



State of Ohio Environmental Protection Agency

STREET ADDRESS:

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50 W. Town St., Suite 700
Columbus, Ohio 43215

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www.epa.state.oh.us

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P.O. Box 1049
Columbus, OH 43216-1049

1/26/2009

Matthew Greene
Solsil Inc
P.O. Box 171
Waterford, OH 45786

RE: FINAL AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 0684005001
Permit Number: P0103722
Permit Type: Initial Installation
County: Washington

Certified Mail

No	TOXIC REVIEW
No	PSD
Yes	SYNTHETIC MINOR
No	CEMS
No	MACT
No	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED

Dear Permit Holder:

Enclosed please find a final Air Pollution Permit-to-Install and Operate ("PTIO") which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully.

Ohio EPA maintains a document entitled "Frequently Asked Questions about the PTIO". The document can be downloaded from the DAPC Web page, www.epa.state.oh.us/dapc, from the "Permits" link. This document contains additional information related to your permit, such as what activities are covered under the PTIO, who has enforcement authority over the permit and Ohio EPA's authorization to inspect your facility and records. Please contact the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469 if you need assistance.

The issuance of this PTIO is a final action of the Director and may be appealed to the Environmental Review Appeals Commission ("ERAC") under Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and describe the action complained of and the grounds for the appeal. The appeal must be filed with the ERAC within thirty (30) days after notice of the Director's action. A filing fee of \$70.00 must be submitted to the ERAC with the appeal, although the ERAC, has discretion to reduce the amount of the filing fee if you can demonstrate (by affidavit) that payment of the full amount of the fee would cause extreme hardship. If you file an appeal of this action, you must notify Ohio EPA of the filing of the appeal (by providing a copy to the Director) within three (3) days of filing your appeal with the ERAC. Ohio EPA requests that a copy of the appeal also be provided to the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the ERAC at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, OH 43215

If you have any questions regarding this permit, please contact the Ohio EPA DAPC, Southeast District Office. This permit has been posted to the Division of Air Pollution Control (DAPC) Web page www.epa.state.oh.us/dapc.

Sincerely,

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

Cc: Ohio EPA-SEDO

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director



**State of Ohio Environmental Protection Agency
Division of Air Pollution Control**

FINAL

**Air Pollution Permit-to-Install and Operate
for
Solsil Inc**

Facility ID: 0684005001
Permit Number: P0103722
Permit Type: Initial Installation
Issued: 1/26/2009
Effective: 1/26/2009
Expiration: 1/26/2014



Air Pollution Permit-to-Install and Operate
for
Solsil Inc

Table of Contents

- Authorization 1
- A. Standard Terms and Conditions 4
 - 1. What does this permit-to-install and operate ("PTIO") allow me to do?..... 5
 - 2. Who is responsible for complying with this permit? 5
 - 3. What records must I keep under this permit? 5
 - 4. What are my permit fees and when do I pay them?..... 5
 - 5. When does my PTIO expire, and when do I need to submit my renewal application? 5
 - 6. What happens to this permit if my project is delayed or I do not install or modify my source? 6
 - 7. What reports must I submit under this permit? 6
 - 8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit? 6
 - 9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?... 6
 - 10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report? 7
 - 11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located? 7
 - 12. What happens if one or more emissions units operated under this permit is/are shut down permanently? 7
 - 13. Can I transfer this permit to a new owner or operator?..... 7
 - 14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"? 8
 - 15. What happens if a portion of this permit is determined to be invalid? 8
- B. Facility-Wide Terms and Conditions..... 9
- C. Emissions Unit Terms and Conditions 11
 - 1. P901, Furnace #20.....12
 - 2. P902, Furnace #21.....13
 - 3. P903, Furnace #22.....24
 - 4. P904, Furnace #23.....30
 - 5. P905, Furnace #24.....36
 - 6. P906, Furnace #25.....41
 - 7. P907, Furnace #26.....46
 - 8. P908, Furnace #27.....51
 - 9. P909, Furnace #28.....56
 - 10. P910, Furnace #29.....61
 - 11. P911, Crushing Line #2.....66



State of Ohio Environmental Protection Agency
Division of Air Pollution Control

Final Permit-to-Install and Operate
Permit Number: P0103722
Facility ID: 0684005001
Effective Date: 1/26/2009

