determined in accordance with the following methods:
- a. Emission Limitations:  
  
PM<sub>10</sub> emissions shall not exceed 0.02 lb/ton of aluminum poured and 0.19 ton/rolling, 12-month period for each emissions unit individually



Applicable Compliance Method:

The lb/ton emission limitation was developed by the following equation:

$PM_{10} = (\text{emission factor, in lb/ton of aluminum poured}) \times (\text{percent of total sand remaining for use in section 2 of cast line}) \times (1 - \text{control efficiency of baghouse});$

Where:

Emission factor = 1.23 lbs  $PM_{10}$ /ton of aluminum poured, based on AP-42, ratio in Appendix I;

Percent of total sand remaining for use in section 2 of cast line = 34.8% (design basis); and

Control efficiency of baghouse = 95% (engineering estimate)

$PM_{10} = (1.23 \text{ lbs/ton}) \times (0.348) \times (1 - 0.95) = 0.02 \text{ lb/ton of aluminum poured}$

If required, compliance with the lb/ton  $PM_{10}$  limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

b. Emission Limitations:

VOC emissions shall not exceed 1.36 lbs/ton of aluminum poured and 12.77 tons/rolling, 12-month period for each emissions unit individually

Applicable Compliance Method:

The lb/ton emission limitation was developed by the following equation:

$VOC = (\text{emission factor, in lb/ton of aluminum poured}) \times (\text{percent of VOC emitted in section 2 of cast line versus total VOC emitted from section 1 and section 2 of cast line});$

Where:

Emission factor = 4 lbs VOC/ton of aluminum poured (based on Technikon #8300-005 GV, October 2005); and

Percent of VOC emitted in section 2 of cast line = 34% (engineering estimate)

$VOC = (4 \text{ lbs/ton})(0.34) = 1.36 \text{ lbs/ton}$  of aluminum poured

Compliance with the lb/ton VOC limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA [See f)(1)].

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

c. Emission Limitations:

CO emissions shall not exceed 0.193 lb/ton of aluminum poured and 1.81 tons/rolling, 12-month period for each emissions unit individually

Applicable Compliance Method:

The lb/ton emission limitation was developed by the following equation:

$CO = (\text{emission factor, in lb/ton of aluminum poured}) \times (\text{percent of CO emitted in section 2 of cast line versus total CO emitted from section 1 and section 2 of cast line});$

Where:

Emission factor = 0.57 lb PM<sub>10</sub>/ton of aluminum poured (based on Technikon #8300-005 GV, October 2005);

Percent of CO emitted in section 2 of cast line = 34% (engineering estimate)

$CO = (0.57 \text{ lb/ton}) \times (0.34) = 0.193 \text{ lb/ton}$  of aluminum poured

If required, compliance with the lb/ton CO limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

d. Emission Limitations:

SO<sub>2</sub> emissions shall not exceed 0.063 lb/ton of aluminum poured and 0.59 ton/rolling, 12-month period for each emissions unit individually

Applicable Compliance Method:

The lb/ton emission limitation was developed by the following equation:

$SO_2 = (\text{emission factor, in lb/ton of aluminum poured}) \times (\text{percent of } SO_2 \text{ emitted in section 2 of cast line versus total } SO_2 \text{ emitted from section 1 and section 2 of cast line});$

Where:

Emission factor = 0.186 lb  $SO_2$ /ton of aluminum poured (based on Technikon #8300-005 GV, October 2005);

Percent of  $SO_2$  emitted in section 2 of cast line = 34% (engineering estimate)

$SO_2 = (0.186 \text{ lb/ton}) \times (0.34) = 0.063 \text{ lb/ton of aluminum poured}$

If required, compliance with the lb/ton  $SO_2$  limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 6 of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum poured emission limitation by the maximum rolling, 12-month aluminum pour rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum pour restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

e. Emission Limitation:

Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average for each emissions unit individually.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

g) Miscellaneous Requirements

(1) None.

**10. Emissions Unit Group - Core Machines: P639, P640, P641**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
P639	Semi-Permanent Mold Core Machine #1 with wet scrubber and dust collector
P640	Semi-Permanent Mold Core Machine #2 with wet scrubber and dust collector
P641	Semi-Permanent Mold Core Machine #3 with wet scrubber and dust collector

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

(1) b)(1)i.

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.	OAC rule 3745-31-05(D)	<p>The following emission limitations are for emissions units P639, P640 and P641, combined, unless otherwise noted:</p> <p><u>Sand receiving hoppers and sand mixers:</u></p> <p>Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.045 lb/ton of sand processed.</p> <p>PM<sub>10</sub> emissions shall not exceed 1.13 tons/rolling, 12-month period</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.02 lb/ton of sand processed.</p> <p>VOC emissions shall not exceed 0.50 ton/rolling, 12-month period</p> <p><u>Core making:</u></p> <p>PM<sub>10</sub> emissions shall not exceed 0.07 lb/ton of sand processed.</p> <p>PM<sub>10</sub> emissions shall not exceed 1.76</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>tons/rolling, 12-month period</p> <p>VOC emissions shall not exceed 0.32 lb/ton of sand processed.</p> <p>VOC emissions shall not exceed 8.13 tons/rolling, 12-month period</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 6.4 lbs/hr, 0.80 lb/ton of sand processed and 20.0 tons/rolling, 12-month period</p> <p><u>Maintenance (metal cleaning of core machines):</u></p> <p>VOC emissions shall not exceed 0.09 lb/ton of sand processed.</p> <p>VOC emissions shall not exceed 2.19 tons/rolling, 12-month period</p> <p>Fugitive VOC emissions shall not exceed 0.02 lb/ton of sand processed.</p> <p>Fugitive VOC emissions shall not exceed 0.39 tons/rolling, 12-month period.</p> <p><u>Core release:</u></p> <p>VOC emissions shall not exceed 0.04 lb/ton of sand processed.</p> <p>VOC emissions shall not exceed 0.89 ton/rolling, 12-month period.</p> <p>Fugitive VOC emissions shall not exceed 0.01 lb/ton of sand processed.</p> <p>Fugitive VOC emissions shall not exceed 0.16 ton/rolling, 12-month period.</p> <p><u>Visible emissions:</u></p> <p>Visible particulate emissions (PE) from the stacks (wet scrubber and dust collector) serving this emissions unit shall</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		not exceed 10% opacity, as a six-minute average.  See b)(2)a., b)(2)b. and c)(1).
b.	ORC 3704.03(T)	See b)(2)c.
c.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)d. and b)(2)e.
d.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>10</sub> emissions from this air contaminant source since the potential to emit is less than 10 tons/year taking into account the federally enforceable limitations under OAC rule 3745-31-05(D).  See b)(2)f.
e.	OAC rule 3745-17-07(A)	See b)(2)g.
f.	OAC rule 3745-17-11(B)	See b)(2)g.
g.	OAC rule 3745-18-06(E)	See b)(2)g.
h.	OAC rule 3745-21-07(M)	See b)(2)h.
i.	OAC rule 3745-114-01 ORC 3704.03(F)	See B.2. through B.5. – Facility-Wide Terms and Conditions.

(2) Additional Terms and Conditions

- a. The emissions from the emissions units listed above shall be vented to a wet scrubber when one or more of the emissions units are in operation.
- b. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1):
  - i. PM<sub>10</sub> emissions shall not exceed 0.045 lb/ton of sand processed from sand receiving hoppers and sand mixers;
  - ii. PM<sub>10</sub> emissions shall not exceed 1.13 tons/rolling, 12-month period from sand receiving hoppers and sand mixers;
  - iii. VOC emissions shall not exceed 0.02 lb/ton of sand processed from sand receiving hoppers and sand mixers;
  - iv. VOC emissions shall not exceed 0.50 ton/rolling, 12-month period from sand receiving hoppers and sand mixers;

- v. PM<sub>10</sub> emissions shall not exceed 0.07 lb/ton of sand processed from core making;
  - vi. PM<sub>10</sub> emissions shall not exceed 1.76 tons/rolling, 12-month period from core making;
  - vii. VOC emissions shall not exceed 0.32 lb/ton of sand processed from core making;
  - viii. VOC emissions shall not exceed 8.13 tons/rolling, 12-month period from core making
  - ix. SO<sub>2</sub> emissions shall not exceed 0.80 lb/ton of sand processed from core making;
  - x. SO<sub>2</sub> emissions shall not exceed 20.0 tons/rolling, 12-month period from core making;
  - xi. VOC emissions shall not exceed 0.09 lb/ton of sand processed from maintenance (metal cleaning of core machines);
  - xii. VOC emissions shall not exceed 2.19 tons/rolling, 12-month period from maintenance (metal cleaning of core machines);
  - xiii. Fugitive VOC emissions shall not exceed 0.02 lb/ton of sand processed from maintenance (metal cleaning of core machines);
  - xiv. Fugitive VOC emissions shall not exceed 0.39 tons/rolling, 12-month period from maintenance (metal cleaning of core machines);
  - xv. VOC emissions shall not exceed 0.04 lb/ton of sand processed from core release;
  - xvi. VOC emissions shall not exceed 0.89 ton/rolling, 12-month period from core release;
  - xvii. Fugitive VOC emissions shall not exceed 0.01 lb/ton of sand processed from core release;
  - xviii. Fugitive VOC emissions shall not exceed 0.16 ton/rolling, 12-month period from core release; and
  - xix. Visible PE from the stacks (wet scrubber and dust collector) serving this emissions unit shall not exceed 10% opacity, as a six-minute average.
- c. The BAT requirements for SO<sub>2</sub> emissions under ORC 3704.03(T) have been determined to be the installation, operation and maintenance of a caustic scrubber with a design efficiency of at least 95% control for SO<sub>2</sub> [See c)(1)a.].