Authorization

Facility ID: 0684005001
Application Number(s): A0035661
Permit Number: P0103722
Permit Description: FEPTIO to install 10 new 1,000 kW induction furnaces and 1 crushing/sizing line
Permit Type: Initial Installation
Permit Fee: \$2,500.00
Issue Date: 1/26/2009
Effective Date: 1/26/2009
Expiration Date: 1/26/2014
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

Solsil Inc
3505 Wells Rd
Waterford, OH 45750

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

Ohio EPA District Office or local air agency responsible for processing and administering your permit:

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

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski
Director



Authorization (continued)

Permit Number: P0103722
Permit Description: FEPTIO to install 10 new 1,000 kW induction furnaces and 1 crushing/sizing line

Permits for the following emissions unit(s) or groups of emissions units are in this document as indicated below:

Emissions Unit ID:	P901
Company Equipment ID:	Furnace #20
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P902
Company Equipment ID:	Furnace #21
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P903
Company Equipment ID:	Furnace #22
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P904
Company Equipment ID:	Furnace #23
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P905
Company Equipment ID:	Furnace #24
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P906
Company Equipment ID:	Furnace #25
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P907
Company Equipment ID:	Furnace #26
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P908
Company Equipment ID:	Furnace #27
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P909
Company Equipment ID:	Furnace #28
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P910
Company Equipment ID:	Furnace #29
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P911
Company Equipment ID:	Crushing Line #2
Superseded Permit Number:	



State of Ohio Environmental Protection Agency
Division of Air Pollution Control

Final Permit-to-Install and Operate

Permit Number: P0103722

Facility ID: 0684005001

Effective Date: 1/26/2009

General Permit Category and Type: Not Applicable



State of Ohio Environmental Protection Agency
Division of Air Pollution Control

Final Permit-to-Install and Operate

Permit Number: P0103722

Facility ID: 0684005001

Effective Date: 1/26/2009

A. Standard Terms and Conditions



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

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

2. Who is responsible for complying with this permit?

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

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

3. What records must I keep under this permit?

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

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

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

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

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

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

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

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.



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

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

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

7. What reports must I submit under this permit?

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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



State of Ohio Environmental Protection Agency
Division of Air Pollution Control

Final Permit-to-Install and Operate

Permit Number: P0103722

Facility ID: 0684005001

Effective Date: 1/26/2009

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

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

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

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

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



State of Ohio Environmental Protection Agency
Division of Air Pollution Control

Final Permit-to-Install and Operate

Permit Number: P0103722

Facility ID: 0684005001

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B. Facility-Wide Terms and Conditions



State of Ohio Environmental Protection Agency
Division of Air Pollution Control

Final Permit-to-Install and Operate

Permit Number: P0103722

Facility ID: 0684005001

Effective Date: 1/26/2009

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) None.
 - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (1) None.



State of Ohio Environmental Protection Agency
Division of Air Pollution Control

Final Permit-to-Install and Operate

Permit Number: P0103722

Facility ID: 0684005001

Effective Date: 1/26/2009

C. Emissions Unit Terms and Conditions



1. P901, Furnace #20

Operations, Property and/or Equipment Description:

Furnace #20 controlled with baghouse #1 (1,000 kW induction furnace producing high purity Si metal including pouring and casting).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(2)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See Section (2)b. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (#20 furnace) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hood serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.



If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

b. the probable cause of each deviation (excursion);

c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

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

a. The emission testing shall be conducted within 3 months after start-up.



b. The emission testing shall be conducted to demonstrate compliance with the allowable concentration of particulate emissions in the exhaust stream

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

Particulates Method 1-5 40 CFR Part 60, Appendix A

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 P901, P902, P903, and P904 are simultaneously operating at or near their maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or 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 emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:

a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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



b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b)

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$(2.07 \text{ lbs/hour}) \times (0.95 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.09 \text{ ton/year.}$



Fugitive Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.05 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.45 \text{ ton/year}$$

Total Emissions:

$$0.09 \text{ ton/year} + 0.45 \text{ ton/year} = 0.53 \text{ ton/year, as a rolling, 12-month summation.}$$

where:

2.07 lbs of PM/PM₁₀ per hour (based on data generated from fume/dust collected in baghouse during October 2006 engineering test as submitted in air PTI application. Factor scaled up to be conservative and account for variability in fume generation);

95% closed hooding/baghouse capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

(1) None.