- d. The BAT requirements for VOC emissions under ORC 3704.03(T) have been determined to be equivalent to the tons of sand throughput restriction in c)(1)c established under OAC rule 3745-31-05(D).
- e. The BAT requirements for PM<sub>10</sub> emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be equivalent to the rolling, 12-month PM<sub>10</sub> limitation established under OAC rule 3745-31-05(D).
- f. This BAT emissions limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- g. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- h. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
- i. This emission unit is not subject to the requirements of the rule because it does not meet all of the conditions outlined in OAC rule 3745-21-07(M)(3)(a).

c) Operational Restrictions

(1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)b.]:

- a. The permittee shall install, operate and maintain a wet scrubber with a design efficiency of at least 95% control for SO<sub>2</sub>.
- b. The maximum amount of metal cleaning solvent for core machine maintenance shall not exceed 55 gallons per month.
- c. The maximum amount of core release material shall not exceed 2,923 pounds per month.
- d. The maximum annual sand processed in emissions units P639, P640 and P641, combined, shall not exceed 50,112 tons, based upon a rolling, 12-month summation of sand processed.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the sand processing levels specified in the following table:

Month(s)	<u>Maximum Allowable Cumulative Sand Usage (tons)</u>
1	5,000
1-2	10,000
1-3	15,000
1-4	20,000

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Sand Usage (tons)</u>
1-5	25,000
1-6	30,000
1-7	35,000
1-8	40,000
1-9	45,000
1-10	50,000
1-11	50,112
1-12	50,112

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be, based upon a rolling, 12-month summation of the monthly sand processed.

d) **Monitoring and/or Recordkeeping Requirements**

- (1) The permittee shall collect and record the following information each month for emissions units P639, P640 and P641, combined:
  - a. the quantity of sand processed, in tons;
  - b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the quantity of sand processed, in tons.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative quantity of sand processed, in tons, for each calendar month.

- (2) The permittee shall collect and record the following information each month for emissions units P639, P640 and P641, combined:
  - a. the quantity of metal cleaning solvent for core machine maintenance, in gallons; and
  - b. the quantity of core release material for core machines, in pounds.

- (3) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of not less than 360 gallons per minute at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.

In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable pH of the scrubber liquid, that shall be maintained in order to demonstrate compliance, is a minimum of 9.

- (4) The permittee shall properly install, operate, and maintain equipment to continuously monitor the catalyst gas scrubber liquor flow rate and the scrubber liquor pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the scrubber liquor pH and flow rate on a daily 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.

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, 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 catalyst gas scrubber liquor flow rate 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 catalyst gas scrubber liquor flow rate or pH based upon information obtained during future performance tests that demonstrate compliance with the allowable SO<sub>2</sub> emission rate for this/these emissions unit(s). 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 a minor permit modification.

- (5) The permittee shall perform weekly\* checks when this emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit (for both the wet scrubber and dust collector). The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
- a. for the first 12 calendar months of operation following the issuance of this permit , the restriction on the maximum allowable cumulative quantity of sand processed;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of sand processed;
  - c. the maximum amount of metal cleaning solvent for core machine maintenance of 55 gallons per month;
  - d. the maximum amount of core release material of 2,923 pounds per month;
  - e. each period of time (start time and date, and end time and date) when the catalyst gas scrubber liquor flow rate or the liquor pH was/were outside of the appropriate range or exceeded the applicable limit contained in this permit;
  - f. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;

- g. each incident of deviation described in e)(1)d. or e)(1)e. (above) where a prompt investigation was not conducted;
- h. each incident of deviation described in e)(1)d. or e)(1)e. where prompt corrective action, that would bring the catalyst gas scrubber liquor flow rate and/or scrubber liquor pH into compliance with the acceptable range, was determined to be necessary and was not taken; and
- i. each incident of deviation described in e)(1)d. or e)(1)e. 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.

These quarterly deviation reports shall be submitted in accordance with the Standard Terms and Conditions of this permit.

- (2) The permittee shall submit semiannual written reports that identify:
  - a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and
  - b. the root cause and any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) The permittee shall conduct, or have conducted, emission testing for emissions units P639, P640 and P641 in accordance with the following requirements:
  - a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which the emissions unit will be operated, unless an extension is approved by the Ohio EPA District Office or local air agency.
  - b. The emission testing shall be conducted to demonstrate compliance with the following emission limitations:
    - i. VOC emissions shall not exceed 0.45 lb/ton of sand processed from core making (0.32 lb/ton of sand from core making, 0.09 lb/ton of sand from metal cleaning and 0.04 lb/ton of sand from core release);
    - ii. SO<sub>2</sub> emissions shall not exceed 0.80 lb/ton of sand processed from core making; and

- iii. the wet scrubber design control efficiency of at least 95% for SO<sub>2</sub> emissions based on the amount of SO<sub>2</sub> used in the process, as measured by the core machines, and measured emissions from the scrubber stack.
- c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:
  - i. for VOC, Methods 1-4 and 18, 25 or 25A (as applicable) of 40 CFR Part 60, Appendix A or other Methods approved by U.S. EPA.
  - ii. for SO<sub>2</sub>, Methods 1-4 and 6 of 40 CFR Part 60, Appendix A, or other Methods approved by U.S. EPA.

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

- d. The test(s) shall be conducted while the emissions unit is operating under representative conditions at or near its maximum capacity, unless otherwise specified or approved by Ohio EPA or the appropriate local air agency.
- e. During emission testing, the permittee shall also record the following information:
  - i. the pH range for the scrubbing liquor; and
  - ii. the scrubber liquor flow rate, in gallons per minute.
- f. 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).
- g. 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.
- h. 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 section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitations:

PM<sub>10</sub> emissions shall not exceed 0.045 lb/ton of sand processed and 1.13 tons/rolling, 12-month period from sand receiving hoppers and sand mixers

Applicable Compliance Method:

The lb/ton emission limitation was developed by following equation:

$PM_{10} = (\text{emission factor, in lb/1,000 lb air density}) \times (\text{air density}) \times (60 \text{ min/hr}) \times (\text{air flow, scfm}) / 1,000 \text{ lbs of air} / (\text{tons of sand per hour});$

Where:

Emission factor = 0.005 lb PM<sub>10</sub>/1,000 lb air density, based on engineering estimate (controlled basis, with dust collector efficiency of 95%);

Air density = 0.075 lb/scf (standard conditions); and

Air flow = 16,000 scfm (design basis)

Maximum tons of sand per hour = 8

$PM_{10} = (0.005) \times (0.075) \times (60) \times (16,000) / (1,000) / (8) = 0.045 \text{ lb/ton of sand processed}$

If required, compliance with the hourly PM<sub>10</sub> limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of sand processed emission limitation by the maximum rolling, 12-month sand processing rate of 50,112 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month sand processing restriction in c)(1), compliance with the rolling, 12-month emission limitation shall be demonstrated.

b. Emission Limitations:

VOC emissions shall not exceed 0.02 lb/ton of sand processed and 0.50 ton/rolling, 12-month period from sand receiving hoppers and sand mixers;



Applicable Compliance Method:

The lb/ton emission limitation was developed by multiplying the emission factor of 0.02 lb VOC/ton of sand processed (based on OCMA test data) by the maximum sand processing rate of 8 tons/hr.

If required, compliance with the lb/ton limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of sand processed emission limitation by the maximum rolling, 12-month sand processing rate of 50,112 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month sand processing restriction in c)(1), compliance with the rolling, 12-month emission limitation shall be demonstrated.

c. Emission Limitations:

PM<sub>10</sub> emissions shall not exceed 0.07 lb/ton of sand processed and 1.76 tons/rolling, 12-month period from core making

Applicable Compliance Method:

The lb/ton emission limitation was developed by following equation:

PM<sub>10</sub> = (emission factor, in lb/1,000 lb air density) x (air density) x (60 min/hr) x (wet scrubber air flow, scfm)/1,000 lbs of air/(tons of sand per hour);

Where:

Emission factor = 0.005 lb PM<sub>10</sub>/1,000 lb air density, based on engineering estimate (controlled basis, with scrubber PM<sub>10</sub> control efficiency of 30%);

Air density = 0.075 lb/scf (standard conditions); and

Air flow = 25,000 scfm (design basis)

Maximum tons of sand per hour = 8

PM<sub>10</sub> = (0.005) x (0.075) x (60) x (25,000)/(1,000)/(8) = 0.07 lb/ton of sand processed

If required, compliance with the hourly PM<sub>10</sub> limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or as amended or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of sand processed emission limitation by the maximum 12-month sand processing rate of 50,112 tons, and then dividing by 2,000 lbs/ton. Therefore,



provided compliance is shown with the rolling, 12-month sand processing restriction in c)(1), compliance with the rolling, 12-month emission limitation shall be demonstrated.

d. Emission Limitations:

VOC emissions shall not exceed 0.32 lb/ton of sand processed and 8.13 tons/rolling, 12-month period from core making

Applicable Compliance Method:

The lb/ton emission limitation is based on an emission factor of 0.3243 lb VOC/ton of sand processed (based on Technikon #8300-004 GV emission factor). The wet scrubber does not control VOC emissions, thus, all VOC emissions are assumed to be uncontrolled.

Compliance with the lb VOC/ton of sand processed emission limitation shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A (as applicable) of 40 CFR Part 60, Appendix A or as amended or other Methods approved by U.S. EPA. Alternative or equivalent methods can be used with the approval of the Director [See f)(1)].