2. P902, Furnace #21

Operations, Property and/or Equipment Description:

Furnace #21 controlled with baghouse #1 (1,000 kW induction furnace producing high purity Si metal including pouring and casting).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(2)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See Section (2)b. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (#21 furnace) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hood serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.



If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

b. the probable cause of each deviation (excursion);

c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

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

a. The emission testing shall be conducted within 3 months after start-up.



- b. The emission testing shall be conducted to demonstrate compliance with the allowable concentration of particulate emissions in the exhaust stream
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

Particulates Method 1-5 40 CFR Part 60, Appendix A

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 P901, P902, P903, and P904 are simultaneously operating at or near their maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or 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 emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:

a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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



b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b)

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$(2.07 \text{ lbs/hour}) \times (0.95 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.09 \text{ ton/year.}$



Fugitive Emissions:

$(2.07 \text{ lbs/hour}) \times (0.05 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.45 \text{ ton/year}$

Total Emissions:

$0.09 \text{ ton/year} + 0.45 \text{ ton/year} = 0.53 \text{ ton/year}$, as a rolling, 12-month summation.

where:

2.07 lbs of PM/PM₁₀ per hour (based on data generated from fume/dust collected in baghouse during October 2006 engineering test as submitted in air PTI application. Factor scaled up to be conservative and account for variability in fume generation);

95% closed hooding/baghouse capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

(1) None.



3. P903, Furnace #22

Operations, Property and/or Equipment Description:

Furnace #22 controlled with baghouse #1 (1,000 kW induction furnace producing high purity Si metal including pouring and casting).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(2)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See Section (2)b. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (#22 furnace) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hood serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.



If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

b. the probable cause of each deviation (excursion);

c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

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



- a. The emission testing shall be conducted within 3 months after start-up.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable concentration of particulate emissions in the exhaust stream
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

Particulates Method 1-5 40 CFR Part 60, Appendix A

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 P901, P902, P903, and P904 are simultaneously operating at or near their maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or 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 emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:

- a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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



b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b)

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$(2.07 \text{ lbs/hour}) \times (0.95 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.09 \text{ ton/year.}$



Fugitive Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.05 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.45 \text{ ton/year}$$

Total Emissions:

$$0.09 \text{ ton/year} + 0.45 \text{ ton/year} = 0.53 \text{ ton/year, as a rolling, 12-month summation.}$$

where:

2.07 lbs of PM/PM₁₀ per hour (based on data generated from fume/dust collected in baghouse during October 2006 engineering test as submitted in air PTI application. Factor scaled up to be conservative and account for variability in fume generation);

95% closed hooding/baghouse capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

- (1) None.



4. P904, Furnace #23

Operations, Property and/or Equipment Description:

Furnace #23 controlled with baghouse #1 (1,000 kW induction furnace producing high purity Si metal including pouring and casting).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(2)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See Section (2)b. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (#23 furnace) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hood serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.



If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

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

- a. The emission testing shall be conducted within 3 months after start-up.



b. The emission testing shall be conducted to demonstrate compliance with the allowable concentration of particulate emissions in the exhaust stream

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

Particulates Method 1-5 40 CFR Part 60, Appendix A

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 P901, P902, P903, and P904 are simultaneously operating at or near their maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or 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 emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:

a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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



b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b)

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.95 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.09 \text{ ton/year.}$$



Fugitive Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.05 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.45 \text{ ton/year}$$

Total Emissions:

$$0.09 \text{ ton/year} + 0.45 \text{ ton/year} = 0.53 \text{ ton/year, as a rolling, 12-month summation.}$$

where:

2.07 lbs of PM/PM₁₀ per hour (based on data generated from fume/dust collected in baghouse during October 2006 engineering test as submitted in air PTI application. Factor scaled up to be conservative and account for variability in fume generation);

95% closed hooding/baghouse capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

- (1) None.



5. P905, Furnace #24

Operations, Property and/or Equipment Description:

Furnace #24 controlled with baghouse #2 (1,000 kW induction furnace producing high purity Si metal including pouring and casting).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(2)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See Section (2)b. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (#24 furnace) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hood serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.



If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

b. the probable cause of each deviation (excursion);

c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

(1) Compliance with the emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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

b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b)

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.53 ton per year, as a rolling, 12-month summation.



Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.95 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.09 \text{ ton/year.}$$

Fugitive Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.05 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.45 \text{ ton/year}$$

Total Emissions:

$$0.09 \text{ ton/year} + 0.45 \text{ ton/year} = 0.53 \text{ ton/year, as a rolling, 12-month summation.}$$

where:

2.07 lbs of PM/PM₁₀ per hour (based on data generated from fume/dust collected in baghouse during October 2006 engineering test as submitted in air PTI application. Factor scaled up to be conservative and account for variability in fume generation);

95% closed hooding/baghouse capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

- (1) None.



6. P906, Furnace #25

Operations, Property and/or Equipment Description:

Furnace #25 controlled with baghouse #2 (1,000 kW induction furnace producing high purity Si metal including pouring and casting).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(2)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See Section (2)b. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (#25 furnace) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hood serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.



If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

b. the probable cause of each deviation (excursion);

c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

(1) Compliance with the emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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

b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b)

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.



e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.95 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.09 \text{ ton/year.}$$

Fugitive Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.05 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.45 \text{ ton/year}$$

Total Emissions:

$$0.09 \text{ ton/year} + 0.45 \text{ ton/year} = 0.53 \text{ ton/year, as a rolling, 12-month summation.}$$

where:

2.07 lbs of PM/PM₁₀ per hour (based on data generated from fume/dust collected in baghouse during October 2006 engineering test as submitted in air PTI application. Factor scaled up to be conservative and account for variability in fume generation);

95% closed hooding/baghouse capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

(1) None.



7. P907, Furnace #26

Operations, Property and/or Equipment Description:

Furnace #26 controlled with baghouse #2 (1,000 kW induction furnace producing high purity Si metal including pouring and casting).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(2)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See Section (2)b. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (#26 furnace) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hood serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.



If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

(1) Compliance with the emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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

b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b)

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.



e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.95 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.09 \text{ ton/year.}$$

Fugitive Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.05 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.45 \text{ ton/year}$$

Total Emissions:

$$0.09 \text{ ton/year} + 0.45 \text{ ton/year} = 0.53 \text{ ton/year, as a rolling, 12-month summation.}$$

where:

2.07 lbs of PM/PM₁₀ per hour (based on data generated from fume/dust collected in baghouse during October 2006 engineering test as submitted in air PTI application. Factor scaled up to be conservative and account for variability in fume generation);

95% closed hooding/baghouse capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

(1) None.



8. P908, Furnace #27

Operations, Property and/or Equipment Description:

Furnace #27 controlled with baghouse #2 (1,000 kW induction furnace producing high purity Si metal including pouring and casting).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(2)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See Section (2)b. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (#27 furnace) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hood serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.



If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

(1) Compliance with the emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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

b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b)

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.



e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.95 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.09 \text{ ton/year.}$$

Fugitive Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.05 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.45 \text{ ton/year}$$

Total Emissions:

$$0.09 \text{ ton/year} + 0.45 \text{ ton/year} = 0.53 \text{ ton/year, as a rolling, 12-month summation.}$$

where:

2.07 lbs of PM/PM₁₀ per hour (based on data generated from fume/dust collected in baghouse during October 2006 engineering test as submitted in air PTI application. Factor scaled up to be conservative and account for variability in fume generation);

95% closed hooding/baghouse capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

(1) None.



9. P909, Furnace #28

Operations, Property and/or Equipment Description:

Furnace #28 controlled with baghouse #3 (1,000 kW induction furnace producing high purity Si metal including pouring and casting).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(2)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See Section (2)b. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (#28 furnace) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hood serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.



If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

(1) Compliance with the emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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

b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b)

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.



e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.95 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.09 \text{ ton/year.}$$

Fugitive Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.05 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.45 \text{ ton/year}$$

Total Emissions:

$$0.09 \text{ ton/year} + 0.45 \text{ ton/year} = 0.53 \text{ ton/year, as a rolling, 12-month summation.}$$

where:

2.07 lbs of PM/PM₁₀ per hour (based on data generated from fume/dust collected in baghouse during October 2006 engineering test as submitted in air PTI application. Factor scaled up to be conservative and account for variability in fume generation);

95% closed hooding/baghouse capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

(1) None.



10. P910, Furnace #29

Operations, Property and/or Equipment Description:

Furnace #29 controlled with baghouse #3 (1,000 kW induction furnace producing high purity Si metal including pouring and casting).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(2)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a. below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See Section (2)b. below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (#29 furnace) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hood serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.