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of sand processed emission limitation by the maximum rolling, 12-month sand processing rate of 50,112 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month sand processing restriction in c)(1), compliance with the rolling, 12-month emission limitation shall be demonstrated.

e. Emission Limitations:

SO<sub>2</sub> emissions shall not exceed 6.4 lbs/hr, 0.80 lb/ton of sand processed and 20.0 tons/rolling, 12-month period from core making

Applicable Compliance Method:

The lb/ton emission limitation was developed by following equation:

SO<sub>2</sub> = (emission factor, in lb/ton of sand processed) x (1 – control efficiency of wet scrubber for SO<sub>2</sub> emissions);

Where:

Emission factor = 16 lb SO<sub>2</sub>/ton of sand processed (design basis); and

Control efficiency of wet scrubber = 95% for SO<sub>2</sub> emissions\*

SO<sub>2</sub> = (16) x (1 – 0.95) = 0.8 lb/ton of sand processed

Compliance with the lb SO<sub>2</sub>/ton of sand processed emission limitation and the wet scrubber control efficiency shall be demonstrated based on the results of

emission testing conducted in accordance with Methods 1-4 and 6 of 40 CFR Part 60, Appendix A or as amended or other Methods approved by U.S. EPA. Alternative or equivalent methods can be used with the approval of the Director [See f)(1)].

Compliance with the hourly SO<sub>2</sub> emission limitation shall be demonstrated by multiplying an emission factor of 16 lbs/ton of sand processed by the maximum hourly sand process rate (8 tons/hr) and then multiplying by a control factor of (1-0.95\*). The calculation to show compliance can use a control factor based on stack test data.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of sand processed emission limitation by the maximum rolling, 12-month sand processing rate of 50,112 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month sand processing restriction in c)(1), compliance with the rolling, 12-month emission limitation shall be demonstrated.

f. Emission Limitations:

VOC emissions shall not exceed 0.09 lb/ton of sand processed and 2.19 tons/rolling, 12-month period from maintenance (metal cleaning of core machines).

Applicable Compliance Method:

The lb/ton emission limitation is based on a maximum usage rate of metal cleaning solvent, the VOC content, the amount captured and the amount of sand processed.

lb/ton emission rate = (VOC content of the cleaning solvent) x (annual usage rate, in gallons) x (amount of material captured and ducted to scrubber) / (annual tons of aluminum processed)

Where:

Solvent density = 7.82 lbs VOC/gallon

Annual usage = (55 gallons/month) x (12 months) = 660 gallons/yr

It is assumed that 85% of the solvent is captured and ducted to the scrubber.

Annual Sand Usage = 50,112 tons

lb/ton emission rate = (7.82 lbs VOC/gallon) x (660 gallons/yr) x (.85% Capture) / (50,112 tons sand/yr) = 0.09 lbs VOC/ton of sand processed.

If required, compliance with the lb/ton limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton emission rate of 0.09 lb VOC/ton of sand processed by 50,112 tons of sand processed/yr then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the operational restriction of 55 gallons of metal cleaning solvent per month in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

g. Emission Limitations:

Fugitive VOC emissions shall not exceed 0.02 lb/ton of sand processed and 0.39 tons/rolling, 12-month period from maintenance (metal cleaning of core machines). Applicable Compliance Method:

The lb/ton emission limitation is based on a maximum usage rate of metal cleaning solvent, the VOC content, the amount captured and the amount of sand processed.

lb/ton emission rate = (VOC content of the cleaning solvent) x (annual usage rate, in gallons) x (amount of material not captured and ducted to scrubber) / (annual tons of aluminum processed)

Where:

Solvent density = 7.82 lbs VOC/gallon

Annual usage = (55 gallons/month) x (12 months) = 660 gallons/yr

It is assumed that 15 % (1 - 85%) of the solvent is not captured and ducted to the scrubber.

Annual Sand Usage = 50,112 tons

lb/ton emission rate = (7.82 lbs VOC/gallon) x (660 gallons/yr) x (15% Capture) / (50,112 tons sand/yr) = 0.02 lb VOC/ton of sand processed.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton emission rate of 0.09 lb VOC/ton of sand processed by 50,112 tons of sand processed/yr then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the operational restriction of 55 gallons of metal cleaning solvent per month in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

h. Emission Limitations:

VOC emissions shall not exceed 0.04 lb/ton of sand processed and 0.89 tons/rolling, 12-month period from Core Release Materials.

Applicable Compliance Method:

The lb/ton emission limitation is based on a maximum usage rate of core release material, the VOC content, the amount captured and the amount of sand processed.

$\text{lb/ton emission rate} = (\text{annual usage rate, in lbs}) \times (\text{VOC content of the core release material}) \times (\text{amount of captured and ducted to scrubber}) / (\text{annual tons of aluminum processed})$

Where:

Annual Core Release Usage = 35,078 lbs/yr

VOC content = 6%, by weight

It is assumed that 85% of the VOCs are captured and ducted to the scrubber.

Annual Sand Usage = 50,112 tons/yr

$\text{lb/ton emission rate} = (35,078 \text{ lbs/yr}) \times (6\%, \text{ by weight}) \times (85\% \text{ Capture}) / (50,112 \text{ tons sand/yr}) = 0.04 \text{ lbs VOC/ton of sand processed.}$

If required, compliance with the lb/ton limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton emission rate of 0.09 lb VOC/ton of sand processed by 50,112 tons of sand processed/yr then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the operational restriction of 55 gallons of metal cleaning solvent per month in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

i. Emission Limitations:

Fugitive VOC emissions shall not exceed 0.01 lb/ton of sand processed and 0.16 tons/rolling, 12-month period from Core Release Materials.

Applicable Compliance Method:

The lb/ton emission limitation is based on a maximum usage rate of core release material, the VOC content, the amount not captured and the amount of sand processed.

$\text{lb/ton emission rate} = (\text{annual usage rate, in lbs}) \times (\text{VOC content of the core release material}) \times (\text{amount not captured and ducted to scrubber}) / (\text{annual tons of aluminum processed})$

Where:



Annual Core Release Usage = 35,078 lbs/yr

VOC content = 6%, by weight

It is assumed that 15% (1 - 85%) of the VOCs are captured and ducted to the scrubber.

Annual Sand Usage = 50,112 tons/yr

lb/ton emission rate =  $(35,078 \text{ lbs/yr}) \times (6\%, \text{ by weight}) \times (15\% \text{ Capture}) / (50,112 \text{ tons sand/yr}) = 0.01 \text{ lbs VOC/ton of sand processed.}$

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton emission rate of 0.01 lb VOC/ton of sand processed by 50,112 tons of sand processed/yr then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the operational restriction of 55 gallons of metal cleaning solvent per month in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

j. Emission Limitation:

Visible PE from the stacks (wet scrubber and dust collector) serving this emissions unit shall not exceed 10% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

g) Miscellaneous Requirements

(1) None.

**11. Emissions Unit Group – Rough Finishing Operations: P649, P650**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
P649	Castline #1- De-Gate, Surface Milling and Hammer Mill De-Core with Baghouse
P650	Castline #2- De-Gate, Surface Milling and Hammer Mill De-Core with Baghouse

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
- (1) b)(1)g.
- 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.	OAC rule 3745-31-05(D)	<p>Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.01 lb per ton of aluminum processed and 0.07 ton/rolling, 12-month period from de-gate and surface milling, combined</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.51 lb per ton of aluminum processed and 4.76 tons/rolling, 12-month period, from rough finishing and mist coolant operations, combined</p> <p>Visible particulate emissions (PE) from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average</p> <p>See b)(2)a. and c)(1).</p>
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)b. and b)(2)c.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>10</sub> and VOC emissions from this air contaminant source since the potential to emit for each



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		pollutant is less than 10 tons/year taking into account the federally enforceable limitations under OAC rule 3745-31-05(D).  See b)(2)d.
d.	OAC rule 3745-17-07(A)	See b)(2)e.
e.	OAC rule 3745-17-11(B)	See b)(2)e.
f.	OAC rule 3745-21-07(M)	See b)(2)f.
g.	OAC rule 3745-114-01 ORC 3704.03(F)	See B.2 through B.5. – Facility-Wide Terms and Conditions.

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1):
  - i. PM<sub>10</sub> emissions shall not exceed 0.01 lb per ton of aluminum poured and 0.07 ton/rolling, 12-month period from de-gate and surface milling, combined;
  - ii. VOC emissions shall not exceed 0.51 lb per ton of aluminum poured and 4.76 ton/rolling, 12-month period from rough finishing and mist coolant operations, combined; and
  - iii. Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.
- b. The BAT requirements for PM<sub>10</sub> and VOC emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be equivalent to the rolling, 12-month PM<sub>10</sub> and VOC limitations established under OAC rule 3745-31-05(D).
- c. This BAT emissions limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- d. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- e. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).

- f. This emission unit is not subject to the requirements of the rule because it does not meet all of the conditions outlined in OAC rule 3745-21-07(M)(3)(a).

c) Operational Restrictions

- (1) The following operational restriction has been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.]:

- a. The permittee shall install, operate and maintain a baghouse with a design efficiency of at least 95% control of PM<sub>10</sub>.