If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

(1) Compliance with the emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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

b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b)

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 2.29 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.



e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.95 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.09 \text{ ton/year.}$$

Fugitive Emissions:

$$(2.07 \text{ lbs/hour}) \times (0.05 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton}/2,000 \text{ lbs}) = 0.45 \text{ ton/year}$$

Total Emissions:

$$0.09 \text{ ton/year} + 0.45 \text{ ton/year} = 0.53 \text{ ton/year, as a rolling, 12-month summation.}$$

where:

2.07 lbs of PM/PM₁₀ per hour (based on data generated from fume/dust collected in baghouse during October 2006 engineering test as submitted in air PTI application. Factor scaled up to be conservative and account for variability in fume generation);

95% closed hooding/baghouse capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

(1) None.



11. P911, Crushing Line #2

Operations, Property and/or Equipment Description:

Solar grade silicon crushing and sizing number 2 line controlled by baghouse #4 and consisting of 3 conveyors, jaw crusher, rotex screener, MSI magnetic drum separator, and six stainless steel hoppers (max. 15 tons/hour).

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

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

a. None.

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

a. b)(1)f., c)(1), e)(2), and f)(1)e.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(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. 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(A)(3)(a)(ii)	See (2)a.below.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.
c.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.
d.	OAC rule 3745-17-08(B)(3)	Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent. See (2)b. below.



e.	OAC rule 3745-17-11(B)	Particulate emissions from the baghouse stack shall not exceed 25.2 pounds per hour.
f.	OAC rule 3745-31-05(D) (Synthetic minor to avoid Title V Permitting and future PSD)	Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM ₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the uncontrolled potential to emit for particulate emissions is less than ten tons per year.
- b. The permittee shall employ reasonably available control measures on this emissions unit (high-purity silicon sizing and crushing line) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee shall employ a capture system, which includes enclosures, that minimizes or eliminates visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design and vents the emissions to a baghouse that is capable of meeting the applicable requirements. Nothing in this paragraph shall prohibit the permittee from employing additional control measures to ensure compliance.

c) Operational Restrictions

- (1) Particulate emissions shall be controlled at all times through the use of a baghouse with a control efficiency of not less than 99% and the capture efficiency of not less than 95%.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the capture hoods serving this emission 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 location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and



- e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

e) Reporting Requirements

- (1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

Particulate Matter/Particulate Matter less than 10 microns in diameter (PM/PM₁₀) shall not exceed 0.53 ton per year, as a rolling, 12-month summation.

- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

f) Testing Requirements

- (1) Compliance with the emission limitations in b)(1) of the terms and conditions of this permit shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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

b. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20 percent opacity as a three-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9, with the modifications found in OAC rule 3745-17-03(B)(3)(a) and (b).

c. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 0.030 grains per dry standard cubic foot of exhaust gases or there shall be no visible particulate emissions, whichever is less stringent.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources" and/or USEPA Method 22, and the procedures specified in OAC rule 3745-17-03(B)(7). Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.

d. Emission Limitation:

Particulate emissions from the baghouse stack shall not exceed 25.2 pounds per hour.

Applicable Compliance Method:

If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(10). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office. Tests shall be performed during worst-case operating conditions at the stack, as determined by OEPA-SEDO.



e. Emission Limitation:

PM/PM₁₀ shall not exceed 0.19 ton per year, as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance is based on the following equations:

Stack Emissions:

$(0.025 \text{ pound/ton}) \times (15 \text{ tons/hour}) \times (3 \text{ transfer points}) \times (0.90 \text{ capture efficiency}) \times (1 - 0.99 \text{ estimated control efficiency}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton/2,000 lbs}) = 0.04 \text{ ton/year.}$

Fugitive Emissions:

$(0.025 \text{ pound/ton}) \times (15 \text{ tons/hour}) \times (3 \text{ transfer points}) \times (0.10 \text{ capture loss}) \times (8,760 \text{ hours/1 year}) \times (1 \text{ ton/2,000 lbs}) = 0.49 \text{ ton/year}$

Total Emissions:

$0.04 \text{ ton/year} + 0.49 \text{ ton/year} = 0.53 \text{ ton/year, as a rolling, 12-month summation.}$

where:

15 tons/hour maximum equipment throughput rate as submitted in PTI application

0.025 lbs PM/PM₁₀ /ton per AP-42, Section 11.19.2-2 (08/2004)

90% vibratory feeder capture efficiency (based on application information); and

99% baghouse control efficiency (based on application information).

g) Miscellaneous Requirements

(1) None.