The maximum annual aluminum pouring in each emission unit P649 and P650, shall not exceed 18,792 tons, based upon a rolling, 12-month summation of aluminum poured.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the aluminum pouring levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Aluminum Pouring (tons)</u>
1	1,879.2
1-2	3,758.4
1-3	5,637.6
1-4	7,516.8
1-5	9,396.0
1-6	11,275.2
1-7	13,154.4
1-8	15,033.6
1-9	16,912.8
1-10	18,792.0
1-11	18,792.0
1-12	18,792.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum pouring restriction shall be, based upon a rolling, 12-month summation of the monthly aluminum poured.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform weekly\* checks when this emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;

- b. the identification of the stack observed;
- c. the color of the emissions;
- d. the total duration of any visible emission observation; and
- e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

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

- a. the quantity of aluminum processed, in tons; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the quantity of aluminum processed, in tons.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative quantity of aluminum processed, in tons, for each calendar month.

e) Reporting Requirements

(1) The permittee shall submit semiannual written reports that identify:

- a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and
- b. the root cause and any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

- a. for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of aluminum processed; and
- b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of aluminum processed.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

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

a. Emission Limitations:

PM<sub>10</sub> emissions shall not exceed 0.01 lb per ton of aluminum processed and 0.07 ton/rolling, 12-month period from de-gate and surface milling, combined

Applicable Compliance Method:

The lb/ton emission limitation was developed by the following equation:

PM<sub>10</sub> = (emission factor, in lb/ton of aluminum processed) x (1 – control efficiency of baghouse);

Where:

Emission factor = 0.15 lbs PM<sub>10</sub>/ton of aluminum process, based on GM Test Data;

Control efficiency of baghouse = 95% (engineering estimate)

PM<sub>10</sub> = (0.15 lbs/ton) x (1 – 0.95) = 0.01 lb/ton of aluminum poured

If required, compliance with the lb/ton PM<sub>10</sub> limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum processed emission limitation by the maximum rolling, 12-month aluminum process rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum process restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

b. Emission Limitations:

VOC emissions shall not exceed 0.51 lb per ton of aluminum processed and 4.76 tons/rolling, 12-month period from rough finishing and mist coolant operations, combined



Applicable Compliance Method:

The process rate emission limitation was developed by the following equations:

Total VOC Emission Factor = VOC Emission Factor from Aluminum Processed +  
VOC Emission Factor from Mist Coolant Usage

Where:

Emission factor = 0.5 lb VOC/ton of aluminum processed (engineering estimate);  
and

VOC Emission Factor from mist coolant = (VOC content of the De-Gate  
operations cutting fluid) x (annual usage rate, in gallons) / (annual tons of  
aluminum processed)

VOC Emission Factor from mist coolant =  $(0.10) \times (1,200) / (18,792) = 0.01$  lb  
VOC per ton aluminum processed

Where:

VOC content = 0.10 lb VOC/gal; and

Annual coolant usage rate = 1,200 gal/yr

Annual aluminum processed = 18,792 tons/yr

Total VOC Emission Factor =  $0.5 + 0.01 = 0.51$  lbs VOC per ton aluminum  
processed.

If required, compliance with the lb/hr emission limitation shall be determined  
through emission testing conducted in accordance with Methods 1-4 and 18, 25  
or 25A of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the  
lb/ton of aluminum processed emission limitation by the maximum rolling, 12-  
month aluminum process rate of 18,792 tons, and then dividing by 2,000 lbs/ton.  
Therefore, provided compliance is shown with the rolling, 12-month aluminum  
process restriction in c)(1)b., compliance with the rolling, 12-month emission  
limitation shall be demonstrated.

c. Emission Limitation:

Visible PE from the stack associated with this emissions unit shall not exceed  
10% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in  
accordance with Method 9 of 40 CFR, Part 60, Appendix A.



**Final Permit-to-Install**  
GM Defiance Casting Operations  
**Permit Number:** P0119129  
**Facility ID:** 0320010001  
**Effective Date:** 10/1/2015

- g) Miscellaneous Requirements
  - (1) None.

**12. Emissions Unit Group – De-Rise, Pin Gage and De-Flash: P651, P652**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
P651	Castline #1 – De-Rise, Pin Gage and De-Flash with Mist Eliminator or Cartridge Collector
P652	Castline #2 – De-Rise, Pin Gage and De-Flash with Mist Eliminator or Cartridge Collector

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

(1) b)(1)g.

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.

	<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
a.	OAC rule 3745-31-05(D)	<p>Particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions shall not exceed 0.008 lb per ton of aluminum processed and 0.07 ton/rolling, 12-month period</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.007 lb per ton of aluminum processed and 0.06 ton/rolling, 12-month period</p> <p>Visible particulate emissions (PE) from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.</p> <p>See b)(2)a. and c)(1).</p>
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)b. and b)(2)c.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>10</sub> and VOC emissions from this air contaminant source since the potential to emit for each pollutant is less than 10 tons/year taking into account the federally enforceable limitations under OAC rule 3745-31-



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		05(D).  See b)(2)d.
d.	OAC rule 3745-17-07(A)	See b)(2)e.
e.	OAC rule 3745-17-11(B)	See b)(2)e.
f.	OAC rule 3745-21-07(M)	See b)(2)f.
g.	OAC rule 3745-114-01 ORC 3704.03(F)	See B.2. through B.5. – Facility-Wide Terms and Conditions.

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restriction(s) contained in c)(1):
  - i. PM<sub>10</sub> emissions shall not exceed 0.008 lb per ton of aluminum processed and 0.07 ton/rolling, 12-month period;
  - ii. VOC emissions shall not exceed 0.007 lb per ton of aluminum processed and 0.06 ton/rolling, 12-month period; and
  - iii. Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.
- b. The BAT requirements for PM<sub>10</sub> and VOC emissions under OAC rule 3745-31-05(A)(3), as effective 6/30/08, have been determined to be equivalent to the rolling, 12-month PM<sub>10</sub> and VOC limitations established under OAC rule 3745-31-05(D).
- c. This BAT emissions limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- d. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- e. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
- f. This emission unit is not subject to the requirements of the rule because it does not meet all of the conditions outlined in OAC rule 3745-21-07(M)(3)(a).

c) Operational Restrictions

(1) The following operational restriction has been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.]:

- a. The permittee shall install, operate and maintain a mist eliminator or cartridge collector with a design efficiency of at least 95% control of PM<sub>10</sub>.
- b. The maximum annual aluminum pouring in each emissions unit (i.e., P651 and P652) shall not exceed 18,792 tons, based upon a rolling, 12-month summation of aluminum poured.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the aluminum pouring levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Aluminum Pouring (tons)</u>
1	1,879.2
1-2	3,758.4
1-3	5,637.6
1-4	7,516.8
1-5	9,396.0
1-6	11,275.2
1-7	13,154.4
1-8	15,033.6
1-9	16,912.8
1-10	18,792.0
1-11	18,792.0
1-12	18,792.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum pouring restriction shall be, based upon a rolling, 12-month summation of the monthly aluminum poured.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall perform weekly\* checks when this emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
- b. the identification of the stack observed;
- c. the color of the emissions;

- d. the total duration of any visible emission observation; and
- e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

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

- a. the quantity of aluminum processed, in tons; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the quantity of aluminum processed, in tons.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative quantity of aluminum processed, in tons for each calendar month.

e) Reporting Requirements

(1) The permittee shall submit semiannual written reports that identify:

- a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and
- b. the root cause and any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

- a. for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of aluminum processed; and
- b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of aluminum processed.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

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

a. Emission Limitations:

PM<sub>10</sub> emissions shall not exceed 0.008 lb per ton of aluminum processed and 0.07 ton/rolling, 12-month period

Applicable Compliance Method:

The process rate emission limitation was developed by the following equations:

PM<sub>10</sub> = (emission factor, in lb/1,000 lb air density) x (air density) x (60 min/hr)(air flow, scfm)/(1,000 lbs of air) x (annual operating hours) / (annual tons of aluminum processed);

Where:

Emission factor = 0.001 lb PM<sub>10</sub>/1,000 lb air density, based on GM stack testing of similar source (controlled basis, with mist eliminator or cartridge collector efficiency of 95%);

Air density = 0.075 lb/scf (standard conditions); and

Air flow = 5,000 scfm (design basis)

Annual operation = 6,264 hrs

Annual aluminum processed = 18,792 tons/yr

PM<sub>10</sub> = (0.001) x (0.075) x (60) x (5,000)/1,000 x (6,264) / 18,792 = 0.008 lb per ton of aluminum processed

If required, compliance with the hourly PM<sub>10</sub> limitation shall be determined through emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum processed emission limitation by the maximum rolling, 12-month aluminum process rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum process restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.



b. Emission Limitations:

VOC emissions shall not exceed 0.007 lb VOC per ton of aluminum processed and 0.06 ton/rolling, 12-month period

Applicable Compliance Method:

The process rate emission limitation was developed by the following equations:

VOC Emission Factor from cutting head coolant = (VOC content of the cutting fluid) x (annual usage rate, in gallons) / (annual tons of aluminum processed)

VOC Emission Factor from mist coolant =  $(0.10) \times (1,200) / (18,792) = 0.007$  lb VOC per ton aluminum processed

Where:

VOC content = 0.10 lb VOC/gal; and

Annual coolant usage rate = 1,200 gal/yr

Annual aluminum processed = 18,792 tons/yr

If required, compliance with the lb/hr emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR, Part 60, Appendix A or other Methods approved by U.S. EPA.

The rolling, 12-month period emission limitation was developed by multiplying the lb/ton of aluminum processed emission limitation by the maximum rolling, 12-month aluminum process rate of 18,792 tons, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the rolling, 12-month aluminum process restriction in c)(1)b., compliance with the rolling, 12-month emission limitation shall be demonstrated.

c. Emission Limitation:

Visible PE from the stack associated with this emissions unit shall not exceed 10% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with Method 9 of 40 CFR, Part 60, Appendix A.

g) Miscellaneous Requirements

(1) None.